



MACDONALD
FRANKLIN
OSI RESEARCH
CENTRE

LAWSON HEALTH RESEARCH INSTITUTE

Annual Report 2019

Through mental health research,
we are committed to improving
the well-being of veterans and
military members.

A photograph of three-dimensional, white, block-letter signage mounted on a light-colored wall. The text is arranged in three horizontal lines, each on a separate raised rectangular base. The top line reads 'MACDONALD FRANKLIN', the middle line reads 'OPERATIONAL STRESS INJURY', and the bottom line reads 'RESEARCH CENTRE'. The lighting creates soft shadows, giving the letters a three-dimensional appearance.

MACDONALD FRANKLIN
OPERATIONAL STRESS INJURY
RESEARCH CENTRE

Annual Report 2019/2020

A COMMITMENT TO CANADA'S HEROES

Mrs. Kyle MacDonald and Mr. John Franklin grew up in proud Canadian military families. Inspired by their fathers who bravely served our country, Kyle and John have honoured these decorated men – their heroes – by making a commitment to the ongoing care of Canada's Veterans and members of the Canadian Armed Forces.

Their gift of \$1 million will support both the unique needs of Veterans who make their home at Parkwood Institute and fund research critical to advancing treatments for men and women who have experienced operational stress injuries, such as post-traumatic stress disorder, as a result of their military service.

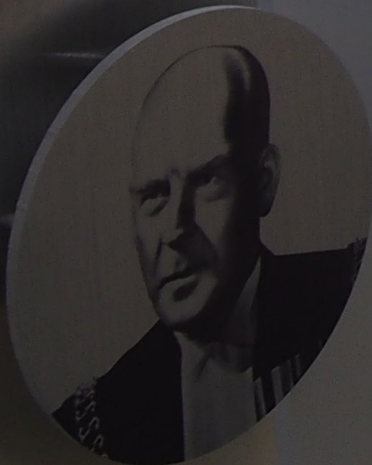
Kyle and John's generosity will touch the lives of those heroes who serve Canada, and their families, supporting their wellness and recovery.

In recognition of their gift, St. Joseph's has proudly named this space the MacDonald/Franklin Operational Stress Injury Research Centre.



CAPTAIN SAMUEL A. MACDONALD

Captain Samuel A. MacDonald began his military service in London, Ontario. He was a Captain in the local Royal Canadian Regiment and served Canada in the Korean War.



COLONEL WILLIAM J. FRANKLIN

Colonel William J. Franklin's military career spanned 45 years, including service in both World War I and II. From 1945-1960 he was the Sergeant-at-Arms of the House of Commons and also served as Honorary Colonel of his Regiment.



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Welcome

The MacDonald Franklin OSI Research Centre

VISION

The MacDonald Franklin OSI Research Centre will be a national and global leader and enabler that bridges research and clinical excellence to promote recovery from OSIs in Veterans and their families.

MISSION

Our mission is to conduct innovative research in a collaborative environment and translate this knowledge to clinical practice to improve the mental health and well-being of Veterans and their families.

CORE ACTIVITIES

The Centre embraces its strategic priorities as foundational to advancing research and innovation capabilities within the Veteran and military mental health interdisciplinary community. To advance each of the Centre's strategic priorities and increase its impact, we will operate through three fundamental activities: 1) Research and Innovation Excellence, 2) Education and 3) Knowledge Sharing.

Director's Statement

From its inception, the vision of the MacDonald Franklin Operational Stress Injury (OSI) Research Centre is to be a national and international leader in research on military and veteran mental health. The Centre's primary mission is to improve the mental health and well-being of veterans with OSIs through clinical and neuroscience research. The Centre aims to foster and enhance collaboration among clinicians and researchers, and maintain our commitment to hear from those we serve by including veteran and veteran family representatives on our Advisory Council.

Over the past two years I am very proud to say that we have made significant progress. As part of our knowledge translation efforts, our clinicians and researchers have published research in peer-reviewed journals, and presented at regional, national, and international conferences. Our Centre has been invited to be an active member of the Five Eyes Collaboration, an international intelligence alliance between Canada, United States, United Kingdom, Australia and New Zealand. We are also leading a project to establish an international data set that will include representation from the United Kingdom, Northern Ireland, Canada and Australia. This will further enhance our understanding of military and



veteran mental health from a global perspective. We have also been able to secure additional funding, which will assist in securing our long-term sustainability.

I am truly grateful for the generous support from Kyle MacDonald and John Franklin through the St. Joseph's Health Care Foundation. Their gift to the St. Joseph's Health Care Foundation is making a difference and will continue to do so for years to come.

Sincerely,

A handwritten signature in black ink, reading "J Don Richardson MD, FRCPC". The signature is written in a cursive style.

J Don Richardson, MD, FRCPC

Scientific Director of the MacDonald Franklin OSI Research Centre

The Research Team



J Don Richardson, MD, FRCPC
Scientific Director

Dr. Richardson is the Scientific Director of the MacDonald Franklin OSI Research Centre, Physician Lead at the SJHC OSI Clinic, an Associate Professor in the Department of Psychiatry, Schulich School of Medicine and Dentistry at Western University, an Assistant Clinical Professor in Psychiatry and Behavioural Neurosciences at McMaster University, and holds the distinguished title of Research Fellow with the Canadian Institute for Military and Veteran Health Research (CIMVHR). Dr. Richardson is on the foremost experts on military-related PTSD and has more the two decades of experience in the assessment and treatment of CAF members and veterans with PTSD and other operational stress injuries. Resulting in over 40 published peer-reviewed articles and book chapters, Dr. Richardson has conducted research in multiple areas of military and veteran and mental health, including risk factors for PTSD and suicidal ideation, health care utilization, treatment outcomes, and the impact of PTSD on quality of life.



Anthony Nazarov, PhD
Postdoctoral Associate

Dr. Anthony Nazarov is a clinical neuroscientist with a research focus on PTSD, moral injury, and social cognition. He is currently a Postdoctoral Associate with the MacDonald Franklin OSI Research Centre and Western University. Anthony completed his doctorate studies at McMaster University under the mentorship of Drs. Margaret McKinnon and Ruth Lanius, where he explored the impact of psychological trauma on cognitive and affective processes. After completing his PhD, he joined the Department of National Defence as a defence scientist at Defence Research and Development Canada investigating psychological resilience and mental health in Canadian Armed Forces personnel. Anthony is interested in using experimental and survey methodologies to explore the interplay between psychological trauma, moral transgressions, and well-being. Specifically, he is interested in understanding how we can better identify, treat, and prevent moral injury and improve treatment outcomes in PTSD.



Renee Hunt, MA, PhD
Postdoctoral Fellow

Renee Hunt is a trained social scientist and postdoctoral fellow in the Department of Psychiatry, Schulich School of Medicine and Dentistry at Western University. She has been working at St. Joseph's MacDonald Franklin OSI Research Centre since 2018. Renee's previous research focused on understanding factors related to general health and well-being from a positive psychological perspective; specifically examining simple interventions associated with big impacts in mental health, well-being, and overall life satisfaction. Funded through a CIMVHR/IBM Mitacs grant, in her role at the MacDonald Franklin OSI Research Centre, Renee is using advanced analytic techniques (e.g., natural language processing, machine learning) to examine the rich and unexplored data captured in clinician notes of military personnel receiving treatment at the SJHC OSI Clinic to determine predictors of suicide, treatment outcomes, and recovery.



Brent Davis, PhD Candidate
MITACS Accelerate Intern

Brent Davis has been working with the MacDonald Franklin OSI team since March 2019. He holds an BSc in the Biochemistry of Immunity and Infection from Western University. He is currently pursuing a PhD in Computer Science at Western University as a member of the In-sight and Phi Labs. His research interests are in applying and integrating AI / Machine Learning systems to complex problem areas in health. His role in the clinic is akin to a Data Scientist – he works to clean, transform and analyze data that is relevant to the clinic. His current work with the clinic focuses on using advanced technology, such as Watson, to perform analytics on data that assists the research team.



Kate St. Cyr, MSc, PhD Student
Research Associate

Kate has been with St. Joseph's OSI Clinic team since 2009, working as a researcher and program evaluation support officer. After completing a BA in Anthropology at McMaster University and an MSc in Public and Population Health in 2008 at Simon Fraser University, she relocated from BC to London, ON, where she found work with the Middlesex London Health Unit and ultimately, the OSI clinic at the Parkwood Institute. Kate's role at the clinic has her involved in all stages of the research process, from the development of research studies to data analysis to writing and the dissemination of final products. She is also involved in a number of program evaluation and quality assurance initiatives throughout the clinic. Kate's research interests include treatment outcomes and determinants of health, particularly as they relate to military personnel and veterans; and vicarious trauma.



Callista Forchuk, MSc
Research Assistant

Callista Forchuk has been working at the MacDonald Franklin OSI Research Centre at Parkwood Institute since 2018. She holds a BA in psychology, and an MSc in Personality and Measurement from Western University. Callista assists in all phases of the research process, and is involved in a range of projects. The primary foci of research projects at the OSI Centre involve suicide risk behaviour, treatment outcomes, and neurobiology of PTSD.



Luciana Brown, MBA
Research Coordinator & Facilitator

Luciana joined the team in October 2019 as the Research Coordinator with Lawson Health Research Institute at St. Joseph's Health Care for the MacDonald Franklin OSI Research Centre and Clinic. Luciana completed her executive MBA in 2015 and holds a post-baccalaureate diploma in Management, both from Athabasca University, Faculty of Business. She completed her Bachelor of Administrative Studies degree at York University in 2003. Luciana has many years of senior administrative and project management experience in Canada and the Middle East, and has worked in varied environments including teaching and community hospitals, government organizations and research settings.

Visiting Scholars



Andrew Bridgen, MD

Psychiatry Resident and Visiting Scholar

Dr. Bridgen is resident Psychiatrist with Schulich School of Medicine. He has a Health Science degree from Victoria University and completed his medical degree at University Science Arts and technology. He has interest in working with first responders, Veterans, and Canadian forces members with PTSD and other operational stress injuries. Dr. Bridgen has research interest in psychiatry specifically functional outcomes, neuroimaging, and PTSD. He continues his training with Schulich Psychiatry program in Windsor.



Bethany Easterbrook, MSc, PhD Student

Neuroscience PhD Student and Visiting Scholar

Bethany is entering her second year as a Ph.D. student in the Neuroscience Graduate Program at McMaster University, supervised by Dr. Margaret McKinnon. She obtained an undergraduate degree in Kinesiology from University of Toronto, and a Master's degree in Health Research Methodology from McMaster University. She has previous research experience in a variety of settings including military mental health, pediatric surgery, manual therapy, disability policy, and schizophrenia. Bethany's current research focuses on moral injury and posttraumatic stress disorder in military, veteran, and public safety personnel populations. Specifically, she is interested in examining which military experiences and mental health outcomes independently increase the risk of developing a moral injury within the Military and Veteran Population population.

Volunteers and Undergraduate Trainees

Cindy Nguyen

Jennifer Shatsky

Tania Al-jilawi

Tri Le

Dakota Fisher

Acknowledgments

We would like to acknowledge [Heather Tales](#), [Bev van der Heide](#), and [Priya Herne](#) for their support of research, and the ongoing commitment and contribution of OSI clinic staff collaborators:

Lisa King

Felicia Ketcheson

Erisa Deda

Maya Roth

Craig Stewart

Michelle Marlborough

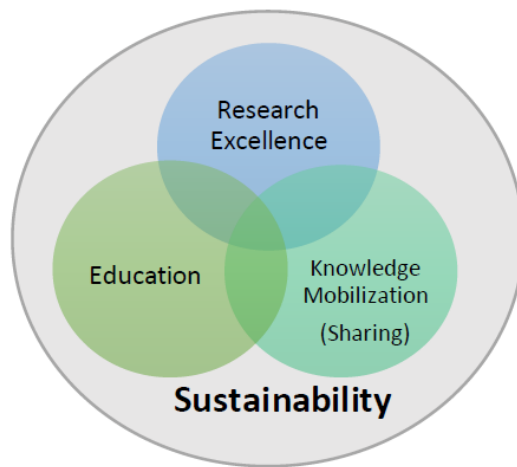
Ken Balderson

Tania Oakley

Jenn Safadi

Statement of Priorities

The MacDonald Franklin OSI Research Centre was built on current ongoing partnerships, as well as the pursuit of new collaboration amongst relevant key stakeholders including the health care sector, industry, government, and academia.



The Centre operates through three fundamental activities:

Research and Innovation Excellence

Promoting research excellence in the area of OSIs is central to the mission of the Centre. The research output is reliant upon its ability to foster expertise within the field of OSIs, with an emphasis on PTSD. The Centre is positioned to have a pivotal role in advancing academic research and innovation to advance clinical care and client outcomes.

Knowledge Sharing

To ensure knowledge is continuously shared both within our network and beyond, knowledge mobilization activities will be core to the Centre. The Centre will emphasize the dissemination of research findings at both local and national network of clinics to improve patient outcomes and promote recovery.

Education

The creation of the Centre will continue a tradition of excellence in educating current and future clinicians and researchers. The Centre will engage in education initiatives by facilitating capacity building and training opportunities across a variety of disciplines, partners and stakeholders.

Progress on Priorities



Research and Innovation Excellence

Throughout the past year, the Centre has cultivated expertise in research and innovation excellence by engaging with the OSI Clinic and positioning itself as a hub of research activities. Active recruitment resulted in approximately 50 study participants involved in approximately 10 retrospective and prospective studies either through chart review or primary data collection. The main areas of focus for the Centre's research were treatment outcome, understanding suicide, neurobiology of PTSD, moral injury, comorbidity of psychiatric disorders, and the impact that OSIs have on the lives of veterans and their families. Of the thirteen new and existing grants the Centre is currently associated with, the Centre Staff are Principal investigators or Co-Principal Investigators on seven and collaborators on six grants. Long-term outcomes from these studies will lead to better understanding of recovery and barriers to recovery, and enable clinicians to offer individually-tailored treatments options that directly impact recovery. Our goal is to continue attracting top scientific talent and further expand our internal expertise to conduct gold-standard, innovative research related to military and veteran mental health.

Education and Knowledge Sharing

Staff of the MacDonald Franklin OSI Research Centre are actively involved in training and professional development through internal and external education initiatives, including attending and presenting at conferences. In addition to providing the means for trainees to attend conferences, the Centre also shares and disseminates its knowledge to the rest of the research and clinical community through seminars and research meetings.

List of Events for Education and Knowledge Sharing

2018

September 17-20	UK Combat Stress Meeting	London, UK
September 27-29	Canadian Psychiatric Association Meeting,	Toronto, ON
October 15-17	Canadian Institute for Military and Veteran Health Research	Regina, SK
October 18-25	Centre for Posttraumatic Mental Health Meeting, Phoenix Australia	Melbourne, Australia
October 29-30	Veterans Affairs Canada Summit	Ottawa, ON
November 7-10	5 Eyes Mental Health Research and Innovation Collaborative Meeting	Washington, DC
November 29-30	NATO Meeting	Washington, DC

2019

February 2	Depression in 2020: Biomarkers, Technologies and Novel Therapies	Toronto, ON
May 1	31st Annual McMaster Psychiatry Research Day	Hamilton, ON
May 23	Women Veteran Forum	Charlottetown, PEI
May 31-June 1	Innovations in the Science of Cannabis Conference	Hamilton, ON
August 29	Research Western Conference	London, ON
September 11-14	Canadian Psychiatric Association Annual Conference	Montreal, QC
October 8-10	NATO Meeting	London, UK
October 21-23	Canadian Institute for Military and Veteran Health Research,	Gatineau, QC
October 24	Mental Health Research & Innovation Day	London, ON
November 12-16	5 Eyes-Mental Health Research and Innovation Collaborative meeting	Boston, MA
November 14-16	International Society for Traumatic Stress Studies - 35th Meeting	Boston, MA
November 28	Parkwood Institute Research - Open House	London, ON
December 5	Symposium: Exposure to Sexual Misconduct During Military Service	Guelph, ON
December 12	REDCap Convention	Toronto, ON

Research Consortium Meetings

January 30, 2019	London, ON
June 10, 2019	Toronto, ON
December 3, 2019	Guelph, ON
April 20, 2020	London, ON (Upcoming)



Media Resources

The Centre is developing an Internet presence through a Twitter account, and an upcoming Centre website. Having a social media presence will enable us to disseminate key findings and reports on study outcomes, relevant articles, and other information of interest to patients, clinicians, researchers, veterans, and other citizens who choose to engage with us. Having an active web presence should translate to increased social awareness and enable us to be stronger advocates for our patients and for evidence-based practices. The Centre has received approval to use a program identifier that meets the guidelines of the Lawson Health Research Institute. This identifier will be used on all Centre branding and correspondence.

Trainee Development

Over the past year, we have continued our dedication to the professional development of the next generation of researchers and clinicians. Centre staff provides direct supervision of students in a wide range of fields, including health informatics, psychology, computer science, and neuroscience.

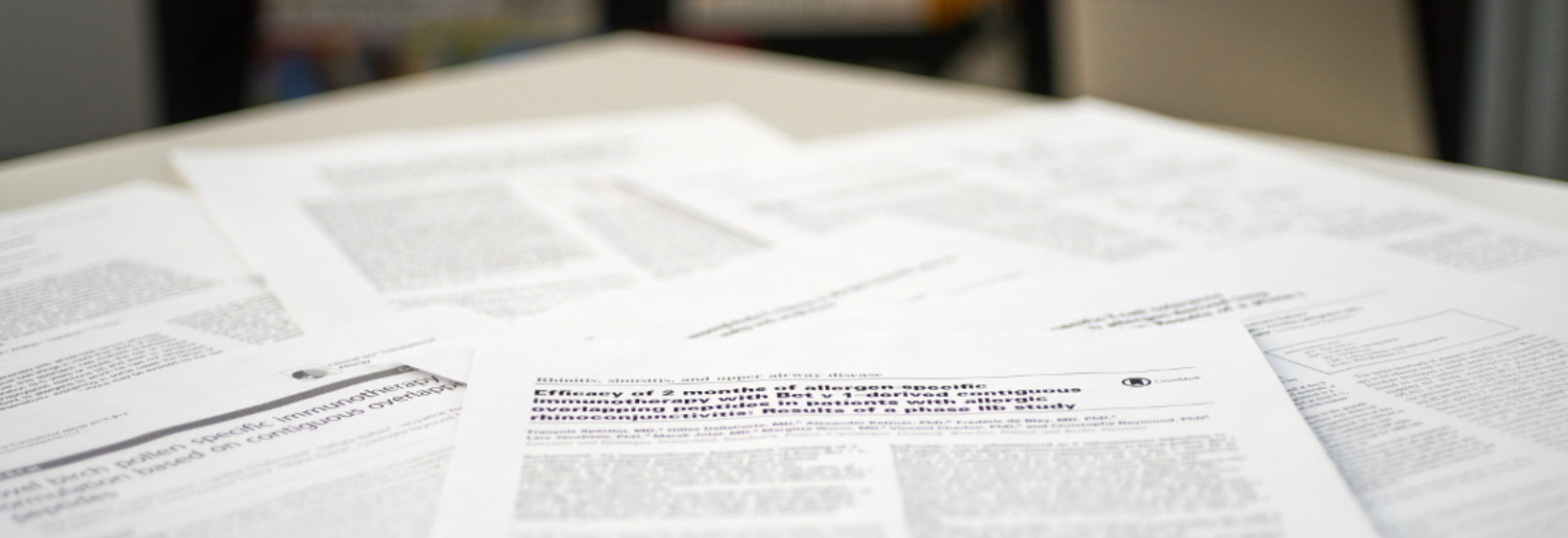
PhD Candidates	Brent Davis	Western University
	Bethany Easterbrook	McMaster University
Undergraduate Students	Tri Le	Western University
	Jennifer Shatsky	Western University
	Cindy Nguyen	Western University
	Tania Al-Jilawi	Western University
Medical Residents	Andrew Brigden	Western University

Strategic Partnerships

We have dedicated significant effort into fostering existing and building new strategic partnerships among academia, government, and industry to support the priorities of the MacDonald Franklin OSI Research Centre. Through collaborative initiatives and formal advisory, the following are highlights of the partnerships and relationships the Centre maintains:

- OSI Clinic
- Veteran Affairs Canada
- Department of National Defence
- Defence Research & Development Canada
- Canadian Institute for Military and Veteran Health Research (CIMVHR)
- McMaster University
- Queens University
- Homewood Health
- Ryerson University
- University of Toronto
- Boston University
- Phoenix Australia, Centre for Posttraumatic Mental Health
- Centre of Excellence on Posttraumatic Stress Disorder and Related Mental Health Conditions
- Operational Stress Injury Social Support (OSISS) Program
- Statistics Canada
- IBM Canada
- Queen's University Belfast
- Combat Stress UK

Research Excellence. Project Highlights





Can natural language processing and artificial intelligence algorithms be used to identify and extract features associated with suicide attempts, moral injury, and patterns of comorbidity from unstructured clinical and self-report data?

PTSD poses a significant health challenge that disproportionately affects military personnel with prevalence rates as high as 18% for CAF veterans. Although PTSD is well-studied and quantified, a rich source of potentially expounding information may be contained in clinician text notes that have previously been untapped. This study will use data found in clinician notes for treatment-seeking CAF veterans receiving treatment at the OSI Clinic located in London, Ontario over the course of treatment. The project has four main objectives, to: (1) develop and validate an algorithm to identify suicide ideation and risk; (2) develop and validate an algorithm to predict treatment trajectory and outcome (with an emphasis on recovery); (3) expand our understanding of patterns of comorbidity; and (4) build our capacity and knowledge surrounding deployment-related exposure that is associated with experiences of moral injury. Natural language processing (NLP) and machine learning analysis techniques will be applied to the unstructured free-text data contained in clinicians notes in patients' EMRs to identify those at risk for suicide, distinguish factors associated with achieving recovery, highlight the impact of comorbidity in treatment, and develop a clear picture of what constitutes a morally injurious event, as well as who is at risk for experiencing moral injury.

After a finalized de-identification script was completed and a process for handling data was developed, final hospital ethics approval for this project was issued in August 2019. Information Technology Services is in the process of extracting clinician notes from electronic medical records to undergo NLP analyses. Once all clinician notes have been extracted, NLP analyses will begin.

Utilizing pharmacogenetics to enhance personalized psychiatric care for treatment-seeking Canadian Armed Forces veterans

Patients in psychiatric treatment for their OSIs may undergo several unsuccessful medication trials before finding a personally suitable option. This project aims to use pharmacogenetics to retrospectively investigate whether genetic testing could have predicted suitable psychiatric medications. Patients that have already found a successful medication, after unsuccessful medication attempts, are invited to provide a cheek swab for genetic testing. Genetic results are then used to determine whether their successful medication could have been predicted via genetic testing.

Twenty-three (23) OSI Clinic patients consented to participation in this study. Recruitment has been completed. Their cheek swabs have been analyzed by DNA Labs and we have received pharmacogenetics reports for all patients. The data has preliminarily been analyzed. We are working on streamlining the analytic plan and identifying measurable outcomes to focus on. Once the analysis is complete, we will initiate manuscript preparation, and are aiming for a brief report. A meeting between the principal investigator, collaborator at DNA Labs, and a researcher will be established. Data analysis and manuscript preparation will be initiated.



Epidemiological Analysis of the Mental Health and Well-being of Canadian Armed Forces and Veterans

The Canadian Armed Forces Members and Veterans Mental Health Follow-up Survey (CAFVMHS) is a nationwide initiative conducted by Statistics Canada to follow-up with respondents of the 2002 Canadian Community Health Survey: Canadian Forces Supplement on Mental Health. The purpose of the CAFVMHS is to examine the longitudinal mental health outcomes of Canadian Armed Forces members, some of which have since released. This is the first longitudinal survey of military and veteran mental health in the world that uses gold standard epidemiological survey methodology. In collaboration with other researchers across Canada, we are leading analyses in three major research domains (see below).

Sleep and Suicide

The role of sleep disturbances on suicidal behaviours and mental illnesses is being investigated in a large nationally representative sample of CAF members and veterans. We will be accessing this data to determine whether sleep disturbances impact the probability of suicidal behaviours, and whether this impact varies according to individual differences. We will also be investigating whether reported sleep disturbances on the 2002 survey may be a risk factor for experiencing mental illness in the future. Findings will inform us of the role that sleep disturbances may have on suicidal behaviours and mental illness. The results of this study can be used to understand the implications of sleep problems, and to determine which individuals may be most severely impacted by sleep problems. Our protocol has received approval from Statistics Canada and we have conducted onboarding of our staff and collaborators. We will be conducting analysis in 2020 to explore sleep and suicide/mental illness and reporting on the results.

The protective potential of exercise: Trauma exposure, mental health, and symptom severity

Currently, little is known regarding the physical activity habits and practices of CAF members and veterans, or the impact that physical activity has on the functional status of CAF members and veterans with mental health diagnoses. To the extent that physical activity acts as a protective factor, it should also be related to less reliance on mental health services (and thus help to prevent undue burden on an already stressed system). There is a need to further explore not only the impact of physical activity on the mental health

in CAF members and veterans, but also to examine the extent to which engaging in physical activity acts as a buffer (i.e., a modifier) between deployment experiences/trauma exposure and adverse mental health outcomes. Approval from Statistics Canada was received November 2019. Preparation of analytic design and protocol and completion of data analyses to be completed in 2020.

Moral Injury

Many military personnel are exposed to events where they or others transgress deeply held moral beliefs. The consequences of such experiences may include moral injury, a specific type of psychological injury encompassing shame, feelings of worthlessness, and potentially, a loss of meaning and altered self-concept. The 2018 CAFVMHS survey is the first national survey to include a well-validated measure of moral injury, and thus represents an ideal opportunity to explore its predictors, prevalence, and associated outcomes. Specifically, our team will be assessing the prevalence and severity of moral injury in active and released CAF personnel, the sociodemographic and military-related predictors of moral injury, and the impact of moral injury on adverse mental health outcomes and treatment-seeking. Results of this research will contribute to our understanding of the impact that moral injury has on mental health outcomes, and may guide the development of optimal treatment interventions for CAF personnel with moral injury. Our protocol has received approval from Statistics Canada and we have conducted onboarding of our staff and collaborators. We will be conducting analysis in 2020.

Quality of Life

Analyses were conducted to determine how quality of life is affected in CAF veterans with co-occurring depression and PTSD. Clinical data was obtained from CAF veterans seeking treatment at St. Joseph's Health Care OSI Clinic. It was found that although both PTSD and depression were associated with reduced quality of life, PTSD became less influential in individuals who also experienced severe depression symptoms. Findings revealed that depression symptoms strongly reduce quality of life in areas related to physical and psychological functioning. Further, findings suggested that treating depression symptoms among those with co-occurring PTSD and depression may have the most substantial impact on quality of life. We have prepared a manuscript describing our findings, which has been submitted for publication.



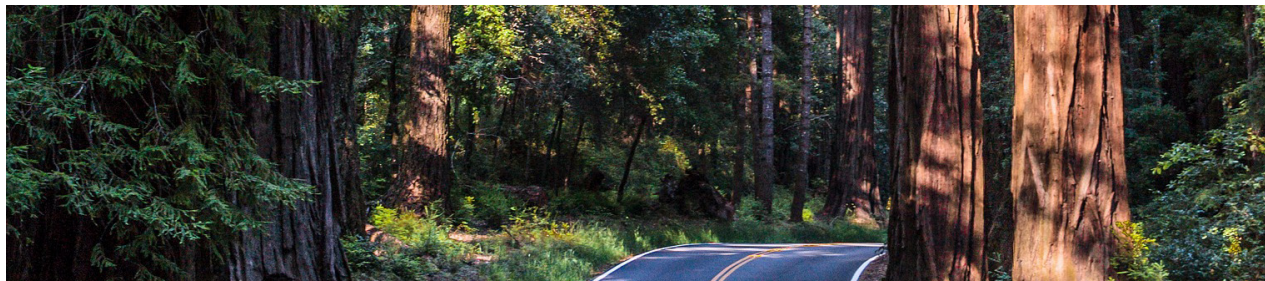
International Dataset

The objective of the current study is to examine mental health data from armed forces members and veterans from Australia, Canada, England, Northern Ireland, and Wales. We plan to utilize this combined dataset to investigate with greater power: i) whether certain PTSD symptom clusters have a greater impact on well-being, ii) to determine how common disorders cluster together in a treatment-seeking military sample, iii) to determine whether certain traumatic experiences are more related to adverse mental health conditions, and iv) explore gender differences in the aforementioned research priorities. Additionally, where possible, we plan to examine similarities and differences that exist across the different armed forces' datasets. Full ethics approval has been issued and we are awaiting completion of Data Sharing Agreements with all participating sites. We will then create a database framework in REDCap and have data from all sites uploaded to this instance.



Internet-based Cognitive Behavioural Therapy

Internet-based cognitive behavioural therapy (iCBT) represents an innovative method for delivering evidence-based therapy that can be accessed digitally, from any location with internet service. We are investigating whether iCBT is an acceptable and viable treatment option for PTSD for CAF Veterans. The study will involve veterans who are experiencing PTSD and enroll in a therapist-guided iCBT program. The study aims to understand the feasibility and effectiveness of the iCBT program in terms of symptom reduction, ease and comfort of use, and engagement. Findings from this study will reveal whether this form of treatment may be a viable option for CAF veterans with PTSD. It is hoped that results will provide support for an accessible form of treatment that may overcome geographical, and scheduling or stigma-related barriers to treatment. We are working in collaboration with Canadian Institute for Public Safety Research and Treatment to assess the recently created iCBT platform developed by the Online Therapy Unit, founded by Dr. Heather Hadjistavropoulos. We will be conducting analysis in 2020 to assess the potential of iCBT and will be reporting on our results.



Understanding Recovery from PTSD

The Centre has forged an ongoing commitment to understand the subjective experiences of recovery, and to understand factors that are associated with recovery. Our team has collected over 20 hours of interview data over the past year to this end, and will be expanding this research programme to explore the neurobiological and physiological markers of PTSD recovery.

IDEaS 1a - Predictors of PTSD Recovery: A Mixed-Methods Approach

A mixed methods approach combining quantitative treatment outcome data and qualitative analysis was employed to examine and better understand predictors of recovery from military-related PTSD in CAF serving personnel and veterans. Semi-structured interviews were conducted to explore the experience of PTSD recovery from the perspectives of CAF serving personnel and veterans, and from the perspectives of their significant others. Interviews will be used to provide a much richer and deeper understanding of recovery and how the treatment process and significant others have influenced recovery.

All interviews with veterans and their spouses have been conducted and transcribed. The first half of the interviews was coded and a qualitative synthesis was created to capture the themes that emerged. The second half of the interviews is in the process of being coded to ascertain whether any additional themes are detected. Additional themes will be used to update the codebook. Once coding is complete, information from these additional interviews will be added to the qualitative synthesis. Initial analyses were presented at the Canadian Institute for Military and Veteran Health Research 2019 Forum.

Manuscripts are being prepared for two publications: (1) strictly qualitative assessment of interviews, and (2) a mixed methods approach to determine which captured themes are related to symptomatology. Additional funding has been awarded to complete a complementary project (see next project).

IDEaS 1b - Understanding recovery: An examination of functional and health-related quality of life in military-related PTSD in recovery

Utilizing a multidisciplinary approach combining rich qualitative data, clinical assessments, and biomarker analysis, a comprehensive and nuanced snapshot of the different stages of illness/recovery from military-related PTSD and the associated subjective perceptions on quality of life and prognosis will be captured. Semi-structured interviews will be conducted with CAF serving personnel and veterans at various stages in the treatment process, as well as their nominated support person to develop a rich, granular, understanding of what recovery and treatment means to veterans and their support teams. Additionally, fMRI, blood-based biomarker analysis, and speech analysis will be included to determine the feasibility of classifying PTSD in recovery based on a collection of objective tools and assessments (e.g., neural activation patterns, speech analysis).

Funding has been awarded by the Innovation for Defence Excellence and Security (IDEaS) program through the Department of National Defence. The protocol for the project is being finalized with all key stakeholders, and university and hospital ethics processes are underway. Additionally, interviews for research assistants and postdocs to work on for this project are ongoing. Ethics approval is pending, and will be required prior to beginning participant recruitment and implementation of study procedures.

Using interpersonal circumplex theory (IPC) to understand and address deployment-related changes in interpersonal style

Many symptoms of PTSD have an interpersonal dimension (e.g., irritable behaviour and angry outbursts) or interpersonal consequences (e.g., persistent inability to experience positive emotions). Colloquially, it is often asserted that military personnel return home from their deployment experiences “changed” - e.g., that they have become “cold” or “angry all the time.” In therapy conversations about the IPC model, clients often describe a shift toward marked hostile dominance on tour, and a tendency to get “stuck” in this mode post-deployment, or to “lose control of the switch,” such that they find themselves flipping into this mode even when they can see the harm it does to their relationships. Clinical experience suggests that framing these interpersonal changes in terms of IPC theory can be a useful exercise for these clients. The utility of IPC theory as a therapeutic tool will be assessed via interpersonal mapping and qualitative interviews. Qualitative analysis will examine the extent to which this framework affords the ability of clients to contextualize and normalize these interpersonal shifts, reflect on how their interpersonal behaviour might be eliciting unwanted responses from others, and generate ideas about how to make small behavioural shifts in valued directions. Audio-recorded interviews are in the process of being transcribed verbatim. Once transcription is complete, all data will be coded for thematic content and a qualitative synthesis will be compiled.

Loneliness and Moral Injury

We are exploring the mechanisms through which moral injury may contribute to adverse mental health outcomes, such as suicidal ideation. Moral injury may lead to loneliness through the known social withdrawal effects that can occur, particularly when individuals experience significant shame. We predict that moral injury will increase the odds of adverse outcomes due to elevated feelings of loneliness. To test this hypothesis, we will collect and analyze data from 100 treatment-seeking CAF veterans. Results from this study will represent the first examination of loneliness in Canadian veterans, will illuminate potential pathways through which suicide prevention efforts may be directed, and will allow us to understand why and when moral injury may be particularly deleterious. Protocol development is underway and data collection will begin in 2020.

Confidentiality related to Moral Injury

This is the first study in the world to explore veterans' and military members' beliefs about confidentiality in mental health care and whether those beliefs act as a barrier to seeking treatment for moral injury. Moral injury describes psychological distress following events where a person performs, witnesses or fails to prevent acts that conflict with deeply held moral standards. Evidence suggests that moral injuries are on the rise among deployed members of the CAF, and that those exposed to such events are at a higher risk of developing mental health conditions. Through the study, which will also be open to participants receiving care at St. Joseph's Health Care London OSI Clinic, we aim to understand barriers that might prevent military personnel from disclosing details of moral injury.

Recent research conducted by our group has discovered that moral injury may influence help-seeking patterns in deployed CAF members. We still do not know why this is the case or whether this is also seen in individuals who release from the military. A commonly reported barrier for mental health help-seeking in a military setting is a perceived lack of confidentiality. Due to the perceived ethical ambiguities of some events that may induce moral injuries, it is possible that military personnel with moral injuries may be more likely to withhold details of their trauma or avoid seeking help due to worries about confidentiality. If Veterans do not feel comfortable disclosing certain details because of perceived mistrust related to privacy, we need to know why that is and what we can do to address this issue.

Collaborations

Using machine learning of MEG to examine brain function in PTSD

Currently, no objective biological means of diagnosing PTSD exists, and diagnosis instead relies on lengthy clinical interviews that can act as barriers to timely prognosis and intervention. Moreover, there is significant heterogeneity in the presentation of PTSD, making diagnosis and treatment planning more complex and onerous. The ability to identify a brain-based biomarker is a critical step toward establishing precision treatments. This study aims to identify a PTSD biomarker that will provide game-changing personalization in therapeutics. This project involves the continuation of a highly successful collaboration (over 15 publications) between the Hospital for Sick Children with the CAF, Defence Research Development Canada (DRDC) and the Canadian

Institute of Military and Veteran Health Research (CIMVHR) that identified novel brain signatures in a group of PTSD-sufferers. This fundamentally advanced our neurobiological understanding of PTSD, with neural signatures capturing characteristic alterations to brain function and communication – dubbed ‘connectomics’ – and providing empirical support for the ‘neurocircuitry’ model of the disorder. We will translate these empirical findings to a fully-realized and useful clinical tool by investigating the utility of brain ‘maps’ in classifying individual cases, predicting outcome at follow-up and test their clinical validity in diagnosis. Specifically, our objectives will be to leverage our longitudinal magnetoencephalography (MEG) and clinical data, acquired 2-3 years apart (Phase I in 2013, and Phase II in 2016), to determine (1) the efficacy of these biomarkers in PTSD diagnosis; and (2) their effectiveness in symptom resolution prediction. This will be achieved through the utilization of cutting-edge multivariate statistics and machine learning. An updated protocol is in the process of being drafted for

the newly funded component. Additionally, a manuscript focused on the use of Machine Learning to predict PTSD diagnosis is currently under review. Completion of finalized research protocol and participant recruitment to begin by February 2020.

Endocannabinoid metabolism in individuals with PTSD, examining [C-11]CURB

The question this project will address is what is/are the neurochemical basis of aberrant neural signalling in amygdala-related circuits in humans with PTSD and is the endocannabinoid system, anandamine involved? The primary objective of this study is to use PET imaging of the novel ligand [C-11]CURB to provide the first direct measurement of FAAH in PTSD. Specifically, we are interested in comparing FAAH levels in individuals with PTSD compared to healthy matched controls to investigate whether FAAH levels contribute to the development and maintenance of PTSD. We are currently referring only.



Service and Research Improvement Projects

Electronic Data Capture Transformation

In an evolving technological and environmentally conscious landscape, many treatment and research centres are moving away from paper-based assessment tools and toward electronic assessments. The benefits of electronic assessments include built-in error checking and data validation, automatic audit trails, strictly enforced security guidelines, and tools to streamline assessment scheduling and report generations. To facilitate the move to electronic data collection, we are working with stakeholders and developing a procedure to transform the way we capture, store, and manage research data.

Improving Participant Recruitment

OSI Clinic patients and clinicians are seeking information about research opportunities and studies taking place. To facilitate bringing awareness of research studies to the entire network of clinics and engage a larger number of study participants across all OSI clinics, we have initiated a plan to implement a “Consent-to-Contact for Research” document process that will be mandatory component of all of our research protocols. This will allow study leads to contact potential participants based on their interest or indication that they want to be contacted for future studies. This is in line with the direction health care facilities are moving towards with the “Opt-Out” research initiatives, where patients’ basic contact information will be available for research purposes unless the patient opts-out.

Path to Sustainability. Overview of Research Grants



Research Grants

Understanding Recovery

Understanding recovery: An examination of functional and health-related quality of life in military-related PTSD in recovery. Funding Source: Department of National Defence, IDEaS Program. Principal Investigator. **\$701,335.**

Confidentiality of Moral Injury

Beliefs about Confidentiality and Attitudes toward Disclosure of Moral Injuries. Funding Source: Veterans Affairs Canada. Principal Investigator. **\$59,104.**

Loneliness

The impact of loneliness and moral injury on suicide in treatment-seeking veterans. Funding Source: Western University. Principal Investigator. **\$5,000.**

Magnetoencephalography and PTSD

Utilizing magnetoencephalography (MEG) data to examining connectivity profile in PTSD. Funding Source: Department of National Defence, IDEaS Program. Co-Investigator. **\$850,000.**

Sexual Misconduct

Impact of Military Sexual Trauma with Canadian female-identifying military members and Veterans. Funding Source: CIMVHR True Patriot Love Research Initiative. Co-Investigator. **\$100,000.**



Artificial Intelligence and Clinical Data

Can natural language processing and artificial intelligence algorithms be used to identify and extract features associated with suicide attempts, moral injury, and patterns of comorbidity from unstructured clinical and self-report data? Funding Source: CIMVHR Advanced Analytics Initiative. Principal Investigator. **\$200,000.**

Understanding Recovery

Understanding predictors: recovery of military-related PTSD from both an individual and family perspective using qualitative and quantitative analysis. Funding Source: Department of National Defence, IDEaS Program. Principal Investigator. **\$47,260.**

Magnetoencephalography

Application of non-invasive magnetoencephalography for objective assessment of Posttraumatic Stress Disorder: A pilot study. Funding Source: Department of National Defence, IDEaS Program. Collaborator. **\$70,000.**

Yoga

The SKIP study: Sudarshan Kriya Yoga In Post traumatic stress injury, an RCT for Public Safety Personnel. Funding Source: Canadian Institutes of Health Research. Co-investigator. **\$133,000.**

Brain Imaging and Precision Medicine

Leveraging longitudinal functional brain imaging data for precision medicine in PTSD. Funding Source: Canadian Institute for Military and Veteran Health. Co-investigator. **\$200,000.**

International Dataset

Veteran mental health across international boundaries. Funding Source: Veterans Affairs Canada. Principal Investigator. **\$52,925.**

Diagnostic Brain Imaging

Imaging the invisible: Teasing apart trauma using advanced neural imaging and artificial intelligence to differentially diagnose mental health challenges. Funding Source: CIMVHR. Co-investigator. **\$99,151.**

Magnetoencephalography

Utilizing magnetoencephalography to examine brain function in posttraumatic stress disorder. Funding Source: Innovation for Defence Excellence and Security. Co-investigator. **\$131,900.**

Virtual Reality

Virtual Reality Wellbeing and Mastery for Canadian Veterans and their families. Funding Source: Veterans Affairs Canada: Veteran and Family Well-Being Fund. Co-Investigator. **\$63,000.**

Ongoing Grants (Continued)

Meta-Analysis of Treatments

Management of posttraumatic stress disorder: a multiple treatment comparison meta-analysis of randomized controlled trials., Funding Source: Workers Compensation Board of Manitoba. Co-Investigator. **\$158,243.**

Machine Learning

Enhancing the Management of Military PTSD using Machine Learning, Funding Source: The Interdisciplinary Research Fund. Co-Investigator. **\$25,000.**

Cannabinoid Metabolism

Endocannabinoid metabolism in PTSD neuroimaging, Funding Source: Canadian Institutes of Health Research. Co-Investigator. **\$1,230,000.**

Neuroimaging of PTSD

Neural, cognitive and biological correlates of the dissociative subtype of PTSD among military members, Funding Source: Canadian Institutes of Health Research. Co-Investigator. **\$608,000.**

Epidemiology of PTSD

Defining the longitudinal course, outcomes, and treatment needs of vulnerable Canadians with posttraumatic stress disorder, Funding Source: Canadian Institutes of Health Research. Co-Investigator. **\$1,888,760.**

Reconsolidation Therapy

Comparing Standard Vs. Enhanced Reconsolidation Therapy for the Treatment of Psychological Trauma: A randomized controlled trial. Funding Source: Canadian Institutes of Health Research. Collaborator. **\$702,272.**

Grant Submissions Awaiting Decision

Cannabis and Well-being

Cannabis use among Canadian Armed Forces Veterans: impact on the health and well-being of Veterans and Veteran families. Funding Source: Canadian Institutes of Health Research/Veterans Affairs Canada Joint Initiative. Principal Investigator. **\$1,500,000.**

Therapeutic Value of Cannabis

Cannabis for therapeutic use among military personnel and veterans: A prospective observational study. Funding Source: Canadian Institutes of Health Research. Collaborator. **\$100,000.**

Cannabis for PTSD

Safety and efficacy of cannabis use in treating PTSD in Canadian Armed Forces personnel and Veterans. Funding Source: Canadian Institutes of Health Research. Co-investigator. **\$4,320,000.**

Moving Forward.

Roadmap for the Future

Improving awareness among veteran community and public

We continue to work with the Media and Communications department at Lawson Health Research Institute (LHRI) and the St. Joseph's Health Care Foundation to expand the awareness of the MacDonald Franklin OSI Research Centre. Our communication plan will utilize social media in the forms of a Twitter account ([@OSIResearch](#)) and dedicated web presence. These initiatives will strengthen our presence in the research community and among the patients who benefit from the research being conducted.

Collaborations with OSI Clinics

The implementation of the Consent-to-Contact forms is a first step in building a research network for the OSI Clinics. A major benefit of building this collaboration is to enable clinics and researchers to have access to a larger group of patients and data for conducting research and clinical trials. This will also foster collaborations with clinicians who may want to take a more active role in research activities conducted in their area of practice. As we expand sharing of patient resources, we acknowledge the magnitude of responsibility in ensuring that patient information is protected. We will ensure that our processes will align with the federal code for the protection of personal information and related provincial codes.

Increasing research capacity

The Centre hired its first Research Coordinator in 2019 and will continue to increase the number of staff in the coming year with the addition of an administrative assistant, research assistants, trainees/students, and postdoctoral fellows. These hires will further enable the Centre to establish processes and operating procedures for study coordination, administrative, human resource and financial operations. The addition of research assistants and trainees increases the potential for amplified primary data collection capacity. Our goal is to continue attracting top scientific talent and further expand our internal expertise to conduct gold-standard, innovative research related to military and veteran mental health.

Focus on output and knowledge translation

The MacDonald Franklin OSI Research Centre hosted three Research Consortium meetings, bringing together Ontario's top mental health researchers, clinicians, and policymakers - we plan to continue this tradition. After the December meeting, a post-event survey was distributed to current and past attendees. The information received will help us to continually improve the research consortium experience for all attendees. We will continue to focus on producing high-quality knowledge translation materials by carefully tailoring materials for different stakeholder types. For instance, we will continue to focus on scientific publications for the research and clinical community and create easily-digestible print materials for the Veteran community, patients, policymakers, and front-line clinicians.

Publications, Presentations, and Dissemination

Peer-Reviewed Journal Articles

Easterbrook, B., Nazarov, A., Fikretoglu, D. (submitted).

Fidelity in Workplace Mental Health Intervention Research: A Narrative Review and a Prescriptive Research Agenda. *Review of General Psychology.*

Nazarov, A., Fikretoglu, D., Liu, A., Richardson, J.D., Thompson, M. (submitted). **Help-seeking for mental health issues in deployed Canadian Armed Forces personnel at risk for moral injury.** *European Journal of Psychotraumatology.*

Protopopescu, A., Boyd, J., O'Connor, C., Hood, H., Nazarov, A., Rhind, S., Jetly, R., Lanius, R., McKinnon, M. (submitted). **Moral injury, PTSD, depression, anxiety, and stress in a Canadian military and veteran sample: The mediating role of emotion dysregulation.** *Journal of Military, Veteran and Family Health.*

D'Agata, M., Granek, J., Holden, R., Nazarov, A. (submitted). **The Relation between Self-Concealment and Self-Reported Mental Health Symptoms in a Sample of Canadian Armed Forces Personnel.** *Military Psychology.*

Battaglia, A., Protopopescu, A., Boyd, J.E., Lloyd, C., Jetly, R., O'Connor, C., Hood, H.K., Nazarov, A., Rhind, S.G., Lanius, R.A., McKinnon, M.C. (2019). **The relation between adverse childhood experiences and moral injury in the Canadian Armed Forces.** *European Journal of Psychotraumatology*, 10, DOI: 10.1080/20008198.2018.1546084.

D'Agata, M., Easterbrook, B., Nazarov, A., Pickering, D.I. (2019). **Post-deployment reintegration satisfaction and events impacting well-being in Canadian Armed Forces Primary Army Reservists: A Qualitative Analysis.** Scientific Report. *DRDC Publications*, DRDC-RDDC-2019-R256. CAN Unclassified.

D'Agata, M., Nazarov, A., Granek, J. (2019). **Subjective self-mapping in the Mental Health Continuum Model.** Scientific Report. *DRDC Publications*, DRDC-RDDC-2018-R294. CAN Unclassified.

Fikretoglu, D., Liu, A., Nazarov, A., Blackler, K. (2019). **A Group Randomized Control Trial to Test the Efficacy of the Road to Mental Readiness Program (R2MR).** *BMC Psychiatry*, 19, 326.

Forbes, D., Pedlar, D., Adler, A.B., Bennett, C., Bryant, R.A., Busuttil, W., Cooper, J., Creamer, M.C., Fear, N.T., Greenberg, N., Heber, A., Hinton, M., Hopwood, M., Jetly, R., Lawrence-Wood, E., McFarlane, A.C., Metcalf, O., O'Donnell, M.L., Phelps, A., Richardson, J.D., Sadler, N., Schnurr, P.P., Sharp, M.L., Thompson, J.M., Ursano, R.J., Van Hooff, M., Wade, D. & Wessely, S. (2019). **Treatment of military-related posttraumatic stress disorder: Challenges, innovations, and the way forward.** *International Review of Psychiatry.*

Ketcheson, F., Cyr St, K., King, L., & Richardson, J. D. (2018). **Influence of PTSD and MDD on somatic symptoms in treatment-seeking military members and Veterans.** *Journal of Military, Veteran and Family Health*, 4(2), 101-109.

Nicholson, A. A., Densmore, M., McKinnon, M.C., Neufeld, R. W. J., Frewen, P. A., Théberge, J., Jetly, R., Richardson, J. D., Lanius, R. A. (2019). **Machine learning multivariate pattern analysis predicts classification of posttraumatic stress disorder and its dissociative subtype: a multimodal neuroimaging approach.** *Psychological medicine*, 49(12), 2049-2059.

Richardson J.D.; Thompson, A.; King, L.; Ketcheson, F.; Shnaider, P.; Armour, C.; St. Cyr, K.; Sareen, J.; Elhai, J.D.; Zamorski, M.A. (2019). **Comorbidity patterns of psychiatric conditions in Canadian Armed Forces personnel.** *The Canadian Journal of Psychiatry*, 64(7):501-510.

Richardson, J. D., Ketcheson, F., King, L., Forchuk, C., Hunt, R., St. Cyr, K., Nazarov, A., Shnaider, P., McIntyre-Smith, A., Elhai, J.D. (2019). **Sexual Dysfunction in Male Canadian Armed Forces Members and Veterans Seeking Mental Health Treatment.** *Military Medicine*. doi.org/10.1093/milmed/usz163

Richardson, J.D., King, L., St. Cyr, K. et al. **Depression and the relationship between sleep disturbances, nightmares, and suicidal ideation in treatment-seeking Canadian Armed Forces members and veterans.** *BMC Psychiatry*.

Yeterian, J.D., Berke, D.S., Carney, J.R., McIntyre-Smith, A., St. Cyr, K., King, L., Kline, N.K., Phelps, A., Litz, B.T., Members of the Moral Injury Outcomes Project Consortium. (2019). **Defining and Measuring Moral Injury: Rationale, Design, and Preliminary Findings From the Moral Injury Outcome Scale Consortium.** *Journal of Traumatic Stress*, 33, 3, 364-372.

King, L., Ketcheson, F., St. Cyr, K., Marlborough, M., Richardson, J.D. (2019). **Factor structure of deployment experiences and relations to mental health disorders among treatment-seeking Canadian armed forces personnel and veterans.** *Psychological Trauma*. doi: 10.1037/tra0000493.

Paul, M. A., Love, R. J., Jetly, R., Richardson, D. J., Lanius, R. A., Miller, J. C., ... & Rhind, S. G. (2019). **Compromised sleep and blunted nocturnal salivary melatonin secretion profiles in military-related posttraumatic stress disorder.** *Frontiers in Psychiatry*, 10, 882.

Davis, B.D., Sedig, K., Lizotte, D.J. (2019). **Archetype-Based Modeling and Search of Social Media.** *Big Data Cogn. Comput.* 2019, 3, 44.

Books, Chapters, Editing

Richardson J. D., Smith, W.L., St. Cyr, K., Marlborough, M. (2018). **Posttraumatic Stress Disorder.** In: Volkmar F. (eds) *Encyclopedia of Autism Spectrum Disorders*. Springer, New York, NY.

Abstracts

Rehman, Y., Sadeghirad, B., Guyatt, G.H., McKinnon, M.C., McCabe, R.E., Lanius, R.A., Richardson, D.J., Couban, R., Sousa-Dias, H., Busse, J.W. (2019). **Management of post-traumatic stress disorder: A protocol for a multiple treatment comparison meta-analysis of randomized controlled trials.** *Medicine*, 39, e17064.

Boland, H., D'Agata, M., Granek, J., Nazarov, A. **A Reward-based Approach to Improve Workplace Well-being Awareness and Behaviours.** (October, 2019) Poster presented at the CIMVHR Forum 2019, Gatineau-Ottawa, QC.

Boland, H., D'Agata, M., Granek, J., Nazarov, A., Jaz, A. (2019). **A Reward-Based Approach to Improve Workplace Well-Being Awareness and Behaviours.** Paper presented at NATO-HFM-302 Symposium, Berlin, Germany. Unclassified.

Granek, J., Nazarov, A., D'Agata, M., Bae, J., Boland, H., Kirolos, R., Guest, K., Bailey, S. (2019). **Leveraging Technologies to Complement the Road to Mental Readiness (R2MR) Training Program.** Paper presented at NATO-HFM-302 Symposium, Berlin, Germany. Unclassified.

Granek, J., Nazarov, A., Fraser, B., Boland, H. **Optimizing Mental Health and Resilience by Leveraging Technology in Training for Canadian Armed Forces Personnel.** (October, 2019) Poster presented at the CIMVHR Forum 2019, Gatineau-Ottawa, QC.

Hunt, R., Forchuk, C., Cramm, H., Nazarov, A., Forchuk, C., St. Cyr, K., Ketcheson, F., Deda, E., Davis, B., Richardson, J.D. **Understanding Functional Quality of Life in Veterans Diagnosed with Post Traumatic Stress Disorder in Recovery.** (October, 2019). Podium Presentation. CIMVHR Forum 2019, Gatineau-Ottawa, QC.

Ketcheson, F., St Cyr, K., King, L., Richardson, JD.
Association between PTSD and MDD and severity of somatic symptoms in treatment-seeking Veterans. (October, 2019). Poster presented at CIMVHR Forum 2019, Gatineau-Ottawa, QC.

Oakley, T., King, L., Ketcheson, F., Richardson, JD. **Gender differences in clinical presentation among treatment-seeking veterans and Canadian Armed Forces (CAF) personnel.** (October, 2019) Podium Presentation CIMVHR Forum 2019, Gatineau-Ottawa, QC.

Oakley, T., King, L., Ketcheson, F., Richardson, JD. **The relationship between deployment, gender and mental health in treatment-seeking veterans.** (October, 2019) Poster presented at CIMVHR Forum 2019, Gatineau-Ottawa, QC.

Richardson, JD., Hunt, R., Nazarov, A., Davis, B., St. Cyr, K., King, L. **Suicidal Ideation in Treatment-seeking Canadian Armed Forces Veterans: The use of advanced analytics.** (October, 2019). Podium Presentation. CIMVHR Forum 2019, Gatineau-Ottawa, QC.

Richardson, JD., Ketcheson, F., King, L., Forchuk, C., Hunt, R., St. Cyr, K., Nazarov, A., Schneider, P., McIntyre-Smith, A., Elhai J. D. **Sexual Dysfunction in Male Treatment-Seeking Canadian Armed Forces Members and Veterans.** (April, 2019) Poster presented at London Health Research Day, London, ON.

Richardson, JD., Nazarov, A., Hunt, R., Forchuk, C.
Predictors of Recovery from Military-related Post-traumatic Stress Disorder in Treatment-seeking Veterans. (October, 2019). Podium Presentation. CIMVHR Forum 2019, Gatineau-Ottawa, QC.

Richardson, JD., Nazarov, A., Hunt, R., Forchuk, C., King, L., St. Cyr, K. **Predictors of Recovery from Military-related Post-traumatic Stress Disorder in Treatment-seeking Veterans.** (November, 2019) Poster presented at the ISTSS Annual Meeting 2019, Boston, MA.

Richardson, JD., Nazarov, A., St. Cyr, K., Ketcheson, F., King, L., Hunt, R., Forchuk, C., Elhai, J. **PTSD and Associated Risk factors in Treatment-seeking Veterans & Canadian Armed Forces Veterans.** (September, 2019). Podium Presentation. Canadian Psychiatric Association, Quebec City, QC.

Celebrating Success. Awards



2019

Dr. J Don Richardson was recognized by the Lawson Health Research Institute for his research innovations related to veterans with PTSD. Dr. Richardson was awarded the Innovation Award at the 2019 Lawson Impact Awards.

Dr. Anthony Nazarov was awarded The Robert S. & Mary Gay, Donald, James and Helen (Taylor) Gay Endowed Research Fellowship in Veteran's Care. This fellowship will support Dr. Nazarov's research on patients' attitudes towards disclosure of moral injury.

Katherine St. Cyr was awarded the CIHR Frederick Banting and Charles Best Canada Graduate Scholarships Doctoral Award. This award provides special recognition and support to students who are pursuing a doctoral degree in a health-related field in Canada.

2018

Dr. Anthony Nazarov - Canadian Institute of Military and Veteran Health Research, Editors' Choice Award (Poster, Co-author) for the abstract *The Relation between Adverse Childhood Experiences and Moral Injury in the Canadian Armed Forces with PTSD*.

Board of Advisors

The Inaugural meeting of the MacDonald Franklin OSI Research Centre Advisory Council was held on June 3, 2019, at Parkwood Institute in London, ON. The Council meets semi-annually. Functions of the advisory council include, but are not limited to:

- Providing insight into research projects and recommending future topics for research or pilot studies (“think tank”)
- Identifying opportunities for new partnerships (academic, industry, government, patient groups) and facilitating new partnerships to further catalyze the research and knowledge translation objectives
- Identifying trends in current issues related to Veteran mental health
- Identifying and recommending other experts and Veteran health advocates for Advisory Council membership who can further facilitate the objectives of the Centre
- Promoting the capabilities, capacities, and research output by Centre to expand external awareness and visibility
- Organizing and providing research workshops or other educational opportunities
- Meeting semi-annually

Advisory council membership was carefully selected to have broad representation across the following stakeholders/groups:

- OSI Clinic frontline staff
- Academia
- Canadian Institute for Military and Veteran Health Research
- CAF Veterans
- Veteran Patient Community
- Veteran Affairs Canada
- Department of National Defence
- Defence Research & Development Canada
- Military/Veteran Families
- Community leader

Current Members



Ken Balderson, MD, CM, FRCPC

*Psychiatrist, St. Joseph's OSI Clinic, Greater Toronto Site
Assistant Professor, Department of Psychiatry, University of Toronto
Adjunct Professor, Department of Psychiatry, Western University*

Dr. Ken Balderson is a psychiatrist working full-time at the GTA Site of St. Joseph's OSI Clinic, where he has worked since January 2018. Previously he worked at St. Michael's Hospital with an acute care focus, and was part of the leadership team in the Department of Psychiatry. He also has extensive experience in psychiatric outreach. His research involvement has included a role as co-investigator of studies exploring the risk of suicide after hospital discharge and looking at the impact of SARS on health care personnel.

Current Members (continued)



Marco Di Cola

Director, Harbour Grace Holdings Inc

With a passion for business, politics and history Marco is graduate of the University of Western Ontario and holds an Honours B.A. As someone who thrives on challenges, Marco has welcomed several career changes over the past 25 years that have pushed him outside of his comfort zone and challenged him to reinvent himself. Marco began his career in the banking sector and held multiple Sales and Service roles for Canada Trust and later TD Canada Trust (TSX:TD), where he was recognized with Top Performance awards. While working with TD Canada Trust, he coached and mentored dozens of professionals who have gone on to lead outstanding careers and have reached executive level positions. Marco's outstanding track record in banking opened the door in the mid-2000's to an exciting career in the technology industry. He enthusiastically accepted the challenge of working for Phoenix-Interactive Design Inc., a progressive software company in London, Ontario who was making a big push on a global scale in self-service software solutions for the banking industry. A few years after accepting a role as Sales & Account Manager for some of the world's leading banks, he was promoted to Vice President, Global Software Business Development. At Phoenix, who was later acquired by Diebold Nixdorf (NYSE: DBD), Marco was responsible for acquiring some of their largest bank clients and was recognized with Outstanding Achievement Awards. A few years after his mentor Kyle MacDonald sold Phoenix to Diebold Nixdorf, he accepted his greatest and most fulfilling challenge yet in her newest endeavour, Harbour Grace Holdings Inc. As Director of Programs & Partnerships, Marco works with the executive management team and has multiple responsibilities including IT services, charter yacht sales management, and pursuing the philanthropic goals of the corporation's owners which includes building partnerships with leading charitable organizations such as the David Foster Foundation, the St. Joseph's Foundation and academic institutions such as IVEY Business School.



LCol (Retd) Stéphane Grenier

Mental Health Innovator

When it comes to mental health, Stéphane Grenier walks the talk. He was recently appointed to the Order of Canada and awarded an honorary Doctor of Laws degree by the University of Guelph and Humber College for his contributions to the field of workplace mental health. Stéphane's riveting keynotes are not only thought-provoking, but also lead to tangible action and sustainable change for those leaders who are prepared to rethink how they support their people. His autobiography, *After the War: Surviving PTSD and Changing Mental Health Culture*, tells his story from the day he landed in the midst of the Rwandan genocide, through his journey of changing mental health culture in the Canadian military, developing national Guidelines for Peer Support with the Mental Health Commission of Canada, all the way to creating Mental Health Innovations (MHI); a consultancy that leads innovative and sustainable change in organizations to enhance the mental health of their people. Today, he and his business partners develop non-clinical mental health interventions as a complement to traditional clinical care for private and public sector organizations, as well as for provincial health care systems. Stéphane's vision is a world where people no longer face barriers to good mental health.



LCol (Retd) Alexandra Heber, MD, FRCPC, CCPE

Chief Psychiatrist, Veterans Affairs Canada

She has over 30 years' experience in Mental Health, first as a nurse, then as a psychiatrist. After a decade in Toronto coordinating the Women's Program in the Clinic for HIV-Related Concerns at Mount Sinai Hospital, and working on an Assertive Community Treatment Team, Dr. Heber started working as a civilian psychiatrist for the Canadian Forces in 2003, then enrolled in the military in 2006. She deployed to Afghanistan as the Psychiatrist in Charge of the Canadian Forces Mental Health Services for Task Force Afghanistan in 2009. After retiring from the military, she accepted the position of inaugural Chief of Psychiatry for Veterans Affairs Canada, where she became the VAC lead author on the 2017 CAF-VAC Joint Suicide Prevention Strategy. She has published and presented nationally and internationally on PTSD in the military and veteran population, and has designed two online courses on PTSD for health care professionals. Her current research interests include: suicide prevention, the military-civilian transition experience, effects of cannabis on mental health, outcome measurement in mental health treatment, and the effects of military sexual trauma.

Current Members (continued)



Col Rakesh Jetly, MD

Chief Psychiatrist, Canadian Armed Forces

Dr. Rakesh Jetly is the chief psychiatrist for the Canadian Armed Forces. He occupies various roles such as mental health advisor to the surgeon general and academic appointments at Dalhousie University (Halifax) and Ottawa. In addition, he has been selected the inaugural chair in military mental health at the IMHR (Institute for Mental Health Research). He began his military career as a general duty medical officer and flight surgeon and deployed to the middle east and Rwanda. After his post graduate training at the University of Toronto in psychiatry he deployed twice to Kandahar, Afghanistan. Col Jetly has an interest in operational mental health with a focus on PTSD and has worked within Canada and with allies (NATO) to advance the field. Occupational and workplace mental health are also specific areas of interest. Research and academic interests are varied and include suicide prevention, nabilone as a treatment for PTSD-related nightmares, neurofeedback and pharmacogenomics. Current international collaborations include a lecture series on Morality and Mental Health as well as chairing Research Task Groups (RTG) Leveraging Technology in Mental Health and Personalized Medicine. An imminent study is one looking at the safety and efficacy of Cannabis in the treatment of PTSD.

Maj Gen (Retd) Glynne Hines

Former Director of Consultation, Command and Control, NATO, Brussels

OSI Special Section of the Royal Canadian Legion

Veteran co-chairman of the Minister of Veterans Affairs Mental Health Advisory Group



Lisa King, MA

Program Evaluation and Research Officer, St. Joseph's OSI Clinic, Parkwood Institute

Lisa King has worked at St. Joseph's OSI Clinic at Parkwood Institute as a Program Evaluation and Research Officer since 2014. She holds a B.A in Psychology and a M.Sc. in Neuroscience from the University of Western Ontario. Her current research investigates how factors such as deployment experiences and somatic symptoms are associated with mental health conditions like PTSD, depression, and suicidal ideations among military personnel and veterans.



Laryssa Lamrock

Family Peer Support Coordinator, Operational Stress Injury Social Support (OSISS) Program

Laryssa Lamrock has been a Family Peer Support Coordinator with OSISS since 2008; an organization that provides peer support for members and families that live with OSIs such as anxiety, PTSD and depression. She has had numerous speaking engagements involving mental health awareness specific to OSIs, the OSISS program and her personal experiences. A few of the most noteworthy have been the 4th US/Canada Forum on Mental Health and Productivity, an appearance before the House of Commons Standing Committee on Veterans Affairs and the Healing the Family Forum at the Canadian Embassy in Washington D.C. She has also participated on a number of Committees including the National DND-VAC-RCMP Mental Health Advisory Committee and the National Operational Stress Injury Family Ad Hoc working group. Laryssa strongly believes in the importance of education and support for family members supporting a military member or veteran with OSI. She collaborated with Parkwood OSI clinic to develop a workshop series for family members which will soon facilitate its 4th serial. Along with her professional experiences, Laryssa is truly a military family member as she is the daughter, spouse and mother of formerly or currently serving Canadian Armed Forces members. She is very passionate about supporting those she works with as she has personal experiences in supporting a loved one with an Operational Stress Injury as well as her own journey with depression.



Ruth Lanius, MD, PhD

Professor, Western University

Harris-Woodman Chair in Mind-Body Medicine, Western University

Ruth Lanius, MD, PhD, Professor of Psychiatry is the director of the posttraumatic stress disorder (PTSD) research unit at the University of Western Ontario. She established the Traumatic Stress Service and the Traumatic Stress Service Workplace Program, services that specialized in the treatment and research of Posttraumatic Stress Disorder (PTSD) and related comorbid disorders. She currently holds the Harris-Woodman Chair in Mind-Body Medicine at the Schulich School of Medicine & Dentistry at the University of Western Ontario. Her research interests focus on studying the neurobiology of PTSD and treatment outcome research examining various pharmacological and psychotherapeutic methods. She has authored more than 150 published papers and chapters in the field of traumatic stress and is currently funded by several federal funding agencies. She regularly lectures on the topic of PTSD nationally and internationally. She has recently published a book 'Healing the traumatized self: consciousness, neuroscience, treatment' with Paul Frewen.

Current Members (continued)



Polliann Maher

Family Peer Support Coordinator, Operational Stress Injury Social Support (OSISS) Program

Polliann Maher is a Family Peer Support Coordinator with OSISS. She started volunteering with the program in 2009 and was employed with the program since 2011. Polliann took part in the Vocational Rehabilitation program through Veteran affairs in 2009 and went back to school to successfully complete her Community Service worker diploma. She has been part of the development and facilitation of the Psycho-education workshops for Family members in collaboration with the OSI Clinic at Parkwood Hospital. The research from these workshops was presented in a poster presentation at CIMVHR in 2018 in collaboration with the staff from the OSI clinic. Polliann is passionate about promoting Mental Well-being within the Military and Veteran community and was part of the Military Family Resource Centre Board of Directors for 6 years. Polliann is the spouse of a retired veteran that was has been diagnosed with PTSD since 1999, mother to two adult sons and brings several years of lived experience as a caregiver, spouse, mother and peer support coordinator.



Michelle Marlborough, MD, FRCPC

*Psychiatrist, St. Joseph's OSI Clinic, Parkwood Institute
Assistant Professor, Department of Psychiatry, Western University*

Dr. Michelle Marlborough is a practicing psychiatrist at the Operational Stress Injury Clinic at St. Joseph's Health Care London, and is an Assistant Professor in the Department of Psychiatry at Western University. She received her medical degree from McMaster University in 2011 and completed psychiatry residency training at the University of Toronto. Her clinical interests include the treatment of active military members, veterans, and first responders. Additional interests include the psychiatric treatment and support of physicians, medical education, and disaster management. She is the Psychotherapy Portfolio Lead for the psychiatry residency program at Western.



Margaret McKinnon, PhD, CPsych

*Associate Chair of Research, Psychiatry and Behavioural Neurosciences, McMaster University
Associate Professor, McMaster University
Senior Scientist, Homewood Research Institute*

Dr. Margaret McKinnon is a clinician-scientist who serves as the Homewood Chair in Mental Health and Trauma in the Department of Psychiatry and Behavioural Neurosciences at McMaster University. Work in Dr. McKinnon's laboratory focuses on identifying the neural and behavioural correlates of PTSD and trauma-related illnesses and on translating this knowledge to the development and testing of novel treatment interventions aimed at reducing the cognitive and affective sequelae of these conditions. Dr. McKinnon has a special interest in military, veteran and first responder populations, and has worked with these groups clinically and in her research program.



Candice M. Monson, PhD

*Professor, Ryerson University
Director of Clinical Training at Ryerson University*

Candice M. Monson, Ph.D., is a Professor of Psychology and Director of Clinical Training at Ryerson University in Toronto, ON. Dr. Monson is one of the foremost experts on traumatic stress and the use of individual and conjoint therapies to treat PTSD. She has published extensively on the development, evaluation, and dissemination of PTSD treatments more generally. She has been funded by the U.S. Department of Veterans' Affairs, U.S. National Institute of Mental Health, U.S. Centers for Disease Control and Prevention, U.S. Department of Defense, and the Canadian Institutes of Health for her research on interpersonal factors in traumatization and individual- and conjoint-based interventions for PTSD. Recognizing her distinguished contributions as a clinical psychologist and educator, she is a Fellow of both the American and Canadian Psychological Associations, a Beck Institute Scholar, received the Canadian Psychological Association Trauma Psychologist of the Year Award in 2013, was named the Outstanding Mentor by the International Society of Traumatic Stress Studies in 2014, and was inducted into the Royal Society of Canada in 2016. She has co-authored 7 books, including Cognitive Processing Therapy: A Comprehensive Manual and Cognitive-Behavioral Conjoint Therapy for PTSD, and has published over 100 peer-reviewed publications. Dr. Monson is well-known for her efforts in training clinicians in evidence-based assessments and interventions for PTSD.

Current Members (continued)



LCdr (Retd) Ken Osborne

*Director, Licensing and Accreditation, Law Society of Ontario
Commissioner, Ontario Soldier's Aid Commission*

Kenneth Osborne served in the Canadian Forces for 24 years. Enrolling initially as a Training Development Officer, he was selected for the Military Legal Training Program in 1999. Attending Queen's University, Faculty of Law, Mr. Osborne articulated with the firms Cassels, Brock and Blackwell and Greenspan, White in Toronto. He was called to the Bar in Ontario in 2004. As a lawyer with the Office of the Judge Advocate General, his key posts included roles with NATO, the Canadian Forces Legal Advisor, the Strategic Joint Staff, and as a Deputy Judge Advocate at various bases across Canada. He is a veteran of peacekeeping operations in Bosnia-Herzegovina and combat operations in Afghanistan. Deploying to Afghanistan on two occasions, he served as the lawyer to Canada's Special Operations Task Force, and subsequently deployed as a legal mentor in a rule of law capacity with the US Forces. For service as a legal mentor in Afghanistan, and notably in regard to his dedication in supporting rule of law capacity initiatives at the Dawood National Military Hospital in Kabul in 2010, he was awarded the United States Meritorious Service Medal. Released from the Canadian Forces in 2016, he is employed with the Law Society of Ontario as the Director, Licensing and Accreditation, responsible for the licensing and accreditation activities that support the legal professions in Ontario. In 2017, Mr. Osborne was appointed by the Lieutenant Governor of Ontario as a Commissioner in the province's Soldiers' Aid Commission. Mr. Osborne resides in Stoney Creek, Ontario with his spouse of 28 years, Alison.



David Pedlar, PhD

Scientific Director, Canadian Institute for Military and Veteran Health Research (CIMVHR)

Dr. David Pedlar is the scientific director of the Canadian Institute of Military and Veteran Health Research and professor in the School of Rehabilitation Therapy at Queens University. He has dedicated his career to advancing the care and well being of Canadian Armed Forces (CAF) Veterans. After working as a clinician, he spent fifteen years as the national director of research for Veterans Affairs Canada. He has held the positions of adjunct professor at the Faculty of Nursing at the University of Prince Edward Island and the Faculty of Medicine at Dalhousie University. In 2015, he received his second Fulbright Scholar Award as the visiting research chair in military social work at the University of Southern California where he continues as an international affiliated faculty at the Center for Innovation and Research on Veterans & Military Families. For his work in military and Veteran health, Dr. Pedlar has received a number of honours and awards. His research interests include improving military to civilian transition and enhancing Veteran well-being in the life after military service.



Shawn Rhind, PhD

*Defence Scientist, Defence Research and Development Canada (DRDC)
Associate Professor, University of Toronto*

Dr. Shawn Rhind earned his doctorate in Immunobiology from the University of Toronto. He completed an NSERC Postdoctoral Fellowship with the Defence & Civil Institute of Environmental Medicine (DCIEM) and US Army Research Institute of Environmental Medicine (USARIEM), examining biomolecular interactions between neuro-endocrine-immune systems under severe physiological stress and environmental extremes and their impact on health and performance. Today, Dr. Rhind is a senior Defense Scientist in the military Operational Health Group at DRDC Toronto and an Associate Professor at the University of Toronto, where he leads an integrative – molecular to systemic – translational research team. His research spans basic laboratory science to human clinical trials, and is currently focused on elucidating the biological basis and therapeutic interventions for combat-related psychological and physical trauma, including PTSD and battlefield care after traumatic shock and brain injury.



Maya Roth, CPsych

*Psychologist, St. Joseph's OSI Clinic, Greater Toronto Site
Associate Member of the Yeates School of Graduate Studies, Ryerson University
Associate Scientist, Lawson Health Research Institute*

Dr. Maya Roth is a Clinical Psychologist at the St. Joseph's Operational Stress Injury Clinic – Greater Toronto Site, and an Associate Member of the Yeates School of Graduate Studies at Ryerson University. She is also an Associate Scientist with the Lawson Health Research Institute. Dr. Roth is a passionate advocate for evidence-based treatment of military and veteran PTSD. She has presented and published in this area, and has also provided evidence-based treatment for PTSD workshops to clinicians.

Current Members (continued)



Patrick Smith, PhD

CEO, Centre of Excellence on Post-Traumatic Stress Disorder and Related Mental Health Conditions

Dr. Patrick Smith began his tenure as CMHA's National CEO in April 2016. With a PhD in Clinical Psychology, he came to CMHA from Renascent – one of Canada's leading providers of abstinence-based, residential addictions treatment – where he was also CEO. Dr. Patrick Smith is the CEO for the Centre of Excellence on Post-Traumatic Stress Disorder and Related Mental Health Conditions in Ottawa, Canada. As its first CEO, Dr. Smith provides strategic leadership in the establishment and growth of the Centre of Excellence. Prior to joining the Centre of Excellence, Dr. Patrick Smith was the National CEO of the Canadian Mental Health Association (CMHA). With a PhD in Clinical Psychology, he came to CMHA from Renascent – one of Canada's leading providers of abstinence-based, residential addictions treatment – where he was also CEO. Prior to this, he was the Vice President, Research, Networks and Academic Development at the BC Mental Health and Addictions Services of the Provincial Health Services Authority in British Columbia from 2005 to 2010, and was founding Head of UBC's Addiction Psychiatry Program. From 1997 to 2005, Patrick was the Vice President of Clinical Programs at the Centre for Addiction and Mental Health (CAMH), and was Head of the Addiction Psychiatry Division at the University of Toronto. He received his PhD in 1991 from the University of Nebraska and did his internship and NIDA (National Institute on Drug Abuse) postdoctoral fellowship at the Yale University School of Medicine from 1990-1992. He was also a Fulbright Scholar at the University of Canterbury in Christchurch, New Zealand. In addition to his clinical and research background, Patrick's primary focus for much of his work has been mental health and addictions recovery and health systems planning and development. As a founding member of the Canadian Executive Council on Addictions, Patrick represented Canada as a delegate to the United Nations Committee on Narcotic Drugs (UN-CND) in both 2004 and 2009 and co-chaired the development of Canada's National Addictions Treatment Strategy.



Sgt (Retd) Edith St-Jean, CD

Coordinator, Operational Stress Injury Social Support (OSISS) Program

Sergeant St-Jean enrolled in the Canadian Armed Forces on 4 Dec 1983 as a mobile support Operator and posted to North Bay, Ontario. She later released in September 1991 while in Cold Lake, Alberta. In 1996 she joined the Air Reserve in Comox, BC as a clerk and later transferred to 746 Communication Squadron in Calgary, AB. In 2000, she transferred back to the Regular Forces as a Medical Technician and was posted to 1 Field ambulance Edmonton, AB. In 2003, she specialized in Preventive Medicine where she served in Borden, ON and Winnipeg, MB. Edith was deployed to Afghanistan in 2008 and 2013. After more than 27 years of service to the Canadian Armed Forces and Royal Canadian Medical Service, Edith retired on 15 January 2017. Edith started as a recreational golfer then applied herself more seriously to the sport and has won several Military Golf Regionals. She also participated at the National level. She is now back to a recreational golfer while trying to maintain a healthy lifestyle. Edith now works for the Department of National Defence as the Operational Stress Injury Social Support coordinator by connecting people with an OSI to effective resources, help to set goals by providing leadership, firsthand experience and practical knowledge of what life is like with an OSI. Edith lives in St. Thomas, Ontario with her new puppy Merlin.

Former Members

Christine Basnett, MSW, RSW

Clinical Social Worker, St. Joseph's OSI Clinic, Parkwood Institute

Jason Carr, PhD

Psychologist, St. Joseph's OSI Clinic, Parkwood Institute

Credits

"Technology background with circular mesh" - Freepik.com



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