

40th Annual Scientific Meeting

On-Site
Program

2019

April 2 - April 5
Toronto, Ontario

Sheraton Centre
Toronto



the CANADIAN PAIN SOCIETY
la SOCIÉTÉ CANADIENNE de la DOULEUR

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 @CanadianPain

#CanadianPain19

2019

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General Information

Annual Awards and Gala Reception

Join us to celebrate your colleagues at the 2019 Awards Gala Reception and Dinner! Forgot to buy your ticket? No problem! Come to the registration desk where a limited number are available for purchase until 4:00pm on Wednesday April 3. Seating is first come first served. The 2019 Awards program recipients will be announced during dinner with entertainment to follow.

#CanadianPain19

Follow the Scientific Meeting on Twitter! Follow the hashtag #CanadianPain19

Poster Competition

Judging of the six poster finalists for the 1st Place Clinical, 1st Place Basic and 3rd Place Overall will take place Wednesday, April 3rd during the 3:00 - 4:00pm time slot. Award recipients will be announced at the Awards Gala on Thursday April 4th, 2019.

Certificates of Attendance

Certificates of attendance will be accessible to attendees on the CPS website from June 1st, 2019. An email will be sent to all attendees, after the Scientific Meeting, will full instructions for downloading.

Canadian Journal of Pain

The Canadian Pain Society's (CPS) journal, The Canadian Journal of Pain/Revue Canadienne de la douleur, is an Open Access, international, peer reviewed journal publishing high-quality, original research. Please visit the CPS website for information about opting into journal communications, article publishing charges, aims and scope about its focus and peer-review policy and more.

SIG Meetings

Interprofessional Pain Management SIG's Pre-Meeting Workshop

Tuesday April 2nd 2019

1:00pm - 5:00pm

Interventional Pain & Neuropathic Pain SIG Combined Meeting

Thursday April 4th 2019

07.30 - 08.00

Sheraton A

Save the Date

Join us May 19 - 22, 2020 in Calgary at the Hyatt Regency for the 41st Annual Scientific Meeting!

Learning Objectives

Goals

1. This meeting will focus on the assessment and treatment of pain syndromes in adults and children. Topics will include pharmacological, psychological, physiotherapy, procedural, and complementary medicine therapies for management of pain with emphasis placed on audience participation.
2. Basic scientists, clinicians, epidemiologists, and other health care professionals working in the research and treatment of pain will enhance their knowledge and skills by attending this meeting.

Objectives

1. Prevent, assess, diagnose and treat pain informed by the latest advances in basic and clinical pain science
2. Assess and evaluate the public health challenges of pain at a population level and develop strategies to address them
3. Build skills and make connections to further investigate and disseminate knowledge about pain

Scientific Meeting Evaluations

All session evaluations will be available at the registration desk each day. Kindly take 2-3 minutes to complete the evaluations, as they are an accreditation requirement.

CPD Credits

College of Family Physicians of Canada - Mainpro+: a CERT+ ID# 189615-002

This one-credit-per-hour Group Learning program meets the certification criteria of the College of Family Physicians of Canada and has been certified by Continuing Professional Development, Faculty of Medicine, University of Toronto for up to 15 Mainpro+ credits.

Royal College of Physicians and Surgeons of Canada - Section 1

This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada, approved by Continuing Professional Development, Faculty of Medicine, University of Toronto. You may claim a maximum of 15 hours.

Patients Included

The 40th Annual Scientific Meeting (ASM) of the Canadian Pain Society (CPS) is a Patients Included Meeting.

The Patients Included conference charter provides organizations like CPS with a means of demonstrating that their events are committed to incorporating the experience of patients as experts in living with their condition.

More information about Patients Included can be found on their website patientsincluded.org.



Canadian Pain Society's 40th Annual Scientific Meeting

Tuesday, April 2nd: Pre-Meeting

- 16.00 - 18.30 Registration
- 13.00 - 17.00 Interprofessional Pain Management SIG's Workshop: "How to navigate difficult conversations about pain: Interprofessional perspectives, strategies and skills for daily practice": Pre-registration required
- 18.30 - 21.00 Welcome Reception – *Grand Ballroom Centre/West*

Wednesday, April 3rd: Day 1

- 07.00 - 08.00 Registration and Breakfast
- 07.30 - 08.00 Special Session: Co-producing the future of pediatric chronic pain research in Canada – *Sheraton A*
- 08.00 - 08.30 Opening Remarks, Fiona Campbell & Tuan Trang; History of CPS, Barry Sessle – *Plenary Room*
- 08:30 - 08.45 Address by the Hon. Ginette Petitpas Taylor, PC, MP, Minister of Health – *Plenary Room*
- 08.45 - 09.30 Mary Ellen Jeans Keynote, Lars Arendt-Nielsen, Dr. Med., PhD – *Plenary Room*
- 09.30 - 09.45 Poster Pitches – *Plenary Room*
- 09.45 - 10.30 Morning Break | Posters
- 10.30 - 12.00 Wednesday Morning Breakout Sessions – *Sheraton A, B, C & E*
- 12.00 - 13.30 Lunch | Special Session (Sponsored) – *Plenary Room*
- 12.00 - 13.30 Trainee Workshop: Finding Your Way: A Career Survival Guide for Pain Trainees – *Sheraton A*
- 13.30 - 14.15 Plenary Session, Beverly Thorn, PhD, ABPP – *Plenary Room*
- 14.30 - 16.00 Wednesday Afternoon Breakout Sessions – *Sheraton A, B, C & E*
- 16.00 - 17.00 Afternoon Break | Posters
- 17:00 - 18.30 Wednesday Late-afternoon Breakouts – *Sheraton A, B, C & E*
- 19.00 - 22.00 Trainee Social – *off-site at The Ballroom*

Thursday, April 4th: Day 2

- 07.00 - 08.00 Breakfast and Poster Setup
- 07.30 - 08.00 Interventional Pain & Neuropathic Pain SIG Combined Meeting – *Sheraton A*
- 08.00 - 08.30 CPS's Annual General Meeting: A chance to have your say! – *Plenary Room*
- 08.30 - 08.45 Opening Remarks – *Plenary Room*
- 08.45 - 09.30 Plenary Session: Brigitte Kieffer, PhD – *Plenary Room*
- 09.30 - 10.30 Morning Break | Posters | Poster Judging
- 10.30 - 12.00 Thursday Morning Breakout Sessions – *Sheraton A, B, C & E*
- 12.00 - 13.30 Women in Learning & Leadership Lunch – *Plenary Room*
- 12.00 - 13.30 Lunch | Posters
- 13.30 - 15.00 Thursday Afternoon Breakout Sessions – *Sheraton A, B, C & E*
- 15.00 - 16.00 Afternoon Break | Posters
- 15.30 - 16.00 Special Session: Introducing...Solutions for Kids in Pain – *Sheraton A*
- 16.00 - 17.30 Hot Topics | Thursday Late Afternoon Sessions – *Sheraton A, B, C & E*
- 18.30 - 23.00 18.30 Reception | 19.30 Awards Gala and Dancing! – *Plenary Room*

Friday, April 5th: Day 3

- 08.00 - 09.15 Breakfast
- 09.15 - 09.30 Opening Remarks – *Plenary Room*
- 09.30 - 10.00 Distinguished Career Award Keynote – *Plenary Room*
- 10.00 - 10.30 Early Career Award Keynote – *Plenary Room*
- 10.30 - 11.00 Morning Coffee Break
- 11.00 - 12.30 Friday Breakout Sessions – *Sheraton A, B, C & E*

Note: Session times and locations subject to change.

Canadian Pain Society's 40th Annual Scientific Meeting

Tuesday, April 2, 2019

16.00 - 18.30 Registration

13.00 - 17.00 Interprofessional Pain Management SIG's Pre-Meeting Workshop: **Pre-registration required**

“How to navigate difficult conversations about pain: Interprofessional perspectives, strategies and skills for daily practice”

Join us for a Pre-Conference Workshop hosted by the newly formed Interprofessional Pain Management SIG. The Interprofessional Pain Management SIG strives to support evidence-based care from a biopsychosocial and interprofessional perspective. As an extension of the Interprofessional Pain Management SIG, this workshop will focus on providing attendees with new knowledge and applied skills related to navigating difficult conversations about pain from an interprofessional perspective. The overarching purpose of this workshop is to bring together a diverse group of professionals with an interest in pain to engage in a day of interprofessional learning and networking. We hope to see you there!

Speakers: **Timothy H. Wideman**, PT, PhD, Assistant Professor, School of Physical and Occupational Therapy, McGill University
Judy Watt-Watson, RN, PhD, Professor Emeritus, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto
Rebecca McDermott, C.Psych, PhD, Clinical Psychologist, Chronic Pain Clinic, Kingston Health Sciences Centre
Stephen Henry, MD, MSc, General Internist and Associate Professor, University of California Davis

NOTE: Pre-registration required.

18.30 - 21.00 Welcome Reception: *Grand Ballroom Centre/West*

Wednesday, April 3rd, 2019

07.00 - 08.00 **Registration and Breakfast**

07.30 - 08.00 **Co-producing the future of pediatric chronic pain research in Canada**

Sheraton A

Speakers: **Katie Birnie**, PhD RPsych, Alberta Children's Hospital
Jennifer Stinson, RN-EC, PhD, CPNP , University of Toronto and The Hospital for Sick Children

Session Description

This session will be led by Partnering for Pain project co-leads Dr. Katie Birnie and Dr. Jennifer Stinson; and co-facilitated by patient and parent partners.

Over the past year, the #PartneringForPain project engaged Canadians from across the country to identify the Top 10 research priorities in pediatric chronic pain from the perspective of people with lived experience (patients), family members, and clinicians. It's now time to move these priorities into action! This interactive session is for all comers interested in pediatric chronic pain (researchers, patients, family members, clinicians, policymakers, funders, etc.). We will collaboratively discuss the Top 10 identified patient-oriented research priorities and brainstorm effective strategies to move this research agenda forward. Your voice matters.

08.00 - 08.30 **Opening Remarks, Fiona Cambell & Tuan Trang; History of CPS, Barry Sessle**

Plenary Room

08.30 - 08.45 **Address by the Hon. Ginette Petitpas Taylor, PC, MP, Minister of Health**

Plenary Room

Elected in October 2015, Ms. Petitpas Taylor is the Member of Parliament for Moncton–Riverview–Dieppe, New Brunswick.

08.45 - 09.30 **Mary Ellen Jeans Keynote: Clinical manifestations and sensitization across chronic musculoskeletal disorders and the impact on management**

Plenary Room

Keynote speaker: Lars Arendt-Nielsen, Dr. Med., PhD, Founder & Director, Center for Sensory-Motor Interaction (SMI); Professor, Department of Health Science and Technology, School of Medicine, Aalborg University, Denmark

09.30 - 09.45 **Poster Pitches**

Plenary Room

09.45 - 10.30 **Coffee Break | Posters**

Plenary Room

10.30 - 12.00 **Wednesday Morning Breakout Sessions**

Plenary Room

Session 1 **Cognitive modulation of pain: An innovative multidisciplinary, multi-species approach**

Sheraton A

Chair: **Loren Martin**, PhD, Assistant Professor, Dept of Psychology, University of Toronto
Speakers: **Mathieu Roy**, PhD, Assistant Professor, Dept of Psychology, McGill University
Zoha Deldar, PhD candidate, Université de Montréal/ Université du Québec à Trois-Rivières, Anatomy
Loren Martin, PhD, Assistant Professor, University of Toronto

Note: Session times and locations subject to change.

Symposium Abstract

Cognitive factors are known to facilitate or inhibit pain perception. Salient painful stimuli involuntarily direct our attention to the source of the pain, resulting in increased pain, while pain memories can transition pain from an acute to a chronic state. Contrary to this, engaging in a cognitively demanding task reduces pain. The mechanisms underlying this trade-off interaction and its effect on pain modulation are less clear. This symposium will be focused on a multimethod approach to understand the bidirectional relationship between pain and cognition following three research lines:

- 1) We will examine the interaction between pain, cognition and motivation regarding the role of reward in performing a cognitive task, cognitive effort and resource allocation on pain perception. The value of a reward modulates the amount of cognitive effort and resources allocated to specific tasks, which in turn modulates pain perception.
- 2) Discuss the effect of neuromodulation on cognition and pain inhibition in healthy adults by exploring ways through which cognition can be improved and how this improvement influences pain perception.
- 3) Introduce novel paradigms of context-dependent pain modulation that are being implemented to study pain memory at the neurobiological level. These models may provide a better understanding of pain hypersensitivity and pain relief. These presentations will provide a better understanding of the neural and psychological mechanisms underlying the interaction between pain and cognition. A better understanding of this bidirectional interaction can help in the development of improved interventions for individuals with pain.

The role of value and cognitive resource availability in the trade-off between pain and cognitive effort: Mathieu Roy, PhD

Improving working memory and pain inhibition in young and older persons using neuromodulation of left dorsolateral prefrontal cortex.: Zoha Deldar, PhD candidate

Learning models of pain and pain relief: Loren Martin, PhD

Learning Objectives

- To examine the impact of reward on pain perception and cognitive task performance
- To examine the effect of neuromodulation in enhancing cognitive performance and pain inhibition in healthy young and old persons
- To explore the neurobiological mechanisms of pain memory, learning and conditioning through the use of novel animal and human paradigms

10.30 - 12.00

Wednesday Morning Breakout Sessions

Session 2
Sheraton B

Opioid de-prescribing: practical advice from a patient, a pharmacist and a physician on how to safely and successfully taper opioids.

Chair: **Andrea Furlan**, MD PhD, University of Toronto, Dept of Medicine, Associate Professor

Speakers: **Kirk Foat**, BA Sociology, University of Western
Laura Murphy, PharmD, Toronto Rehabilitation Institute, University Health Network, Pharmacy, Toronto
Andrew Smith, MDCM, Centre for Addiction and Mental Health

Symposium Abstract

Canada is the second largest prescriber of opioids in the world. The number of opioid prescriptions in Canada increased 6.8% between 2012 and 2016, from 20.2 million in 2012 to 21.5 million in 2016. The most common opioids prescribed in Canada include strong opioids such as hydromorphone, fentanyl, and oxycodone. Long-term and high dose opioids are associated with significant risks, which include death, opioid poisoning, sleep apnea, hypogonadism,

depression and opioid-induced hyperalgesia. The population with the highest of opioid use also has the highest risks from opioids; more than 20% of seniors received at least one prescription of opioid in 2015-16. (CIHI, 2018) The 2017 Canadian Opioid Guideline recommends that “for patients with chronic noncancer pain who are currently using 90 mg morphine equivalents of opioids per day or more, they taper opioids to the lowest effective dose, potentially including discontinuation, rather than making no change in opioid therapy”. De-prescribing opioids can be challenging to both clinicians and patients. The challenges are related to selecting the proper patients, choosing the best tapering regimen and sticking to the plan. The most common barriers from a clinician’s perspective include: lack of knowledge, skills, resources, motivation and empathy. Patients also lack knowledge about the reasons why tapering is necessary, and they fear worsening of pain and withdrawal symptoms. There is an urgent need to educate both clinicians and patients about appropriate tapering of opioids with the goals of improving quality of life of patients with chronic pain.

Getting to Zero: Kirk Foat, BA Sociology

Guidance on opioid tapering in the context of chronic pain: Evidence, practical advice and frequently asked questions: Laura Murphy, PharmD

Challenging cases of opioid tapering: Andrew Smith, MDCM

Learning Objectives

- At the end of this symposium participants will be able to identify appropriate patients for tapering opioids, use evidence-based protocols for opioid tapering, and to use empathy and compassion when helping patients to achieve the lowest possible dose of opioids to help them manage their chronic noncancer pain.

10.30 - 12.00

Wednesday Morning Breakout Sessions

Session 3

Sheraton C

Should it be the sociopsychobio model of pain? Novel theoretical, experimental, and clinical insights into social contexts of pain

Chair: **Whitney Scott**, PhD, King’s College London, Institute of Psychiatry, Psychology, and Neuroscience, London, UK

Speakers: **Kenneth Craig**, PhD, University of British Columbia, Psychology

Whitney Scott, PhD, King’s College London, Institute of Psychiatry, Psychology, and Neuroscience, London, UK

Maria Hudspith, MA, Director, Strategic Initiatives, Pain BC

Symposium Abstract

A proposal to update the definition of pain by Williams & Craig (2016) emphasizes the crucial role of social processes in the pain experience. However, within the biopsychosocial model of pain relatively less research has focused on social factors, as compared to biomedical or psychological factors. This session will argue for the need to place greater emphasis on the social context of pain from theoretical, experimental, and clinical perspectives. Theoretical models of the role of social contexts and interpersonal processes in the experience of pain and related disability will be outlined. Experimental data showing the impact of social threat on pain will be presented. Clinical data will be discussed to demonstrate the impact of social stigma on chronic pain outcomes and current challenges and opportunities for managing stigma will be identified. The session has the potential to advance theory and treatment development from both individual- and systems-level perspectives.

- **Is pain a social experience?:** Kenneth Craig, PhD
- **The impact and management of stigma in people with chronic pain:** Whitney Scott, PhD
- **Understanding the role of systemic violence and structural inequities in the pain experience:** Maria Hudspith, MA

Note: Session times and locations subject to change.

Learning Objectives

- Upon attending this symposium, attendees will recognize the importance of social features of pain experience for understanding pain, pain education and innovative interventions.
- Upon attending this symposium, attendees will have an understanding of pain as a fundamentally social and threatening experience which impacts on basic human needs.
- Upon attending this symposium, attendees will have an understanding of how stigma relates to chronic pain outcomes and approaches to managing stigma.

10.30 - 12.00**Wednesday Morning Breakout Sessions***Session 4
Sheraton E***Is enhanced pain facilitation and/or impairment in the efficacy of the endogenous inhibitory pain system an important contributing factor in chronic pain?**

Chair: Catherine E. Ferland, PhD, McGill University, Anesthesia
Speakers: Catherine E. Ferland, PhD, McGill University, Anesthesia
 Guillaume Leonard, Pht, Ph.D, Research Center on Aging – Université de Sherbrooke, École de réadaptation, Sherbrooke
 Karen D. Davis, PhD, Krembil Research Institute Division of Brain, Imaging and Behaviour – System Neuroscience

Symposium Abstract

Several factors may lead to poor pain management and consequently to the development of chronic pain, recognized as an expensive and debilitating public health issue. One abnormality associated with chronic pain is enhanced pain facilitation that can involve excitatory mechanisms such as central sensitization. A second abnormality associated with chronic pain is deficits in the endogenous mechanisms of pain control; possibly due to reduced efficacy of the endogenous inhibitory efferent pathways. Patients with sub-optimal function of this system are more likely to have poor pain control. This Symposium will examine brain-behaviour links related to pain facilitation (reflected by temporal summation of pain) and pain modulation (as reflected by conditioned pain modulation) in experimental and clinical studies.

Endogenous pain modulation in youth with musculoskeletal pain: psychophysical findings and clinical implications: Catherine E. Ferland, PhD

Endogenous pain modulation in the elderly: psychophysical findings and clinical implications: Guillaume Leonard, Pht, Ph.D

Contribution of bottom-up, top-down, and intrinsic activity in the dynamic pain connectome reflect individual pain sensitivity and chronic pain treatment response: Karen D. Davis, PhD

Learning Objectives

- To recognize the differences in the endogenous pain modulation among paediatric cohorts with pain conditions and at risk of poor acute and chronic pain management.
- To explore the role played by endogenous pain modulation in the occurrence of pain conditions and severity of pain symptoms in elderly individuals.
- To understand how brain imaging and psychophysics can be used to link brain mechanisms to the spectrum of behavioural pain sensitivity and to predict chronic pain treatment efficacy.

12.00 - 13.30

Plenary Room

Lunch - Special Luncheon (Sponsored)**New Directions in Chronic Pain: What Might the Future Hold?**

Chair: **Jordi Perez**, MD, PhD, FIPP, Associate Professor, Anesthesia and Director, Cancer Pain Fellowship, McGill University; Associate Medical Director, Alan Edwards Pain Management Unit; Director, MUHC Cancer Pain Program

Speakers: **Jordi Perez**, MD, PhD, FIPP, McGill University
Martin Koltzenburg, MD, Dr. med, Professor and Chair, Clinical Neurophysiology, University College London, UK; Neurologist and Head of the Department of Clinical Neurophysiology, The National Hospital for Neurology and Neurosurgery at Queen Square
Patrick Mantyh, PhD, JD, Professor of Pharmacology, Department of Pharmacology, University of Arizona

Symposium Abstract

Among adults in Canada, approximately 15-19% experience chronic noncancer pain – defined as a painful condition that persists for three months or longer. For most people with this type of chronic pain, it lasts much longer than three months: more than half of adults in Canada with chronic pain report suffering with it for more than 10 years. Two of the most prevalent types of chronic pain – and most common causes of disability in Canada – are low back pain and osteoarthritis, affecting up to 22% and 14% of Canadian adults, respectively. The burden of chronic pain weighs heavily on patients and society, with direct and indirect costs greater than that of cancer, heart disease, and HIV combined. Against this backdrop, in this symposium we will explore the challenges clinicians face in the pharmacological management of chronic pain and review our evolving understanding of the pathophysiology of chronic pain. Building on this science, we will discuss the mechanism of action, analgesic properties, efficacy, and safety of potential new treatments that modulate nerve growth factor (NGF) in chronic pain pathways, as well as the possible clinical applications of anti-NGFs to improve patient outcomes.

Unmet Needs and Challenges in Chronic Pain: Jordi Perez, MD, PhD, FIPP

The Mechanisms of Chronic Pain: What We Know in 2019: Martin Koltzenburg, MD, Dr. med

Advancing Knowledge in Chronic Pain Management: The Role of Nerve Growth Factor: Patrick Mantyh, PhD, JD

Learning Objectives

- Identify unmet needs and challenges in the optimal treatment of chronic pain, including low back pain and osteoarthritis
- Explain the current understanding of pain pathways and mechanisms and how they are modulated by current pharmacological treatment options
- Describe the mechanism of action of anti-nerve growth factor drugs in the management of chronic pain and their potential application in the clinical setting

12.00 - 13.30

Sheraton A

Trainee Workshop**Finding Your Way: A Career Survival Guide for Pain Trainees**

Chair: **Perri Tutelman**, PhD student, Dalhousie University & Carley Ouellette, RN, MSc student, McMaster University

Speakers: **Neil Andrews**, MS, MA, Pain Research Forum, International Association for the Study of Pain
Dawn Richards, PhD, Founder, Five02 Labs Inc. & Chronic Pain Network
Rebecca Pillai Riddell, PhD, Professor and Associate Vice-President Research, York University & Dept of Psychology, Hospital for Sick Children, University of Toronto

Preparing for a successful and rewarding career in the pain sciences following your formal training requires knowing what options are available and discovering what inspires you. In this workshop, three established speakers with diverse backgrounds and careers related to pain will discuss how they got to where they are and will share lessons they learned along the way. This workshop will offer practical advice to pain trainees considering careers both in academia and beyond. Following the presentations, trainees will have the opportunity to ask questions and participate in an interactive panel discussion with the speakers.

A Career Path to Science Journalism: I Was Young and Stupid, but It Worked Out in the End Anyway: Neil Andrews, MS, MA

How My Chronic Disease Led Me to My Consulting Career: Dawn Richards, PhD

I Still Don't Know What I Want to Be When I Grow Up: Rebecca Pillai Riddell, PhD

13.30 - 14.15

Plenary Room

Plenary Session:

Keynote speaker Beverly Thorn, PhD, ABPP, Professor and Chair, Clinical Health Psychology, Psychology Department, University of Alabama, Tuscaloosa, AL

14.30 - 16.00

*Session 1
Sheraton A*

Wednesday Afternoon Breakout Sessions

Stress and cognitive processes regulating the experience of pain and touch

Chair: Robert Bonin, Ph.D, University of Toronto, Leslie Dan Faculty of Pharmacy

Speakers: Robert Bonin, Ph.D, University of Toronto

Frank Porreca, PhD, University of Arizona, Dept of Pharmacology

Massieh Moayedi, PhD, University of Toronto, Faculty of Dentistry

Symposium Abstract

Pain is considered to be an “unpleasant sensory and emotional experience”. However, the relative pleasantness or unpleasantness of a sensory experience can be highly variable. The environmental, physiological, and cognitive context can profoundly affect how pain is experienced. For example, stress can both precipitate pain and amplify the unpleasantness of stimuli. The relationship between context and pain has been used in cognitive therapies designed to alleviate or diminish chronic pain.

In this symposium, we will examine the interplay between environmental and cognitive context on the perception and response to noxious and innocuous stimuli. First, Dr. Robert Bonin will discuss new work using optogenetic approaches to study how environmental conditions modulates response to gentle tactile stimuli. He will describe how mouse preference for the activation of sensory afferents responsive to gentle touch is abolished by stress in a manner dependent of the production of corticosterone. Next, Dr. Frank Porreca will describe a potential new mechanism underlying the relationship between stress and pain in functional pain states. His work reveals a kappa-opioid receptor mediated hyperalgesic circuit within the central amygdala that increases descending facilitation. Finally, Dr. Massieh Moayedi will describe data examining the contextual modulation of pain. He will demonstrate how interventions to cognitively re-evaluate the experience or response to a pain stimulus can modulate the perceived unpleasantness and neurophysiological response to pain. Together, these studies provide new mechanistic insight into the relationship between context and the cognitive and physiological response to noxious and innocuous stimuli.

Modulation of responses to gentle touch stimuli by physiological and environmental factors: Robert Bonin, Ph.D

Stress-induced descending facilitation from amygdala kappa opioid receptors in functional pain: Frank Porreca, PhD

The meaning of a painful stimulus modulates neurophysiological responses: Massieh Moayed, PhD

Learning Objectives

- To understand how optogenetics can be used to investigate acute changes in tactile sensory processing in freely behaving animals.
- To learn how stress and stress hormones can modulate the central processing of sensory stimuli and the modulation of pain by descending noxious inhibitory control.
- To gain insights into how cognitive expectations of pain can modulate the experience of pain.

14.30 -16.00

Wednesday Afternoon Breakout Sessions

Session 2
Sheraton B

Prioritizing pain provincially: The need for a comprehensive approach

Chair: Maria Hudspith, MA, Director, Strategic Initiatives, Pain BC

Speakers: **Fiona Campbell**, BSc, MD, FRCA, President Canadian Pain Society, Co-director Ontario Chronic Pain Network (Pediatric), Hospital for Sick Children
Susan Tupper, PT, PhD, Saskatchewan Health Authority, Pain Strategy
John X. Pereira, MD CM CCFP CIME CEDIR VI, President, Pain Society of Alberta, Co-Chair, Alberta Pain Strategy, Calgary, Alberta, Canada

Symposium Abstract

Recognizing the efforts and accomplishments in prioritizing pain in provinces and territories across the country, this symposium will explore the development process of three emerging provincial pain strategies.

While the presentations will focus on the Ontario, Saskatchewan, Alberta, and British Columbia pain strategies, we will be speaking to the complexities involved in system transformation efforts. This includes engaging a broad range of stakeholders with different interests and priorities, as well as the interconnected and sometimes competing components within pain strategies. By exploring in detail the efforts underway in these three provinces as a starting point, the symposium will promote discussions on navigating change in other provinces as well as broader system change efforts at a national level.

Ontario Chronic Pain Network Pain Strategy; structure, function, achievements

Fiona Campbell, BSc, MD, FRCA, President Canadian Pain Society, Co-director Ontario Chronic Pain Network (Pediatric), Hospital for Sick Children

SaskPain: Saskatchewan's journey to develop a provincial pain strategy

Susan Tupper, PT, PhD, Saskatchewan Health Authority, Pain Strategy

Alberta Pain Strategy: A Truly Provincial Collaboration

John X. Pereira, MD CM CCFP CIME CEDIR VI, President, Pain Society of Alberta, Co-Chair, Alberta Pain Strategy

Learning Objectives

- To learn about different system transformation approaches in the development of emerging provincial pain strategies
- To understand the objectives and the different components within provincial pain strategies and the relationship among them
- To situate research and practice in the broader policy context to help improve the lives of people living with pain

Note: Session times and locations subject to change.

14.30 -16.00

Wednesday Afternoon Breakout Sessions*Session 3*

Sheraton C

Interventional Procedures for the Management of Chronic Non-Cancer Pain

Chair: Harsha Shanthanna, MD, MSc, FRCPC, Associate Professor, McMaster University, Dept of Anesthesia

Speakers: Ian Beauprie, MD, FRCPC, Associate Professor, Dalhousie University, Department of Anesthesia, Pain Management and Perioperative Medicine
 Philip Peng, MBBS FRCPC, Founder (Pain Med), Professor, University of Toronto, Dept of Anesthesiology and Pain Management
 Harsha Shanthanna, MD, MSc, FRCPC, McMaster University

Radiofrequency procedures for chronic pain: Mechanism, Evidence and Public health implications: Ian Beauprie, MD, FRCPC

Interventions for the management of Hip and Knee Joint Pain: Philip Peng, MBBS FRCPC

Evidence Based Interventions for Chronic Pain: Present State and Future Directions: Harsha Shanthanna, MD, MSc, FRCPC

Learning Objectives

- To understand the mechanisms of RF treatment; strategies to select patients; new indications and modalities; and the implications for health budgets as RF treatment becomes more widespread.
- To understand the limitations of existing treatments for hip and knee joint pain; appreciate the innervation of knee and hip joints and potential sensory targets for pain interventions; and to discuss the potential role of image guided nerve block and radio-frequency treatments for knee and hip joint pain.
- To understand the evidence behind commonly performed interventional pain treatments and their limitations; appreciate the need for clinical studies and guidelines to better inform clinicians to perform evidence-based interventions; and
- To be aware of the ongoing efforts to promote evidence-based pain interventions in Canada.

14.30 -16.00

Wednesday Afternoon Breakout Sessions*Session 4*

Sheraton E

Cannabis in clinical practice: current and future state

Chair: Lori Montgomery, MD CCFP FCFP, Clinical Associate Professor, Cumming School of Medicine, Departments of Family Medicine and Anesthesiology, Perioperative and Pain Medicine

Speakers: G. Michael Allan, BSc, MD, CCFP, College of Family Physicians of Canada
 Barry D Kurtzer, BSc, MD MRO (AAMRO), Senior Staff Advisor, MRO and Medical Programs (retired), Driver Check Inc.
 Hance Clarke, MD PhD FRCPC, Staff Anesthesiologist, Director of The Transitional Pain Program Medical Director Pain Research Unit Department of Anesthesia and Pain Management, Toronto General Hospital Assistant Professor, University of Toronto

Symposium Abstract

As we begin to determine how medical use of cannabis fits into the context of legalization, we have an opportunity to re-examine the existing evidence and refine our conversations with patients. This workshop will address three key issues: what does the evidence currently tell us about the role of cannabis in chronic pain, and how do we best share this with patients? What advice can we give our patients who are currently using cannabis (whether authorized or not) regarding impairment? What does the basic science tell us about the potential of cannabinoid

Note: Session times and locations subject to change.

medications, and where might research lead in the future? The presentations will be followed by a panel Q&A with all speakers.

Is it high time for medical cannabis: critical thinking about the evidence in chronic pain:

G. Michael Allan, BSc, MD, CCFP

Cannabis and impairment: Barry D Kurtzer, BSc, MD MRO (AAMRO)

The promise of cannabinoids and future directions: Hance Clarke, MD PhD FRCPC

Learning Objectives

- Develop a patient-centred approach to discussing the evidence for cannabis in chronic pain
- Frame a conversation with a patient about possible impairment as a result of cannabis use
- With reference to the basic science of cannabinoids, explain the potential for cannabis in pain management, and consider possible avenues for future research

16.00 - 17.00

Coffee | Posters

17:00 - 18.30

Wednesday Late-afternoon Breakouts

Session 1

Sheraton A

Exploring Pain as a Multidimensional Experience: The Essential Role of Qualitative Research

Chair: **Judy Watt-Watson**, RN, MSc, PhD, University of Toronto, Lawrence S. Bloomberg Faculty of Nursing

Speakers: **Fiona Webster**, PhD, University of Toronto, Institute of Health Policy Management and Evaluation (IHPME)

Craig Dale, RN PhD, University of Toronto, Lawrence S. Bloomberg Faculty of Nursing

Nida Mustafa, BSc., MHSc., PhD Candidate, University of Toronto, Dalla Lana School of Public Health

Symposium Abstract

Pain is defined as a multidimensional experience – a highly subjective phenomenon resulting from the interaction of physical, biochemical, physiological, cognitive, emotional, behavioral, and sociocultural factors. Pain is complex, context-sensitive, and often resistant to objective measurement. Research that focuses upon the subjective nature of pain can contribute to understanding of the manifold ways in which pain is experienced in clinical and nonclinical contexts. This is important as patients and clinicians continue to identify deficiencies in all aspects of acute and chronic pain management despite growing biomedical understandings of its causes and consequences. Qualitative methods of engaging patients and clinicians in pain science are strongly recommended by the Canadian Institutes of Health Research (CIHR) and the International Association of the Study of Pain (IASP). Patient and caregiver experiences are now identified as key pieces of evidence to inform clinical pain services, health professional training, experimental interventions, and topics for research investment. In this presentation, we offer examples of qualitative explorations that have changed our understanding of pain, offer insight into the potential facilitators and barriers to good pain management, and generate critical directions for future research.

Narratives from learners about treating patients with chronic pain: Fiona Webster, PhD

Making pain visible through video and photo-elicitation: Craig Dale, RN PhD

The Influence of Context: Exploring immigrant Indian women's lived-experiences of chronic pain in Canada: Nida Mustafa, BSc., MHSc., PhD Candidate

Learning Objectives

- To identify qualitative approaches to the exploration of pain across clinical and community settings
- To describe social theory as a powerful means of seeing and articulating pain as a multidimensional phenomenon.
- To consider how qualitative evidence can inform clinical pain services, health professional training, experimental interventions, and topics for research investment.

17:00 - 18.30**Wednesday Late-afternoon Breakouts***Session 2
Sheraton B***Getting Your Message Across: Learning to Communicate about Pain with Different Stakeholders and Knowledge Users****Chair:** **Christine Chambers**, Departments of Pediatrics and Psychology & Neuroscience, Dalhousie University**Speakers:** **Neil Andrews**, MS, MA, Pain Research Forum, International Association for the Study of Pain**Maria Hudspith**, MA, Executive Director, Pain BC**Erica Ehm**, YMC.ca and Ehm & Co**Symposium Abstract**

Being able to effectively communicate about pain with different types of stakeholders and knowledge users (e.g., patients, caregivers, policy makers, the public at large) is critical in order to improve health outcomes and quality of care for patients with pain. Yet most of the formal training pain researchers and clinicians receive prepares them only for communicating with other researchers and clinicians. This workshop will provide an overview of effective communication strategies for different types of stakeholders and knowledge users, and will capitalize on the expertise and experiences of three professional communicators. Neil Andrews, Executive Editor of Pain Research Forum/RELIEF, will present on strategies for making science more accessible to the public. Maria Hudspith, Executive Director of Pain BC, will present on strategies to communicate effectively with policy makers to promote change. Erica Ehm, founder of YMC.ca (an award winning on-line publication for Canadian mothers) and owner of Ehm & Co (a digital agency specializing in the mother market) will talk about strategies to effectively communicate and engage with Canadian parents. In addition to sharing effective strategies, common mistakes and pitfalls will also be discussed. We will use Twitter during the symposium to take polls, share information, and promote engagement. The symposium will conclude with an interactive question and answer period. The role of effective communication in promoting dissemination and implementation of evidence to change practice and improve pain for patients in pain will be emphasized.

Making Science Accessible to the Public: What a RELIEF!: Neil Andrews, MS, MA**Getting Pain on the Agenda: Communicating with Policy Makers to Catalyze Change:** Maria Hudspith, MA**The Art Behind the Science: Communicating and Engaging with Parents:** Erica Ehm**Learning Objectives**

- To learn of the challenges facing efforts to translate complicated science into understandable language and how to overcome them.
- To understand the collective impact model as it applies to advancing policy change and to learn strategies for communicating with provincial and national policy makers
- To gain understanding of cutting-edge strategies from marketing that could be used to communicate and engage with parents about pain research and management.

Note: Session times and locations subject to change.

17:00 - 18.30

Wednesday Late-afternoon Breakouts*Session 3*
*Sheraton C***Mental expectations and neurobiological determinants of treatment outcomes****Chair:** **Mary E Lynch**, MD FRCPC, Dalhousie University, Department of Anesthesia, Pain Management & Perioperative Medicine**Speakers:** **Ian Beauprie**, MD, FRCPC., Dalhousie University, Department of Anesthesia, Pain Management & Perioperative Medicine**Javeria Ali Hashmi**, Bpharmacy, MSc, PhD, Department of Anesthesia, Pain Management & Perioperative Medicine, Dalhousie University**A. Vania Apkarian**, PhD, Professor of Physiology, Anesthesia, PM&R Northwestern University, Feinberg School of Medicine**Symposium Abstract**

It is recognized that endogenous pain relief systems, such as opioid circuitry in the brain, contribute to treatment outcomes of pain. Several neuroimaging studies have consistently highlighted that brain circuits are equipped to adjust pain intensity through learning, motivation and attention systems. Another phenomenon validated in several recent studies is that prior mental states and associated brain activity are significant indicators of intrinsically mediated changes in symptoms that occur on starting a new treatment. Thus, whether an individual has the endogenous capacity to mentally engage and respond to treatment is determined by patterns of brain connectivity. That optimally pre-configured brain circuits are a pre-requisite for better treatment outcomes is a potentially useful observation and needs wider acknowledgement to be clinically useful. New conceptual models and analysis techniques that look at macro-level brain structure and function in large-scale data are quickly revolutionizing this ability. Blue-sky research goals to predict, deploy and enhance these intrinsic responses are seeing a quick surge and may soon change how we diagnose and treat chronic pain. An important implication of these new approaches is that endogenous analgesia and placebo responses will be no longer seen as a non-specific or cryptic response, relevant only to clinical trials and devoid of value in the clinic. This symposium will highlight the role of the brain, the associated mechanisms and the psychological and clinical factors that shape the endogenous aspects of treatment response.

I am here for my oxy and my medical marijuana—I know it will work!': clinician perspective on patient expectations in chronic pain clinics: Ian Beauprie, MD, FRCPC.

Theory, mechanisms and teleological roots of expectation effects on pain therapy: Javeria Ali Hashmi, Bpharmacy, MSc, PhD

Chronic pain as addiction and as an exaggerated memory: A. Vania Apkarian, PhD

Learning Objectives

- Given the recognized magnitude of the placebo response (expectation effect), should a responsible clinician seek to eliminate it or amplify it?
- To overview theories and neurobiological mechanisms that mediate expectation effects on pain in experimental and clinical models.
- To understand that neurobiological and personality factors can predict the development of chronic pain and treatment outcomes.

17:00 - 18.30

Wednesday Late-afternoon Breakouts*Session 4*
*Sheraton E***Social mechanisms underlying the pain experience: Novel frameworks for examining the influence of social context.****Chair:** **Loren Martin**, PhD, Assistant Professor, Dept of Psychology, University of Toronto**Speakers:** **Loren Martin**, PhD, University of Toronto

Note: Session times and locations subject to change.

Andrey Ryabinin, PhD, Professor, Department of Behavioral Neuroscience, Oregon Health & Science University

Kristen Jastrowski Mano, PhD, Assistant Professor, Department of Psychology, University of Cincinnati

Symposium Abstract

Pain is considered a personal experience, but it is, in fact, rarely private. Individuals' behavioral responses to pain function to communicate distress to others in the environment, eliciting emotional reactions and caregiving actions that will in turn impact the sufferer's pain experience. This symposium will highlight the importance of understanding the social context of pain from a mechanistic perspective and how social threat alters the pain experience and emotionality in general and chronic pain populations. Evidence from both the basic science and clinical perspectives will be presented, illustrating how pain experiences can impact social interactions and how reactions from others in the social environment and the environment itself impact the sufferer's pain experience. Given the complex nature of social context and social interactions on pain sensitivity in humans and non-human animals, dissecting their integral role in mediating pain outcomes is critical. Our goal is to engage clinicians with pain neuroscientists to address how basic and clinical scientists can best address these complex questions. Thus, speakers will provide insight into (1) the fundamental mechanisms that engage the neural circuits responsible for pain modulation via social context, (2) the social transmission of pain sensitivity and lastly (3) how attentional biases to social threat may represent a critical mechanism underlying the co-occurrence of chronic pain and anxiety among chronic pain patients.

Examining the neural circuits and molecular targets for the social modulation of pain:

Loren Martin, PhD

Social transfer of hyperalgesia in rodents: Andrey Ryabinin, PhD

Attentional bias to social threat in pediatric chronic pain: Kristen Jastrowski Mano, PhD

Learning Objectives

- To understand the neural circuits and molecular targets for the social modulation of pain.
- To understand the contribution of social environment to induction of pain and the role underlying neural circuits.
- Illustrate how attentional biases to social threat represent an important mechanism underlying the co-occurrence of chronic pain and anxiety.

19.00 - 22.00

Trainee Social: Off-site

Free to attend; however, separation registration required. Please go to the CPS Registration Desk for more information.

The Ballroom, 145 John Street, Toronto

Thursday, April 4, 2019

- 07.00 - 08.00** **Breakfast and Poster Setup**
- 07.30 – 08.00** **Interventional Pain & Neuropathic Pain SIG Combined Meeting**
Sheraton A **Guest speakers:** Amitabh Gulati MD FIPP CIPS, Director, Cancer Pain Services, Memorial Sloan Kettering Cancer Center; Yasmine Hoydonckx MD FIPP, Toronto Western Hospital and UoT
- 08.00 - 08.30** **CPS's Annual General Meeting: A chance to have your say!**
Plenary Room
- 08.30 - 08.45** **Opening Remarks**
- 08.45 - 09.30** **Plenary Session: Opioid Receptors and the Brain**
Keynote speaker: Brigitte Kieffer, PhD, Scientific Director at the Douglas Mental Health University Institute; Professor, Department of Psychiatry, McGill University; Chair, Monique H. Bourgeois in Pervasive Developmental Disorders, Faculty of Medicine of McGill University; Canada Research Chair
- 09.30 - 10.30** **Coffee | Posters | Poster Judging**
- 10.30 - 12.00** **Thursday Morning Breakout Sessions**

Session 1 **Ethical, Legal, and Social Dimensions of Chronic Pain: Considerations for Medical Assistance in Dying, the Overdose Crisis, and a National Pain Strategy**
Sheraton A

Chair: **Daniel Z. Buchman**, PhD, MSW, RSW, Bioethicist and Clinician Investigator, UHN
Speakers: **Jennifer A Chandler**, BSc, JD, LLM, Professor, Bertram Loeb Research Chair, Centre for Health Law, Ethics and Policy, Faculty of Law, University of Ottawa
 Daniel Z. Buchman, PhD, MSW, RSW, Bioethicist and Clinician Investigator, UHN
 Karen D. Davis, PhD, FCAHS, Krembil Research Institute, Division of Brain, Imaging and Behaviour – System Neuroscience

Symposium Abstract

Chronic pain remains a major public health problem in Canada and globally. There are promising advances in science and technology that could improve the management of pain. North American society is also in the midst of an alarming rise in individual and population-level harms due to opioid-related overdoses. Efforts towards improving pain management as well as opioid-related morbidity and mortality have raised ethical, legal, and social questions for pain sufferers and their families, clinicians, scientists, and policymakers. Recent societal changes relevant to pain include a landmark Supreme Court of Canada decision, where the experience of pain and intolerable suffering featured prominently in the Court's decision to permit eligible persons to request euthanasia. These social transformations exist alongside efforts to develop a National Pain Strategy for Canada. This Strategy will be instrumental in defining a Canadian approach for pain management, research, and education. In this symposium, we address the ethical, legal, and social dimensions of three timely issues that affect pain management, research, education, and policy in Canada. First, we discuss pain, suffering, and eligibility for euthanasia. Second, we examine the ethics of stigma, chronic pain, and substance use disorders in context of the overdose crisis. Finally, we explore how neuroethics should be considered and included in the creation of Canada's first National Pain Strategy.

Pain Syndromes, Suffering, and Canada's New Medical Assistance in Dying Law: Jennifer A Chandler

Chronic Pain, Substance Use, and Stigma in Context of the Overdose Crisis: Daniel Z. Buchman,

Note: Session times and locations subject to change.

Neuroethics Considerations for a National Pain Strategy: Karen D. Davis, PhD, FCAHS**Learning Objectives**

- Understand the ethical and legal issues associated with pain syndromes and eligibility for medical assistance in dying;
- Recognize how chronic pain and substance use stigma may become intensified in context of the current overdose crisis;
- Explore how neuroethics issues should be considered in the development of a National Pain Strategy for Canada and the future of pain policy.

10.30 - 12.00**Thursday Morning Breakout Sessions***Session 2
Sheraton B***Pain after traumatic brain injury: A clinical and molecular perspective towards better management and prevention****Chair:** Gilles Lavigne, DMD, PhD, Université de Montréal, Hôpital du Sacré-Coeur de Montréal**Speakers:** Céline Gélinas, RN, PhD, McGill University, Centre for Nursing Research and Lady Davis Institute of the Jewish General Hospital

Caroline Arbour, RN, PhD, Université de Montréal, Hôpital du Sacré-Coeur de Montréal

Samar Khoury, PhD, McGill University

Symposium Abstract

Pain relief is a challenge in the context of traumatic brain injury (TBI) as many patients are temporarily unable to self-report. This is concerning because chronic pain is one of the most enduring sequelae of TBI and poorly managed pain in the acute phase of recovery could play a role in its development. Prevention of pain chronicity in this patient group starts with the use of validated tools to detect signs of unalleviated pain. A better understanding of the determinants associated to the emergence and maintenance of pain after TBI could also help clinicians identify at risk patients during the early stages of recovery. Ultimately, digging into the genetic profile of TBI individuals with chronic pain offers a new opportunity to match affected patients to suitable treatments. This symposium brings together clinicians and basic scientists to give an overview of the recent breakthroughs in our understanding of risk factors and preventive strategies for the alleviation of pain after TBI. After providing a brief introduction on the challenges surrounding pain assessment after TBI, Céline Gélinas will discuss her latest work regarding the adaptation of a behavioral pain scale for critically ill brain trauma patients. Caroline Arbour will describe the early clinical profile of TBI patients with persistent pain and investigate the possible underlying mechanisms. The session will conclude with a presentation from Samar Khoury, who will wrap-up the session and present emerging evidence supporting the plus value of genetic profiling to understand and treat chronic pain after TBI.

Pain assessment in critically ill brain-injured patients: Filling a gap into practice:

Céline Gélinas, RN, PhD

Early identification of patients at risk of chronic pain after TBI: How thinking outside the box could get us a long way: Caroline Arbour, RN, PhD**Using genetics to predict chronic pain in mild traumatic brain injury:** Samar Khoury, PhD**Learning Objectives**

- To share recent advances in pain assessment in the critical phase of TBI recovery
- Gain new insight into the clinical profile of TBI individuals who are at risk of transitioning from acute to chronic pain
- Project how genetics can be used to understand and treat chronic pain after TBI

Note: Session times and locations subject to change.

10.30 - 12.00 Thursday Morning Breakout Sessions*Session 3
Sheraton C***Neuromodulation for pain – choosing the right modality for the right patient at the right time****Chair:** Anuj Bhatia, MD FRCPC, University Health Network, Department of Anesthesia and Pain Medicine, University of Toronto**Speakers:** Angela Mailis, MD MSc FRCPC, University Health Network, Pain and Wellness Centre, Department of Medicine, University of Toronto
Anuj Bhatia, MD FRCPC, University Health Network, Department of Anesthesia and Pain Medicine, University of Toronto
Amitabh Gulati, MD, Memorial Sloan Kettering Cancer Centre, Department of Anesthesia and Pain Medicine**Symposium Abstract**

Neuromodulation including spinal cord (SCS) and peripheral nerve stimulation (PNS) is now increasingly available and it has a favorable benefit-to-risk profile with significant economic benefits for patients and the society. Traditionally, neuromodulation techniques are used to treat chronic neuropathic pain syndromes, but more recently, nociceptive pathologies have also been successfully treated. Offering neuromodulation early and to patients with appropriate indications are the keys to optimizing long-term outcomes. There is strong evidence to support benefits of SCS in peripheral neuropathic pain and its superiority over repeat surgery for patients with history of previous spine surgery. Paresthesia-based, tonic SCS (PB-SCS) has been extensively used to treat neuropathic pain in the limbs with or without axial pain with mean reduction in pain intensity of over 60%. However, PB-SCS suffers from limitations including attenuation of benefit with time and or problems with painful or unwanted paresthesias. Newer modes of SCS and recent advances in hardware for PNS have expanded the indications for neuromodulation and can improve the efficacy of neuromodulation in the pain population. This symposium will cover three key areas of current clinical and research interest – patient selection, mechanisms and outcomes of paresthesia-free SCS, and role of PNS in current pain management.

Patient selection for neuromodulation – who is likely to benefit and who will not:

Angela Mailis, MD MSc FRCPC

New modes of spinal cord stimulation (SCS) - High Frequency, Burst, High Density, and DRG stimulation – mechanisms of action and outcomes: Anuj Bhatia, MD FRCPC**It is not all about the spinal cord – peripheral nerve stimulation for pain:** Amitabh Gulati, MD**Learning Objectives**

- Attendees will be able to identify patients who can benefit from neuromodulation.
- Attendees will be able to understand mechanisms of new modes of spinal cord stimulation and the principles of evaluating outcomes of these modes in patients who trial these modes.
- Attendees will be able to recognize indications for the role of peripheral neuromodulation in patients with neuropathic pain.

10.30 - 12.00 Thursday Morning Breakout Sessions*Session 4
Sheraton E***Genes, Environments and Development in Pain: Crossing the Translational Divide****Chair:** Marco Battaglia, MD, Centre for Addiction & Mental Health Division of Child Youth and Emerging Adult Programme & Dept of Psychiatry University of Toronto**Speakers:** Marco Battaglia, MD, Centre for Addiction & Mental Health Division of Child Youth and Emerging Adult Programme & Dept of Psychiatry University of Toronto
Yves De Koninck, PhD, CERVO Brain Research Centre & Laval University
Steven Miller, MD, Hospital for Sick Children; University of Toronto
Simon Beggs, PhD, UCL Great Ormond Street Institute of Child Health, London, UK

Note: Session times and locations subject to change.

Symposium Abstract

This symposium will address the roles of genetic and environmental factors that influence risk for pain, and the possible gene-environment interplay. Special emphasis will be put on the developmental years: how early-life adversities and exposure to moderately harmful stimuli can modify the perception of pain in a stable manner, and influence the risk for prospective pain syndromes. This symposium brings together researchers and clinicians from both the human and the experimental fields, and will showcase investigations 'from preclinical to human, and back'. At the end of the symposium the listener will be able to appreciate how genetic and environmental factors influence pain early in life, how these processes likely unfold in a dynamic interplay, and how some preclinical data can be transferred to early risk identification and treatment applications in man.

Genes and Environment in Adolescent Pain: Concepts and Research Strategies: Marco Battaglia, MD

Early interference with parental cares and altered nociception: learning from preclinical modelling: Yves De Koninck, PhD

The Early Environment of Preterm Newborns: Implications of Pain for Brain Development: Steven Miller, MD

Early-life pain experiences and their implications for persistent pain in adult life: Simon Beggs, PhD

Learning Objectives

- Learn about how to study genetic and environmental influences on pain early in life in human populations and pre-clinically;
- How these processes likely unfold in a dynamic interplay, and how some preclinical data can be transferred to early risk identification and treatment applications in man
- How early environment may affect brain development, pain proclivity, and pain persistence in adult life.

12.00 - 13.30**Lunch | Posters****12.00 - 13.30***Plenary Room***Women in Learning and Leadership (WILL) Lunch**

Our Women in Learning and Leadership (WILL) has been established to provide a platform to inform, inspire, and promote women in academic, research, clinical, and policy environments related to the field of pain. We also encourage men to be engaged in this platform to raise awareness and perspectives for and from men. We are thrilled to announce that the 2019 session will open with talks from three prominent figures in learning and leadership, followed by a panel discussion, and Q&A.

Speakers: **Janet Rossant** PhD, CC, FRS, FRSC, Senior Scientist and Chief of Research Emeritus, Hospital for Sick Children
Lisa Robinson MD, FRCP(C), Associate Dean, Inclusion and Diversity, Faculty of Medicine, University of Toronto
Jim Woodgett PhD, Senior Investigator and Director of Research, Lunenfeld-Tanenbaum Research

13.30 - 15.00**Thursday Afternoon Breakout Sessions***Session 1**Sheraton A*

Advances in Magnetic Resonance Imaging of Human Spinal Cord: Challenges and Opportunities for Pain Researchers and Clinicians

Chair: **Ali Khatibi**, Ph.D, Dept of Neurology and Neurosurgery, McGill University
Speakers: **Christian Buchel**, MD., Department of Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, Germany
Ali Khatibi, Ph.D, Dept of Neurology and Neurosurgery, McGill University

Note: Session times and locations subject to change.

Robert L. Barry, PhD, Athinoula A. Martinos Center for Biomedical Imaging, Dept of Radiology, Massachusetts General Hospital, Harvard Medical School

Symposium Abstract

The spinal cord has long been known to be an important part of the central nervous system especially when it comes to the study of pain processing and its modulation. The spinal cord has received considerable attention in animal model studies, but some limitations (e.g., small diameter, physiological noise, high diversity in the shape) have hindered studying the spinal cord in living humans. Recent advances in magnetic resonance imaging (e.g., development of new tools, improvement of sequences and machines) have allowed researchers to study the structure and the function of the spinal cord in vivo. This symposium will present the state-of-the-art in structural and functional imaging of the human spinal cord, and describe the existing opportunities and challenges in this field. We will present specific examples of neuroimaging studies that focus on the role of the spinal cord in the processing and modulation of pain in humans. We will deliver guidelines and suggestions for future experimental and clinical studies interested in imaging the human spinal cord.

Combined fMRI of the brain and the spinal cord in pain research: Christian Buchel, MD

Understanding and modelling physiological noise in functional imaging of the human spinal cord: Ali Khatibi, PhD

Magnetic resonance imaging (MRI) of the human spinal cord at 7 Tesla: Robert L. Barry, PhD

Learning Objectives

- Understanding the interplay of the ascending and descending nociceptive system from the dorsal horn to the cortex
- Understanding the importance of modelling physiological noise in functional imaging of the human spinal cord
- Exploring the challenges and opportunities of spinal cord imaging at ultra-high magnetic fields

13.30 - 15.00

Thursday Afternoon Breakout Sessions

Session 2
Sheraton B

Pain in autoimmune disease

Chair: **Bradley Kerr**, PhD, University of Alberta, Dept of Anesthesiology and Pain Medicine

Speakers: **Bradely Kerr**, PhD, University of Alberta, Dept of Anesthesiology and Pain Medicine

Nader Ghasemlou, PhD, Queen's University, Dept of Anesthesiology and Pain Medicine

Ji Zhang, MD, PhD, McGill University, The Alan Edwards Centre for Research on Pain

Symposium Abstract

Multiple sclerosis (MS) and Guillain Barre Syndrome (GBS) are the two most frequently observed forms of autoimmune neuropathy in clinics. Often masked by muscle weakness and progressive paralysis, pain, although invisible, occurs often in these patients and is one of the most long-lasting sequelae of autoimmune neuropathy. However, the pathophysiology of pain in autoimmune disease is poorly understood. In this workshop, we will 1) discuss the animal model commonly used to study MS and examine new methodologies that allow us to analyze changes in sensory function while removing many of the confounds of motor impairment; 2) discuss the most recent findings on neuronal mechanisms of pain in MS highlighting the role of peripheral sensory ganglia in this process; 3) demonstrate the evidence of viral infection and injury triggered GBS like symptoms in mice and discuss the key role of CD8 T cell-macrophage interaction in autoimmune peripheral neuropathy-associated chronic pain.

Note: Session times and locations subject to change.

The role of the peripheral nervous system in central neuropathic pain: changes in primary sensory neurons in an animal model of CNS autoimmune demyelination: Bradely Kerr, PhD

New approaches to modeling pain in MS: Nader Ghasemlou, PhD

The essentials of CD8 T cell-macrophage interaction in autoimmune peripheral neuropathy and associated chronic pain: Ji Zhang, MD, PhD

Learning Objectives

- After this symposium, the learner will become familiar with novel animal models that model the pathophysiology of different autoimmune diseases.
- After this symposium, the learner will understand how the peripheral nervous system reacts and impacts on sensory function in disease states primarily affecting the CNS.
- After this symposium, the learner will gain insight into novel, immunological mechanisms that lead to pain in autoimmune peripheral neuropathy.

13.30 - 15.00

Thursday Afternoon Breakout Sessions

Session 3
Sheraton C

Keeping the “I” in Pain: Theoretical, Methodological and Clinical Strategies for Integrating the Subjective Experience of Pain Within Research and Practice.

Chair: **Timothy H. Wideman**, PT, PhD, McGill University, School of Physical and Occupational Therapy

Speakers: **Timothy H. Wideman**, PT, PhD, McGill University, School of Physical and Occupational Therapy

Eloise Carr, BSc(RN), MSc, PhD, University of Calgary, Faculty of Nursing

Stephen G. Henry, MD, MSc; University of California – Davis; Dept of Internal Medicine, Sacramento, California

Symposium Abstract

The “Holy Grail” for pain assessment research is often framed as an objective biomarker that can validate, or invalidate, the reported pain experience and guide clinical decision-making. The broader context for this quest, is a literature base that has historically emphasized the use of quantitative methodologies to study pain. Within this context, pain assessment strategies are typically focused on aspects of pain most readily communicated through numbers, such as pain intensity ratings or pain threshold levels. While quantitative pain measures are vital to understanding and targeting mechanisms and benchmarking management, they often overlook important attributes of the subjective experience, such as the personal context and meaning that shape our experiences of pain and suffering. This workshop aims to provide a novel perspective on the flipside of this historic trend by highlighting the inherent value of and need for qualitative methodologies that specifically address subjectivity related to pain. Presentations will provide theoretical, methodological and clinical perspectives on how to integrate personal language with standardized measures in order to better address the subjective experience of pain. Workshop presenters will speak from their diverse clinical backgrounds in physical therapy, nursing and medicine and research experience that draws on both qualitative and quantitative methodologies. Researchers and clinicians in the audience are expected to develop a new way of considering pain assessment that emphasizes the relative ability and value of different methodologies in addressing the subjective experience of pain.

The Multi-modal Assessment Model of Pain: A novel conceptual framework for further integrating the subjective pain experience within research and practice:

Timothy H. Wideman, PT, PhD

The added value of mixed methods research: Connecting and integrating the patient’s voice in pain research: Eloise Carr, BSc(RN), MSc, PhD

Note: Session times and locations subject to change.

Clinical strategies for evaluating the subjective nature of pain in primary care:

Stephen G. Henry, MD, MSc;

Learning Objectives

- Develop a new conceptual framework for understanding how the inherent subjectivity of pain influences its assessment and management.
- Understand how to effectively integrate qualitative and quantitative research methodologies to better access novel aspects of the subjective experience of pain.
- Develop practical clinical skills for evaluating and addressing patients' subjective experiences of pain within challenging primary care settings.

13.30 - 15.00 Thursday Afternoon Breakout Sessions*Session 4
Sheraton E***Trauma-Related Symptoms Associated with Chronic Pain, Traumatic Injury, and Major Surgery in Youth and Adults: Neurobiological, Psychological and Public Health Perspectives****Chair:** Hance Clarke, MD, FRCPC, PhD, Toronto General Hospital, Department of Anesthesia and Pain Management

Speakers: **Jillian Vinall**, PhD, University of Calgary, Anesthesia
Joel Katz, PhD, York University, Psychology Department and Toronto General Hospital, Department of Anesthesia and Pain Management
Melita Giummarra, BA (honours), PhD, School of Public Health and Preventive Medicine, Monash University, Melbourne, Victoria, Australia

Symposium Abstract

Globally, pain, mental health conditions and trauma lead to some of the greatest burden of disability across the lifespan. Understanding the mechanisms and manifestations of these problems is therefore a major public health priority to enable us to develop and deliver more effective and timely interventions to the right person at the right time. In this symposium, Dr Jillian Vinall will first discuss the co-occurrence of post-traumatic stress disorder symptoms in youths with chronic pain, and will present novel insights into neurobiological mechanisms associated with varying levels of PTSD symptoms in youths with chronic pain. Second, Dr. Joel Katz will discuss the role of sensitivity to pain traumatization and anxiety-related disorders in the manifestation of persistent pain both before and after major surgery. Sensitivity to pain traumatization describes the propensity to develop anxiety-related responses to pain that are similar to traumatic stress reactions, but are specific to pain as the traumatic experience. Finally, Dr Melita Giummarra will provide an overview of the prevalence and trajectories of pain and mental health problems after traumatic injury in adolescents through to older adults using population-level trauma registry data from Victoria, Australia. These neurobiological, psychological and population level modelling insights have significant implications for the delivery of early, timely, appropriate and effective interventions across the lifespan. We will therefore highlight important policy implications for improved delivery of services and treatments for pain and mental health that might ultimately lead to reductions in the global burden of pain and mental health conditions.

PTSD symptoms and chronic pain in youth: shared neurobiology as a mutually maintaining mechanism: Dr. Jillian Vinall, PhD

Sensitivity to Pain Traumatization: Links between Trauma and Pain in Surgical Patients and Patients with Anxiety Disorders: Joel Katz, PhD

Pain and mental health after injury: Who experiences persistent problems, and what role might early interventions have?: Dr Melita Giummarra, PhD

Note: Session times and locations subject to change.

Learning Objectives

- To better understand the neurobiological mechanisms underlying the development and maintenance of chronic pain and comorbid posttraumatic stress symptoms in youth.
- To better understand the psychosocial constructs underlying the risk of developing comorbid chronic pain and anxiety disorders.
- To provide an understanding of the predominant trajectories of pain and mental health over the first two years following injury, which can be used to proactively deliver timely and effective treatments to reduce the burden of injury.

15.00 - 16.00**Coffee | Posters****15.30 - 16.00**

Sheraton A

Special Session:**Introducing...Solutions for Kids in Pain****Christine T. Chambers**, PhD Scientific Director, Solutions for Kids in Pain

Are you a clinician who wants to improve pain management for children in your unit or institution? Are you a scientist or trainee who wants to get the results of your pediatric pain research directly into the hands of the people who can use it? Are you a patient or caregiver who wants to learn how you can use your experience to improve pain management for other children and families?

Canada is a world leader in children's pain research and effective treatments exist, but this research evidence is not consistently mobilized into practice due to barriers and disjointed efforts. Come to this introductory session to learn more about "Solutions for Kids in Pain" (SKIP), a newly formed knowledge mobilization network, based at Dalhousie University and co-led by Children's Healthcare Canada. SKIP seeks to bridge the gap between current treatment practices and available evidence-based solutions for children's pain in Canadian health institutions. SKIP's vision is healthier Canadians through better pain management for children, with a mission to improve children's pain management by mobilizing evidence-based solutions through coordination and collaboration. SKIP brings together Canada's world-renowned pediatric pain research community, front-line knowledge user organizations, and end beneficiaries (patients and caregivers). Guided by a diverse and experienced Board, SKIP capitalizes on the engagement of: 48 Children's Healthcare Canada member organizations, over 75 partners, 4 regional hubs, and patients and caregivers (using a "Patients Included" approach) to collaborate and co-produce interconnected knowledge mobilization activities. Our goal is improved children's pain management in Canadian health institutions.

All are welcome. Come and learn more about how *you* can be a part of making a difference for children in pain and their families!

16.00 - 17.30**Thursday Late Afternoon Sessions***Session 1*

Sheraton A

Hot Topics

Parent Emotional Presence during Child Pain: Examining Parent Emotion Regulation and Mindfulness during their Child's Cold Pressor Task

Rachel Moline, MA, University of Guelph, Department of Psychology

Characterisation of spinal sensorimotor circuit re-organisation following peripheral nerve injury

Charlie Kwok, BSc(Hons), PhD, Hotchkiss Brain Institute, Department of Veterinary Medicine

Investigating the neural basis for music modulation of pain in the brain and brainstem using functional MR

Jocelyn M Powers, BScH, Queen's University, Centre for Neuroscience Studies

Note: Session times and locations subject to change.

The effect of smoking on patients attending a tertiary pain management center: a propensity-weighted analysis on the Collaborative Health Outcomes Information Registry

James S Khan, MSc MD, University of Toronto, Department of Anesthesiology

The neural mechanisms behind conditioned analgesia in chronic neuropathic pain

Chulmin Cho, PhD, University of Toronto, Psychology

Can sensitivity to physical activity predict objectively measured activity levels better than psychological factors?

Daniel Flegg, BSc, McGill University, School of Physical and Occupational Therapy

Temporomandibular disorders: insights from musculature, brain, and genes

Chair: Barry Sessle, MDS, PhD, DSc(h.c.), University of Toronto, Faculty of Dentistry

Speakers: Iacopo Cioffi, DDS, PhD, Faculty of Dentistry, University of Toronto, University of Toronto Centre for The Study of Pain

Massieh Moayedi, PhD, University of Toronto

Shad Smith, PhD, Center for Translational Pain Medicine, Duke University

Symposium Abstract

Temporomandibular disorders (TMD) commonly manifest jaw muscle pain and represent the most common chronic orofacial pain disorder. TMD affect about 12% of Canadians and pose a significant socioeconomic burden on society. Although several risk factors are associated with myofascial TMD (mTMD), clear organic causes for TMD pain have not been proven. This ambiguity contributes to the frequent misdiagnosis and hence mistreatment of mTMD and poses a significant and unnecessary burden on patients and the healthcare system. About 30% of individuals with TMD report pain up to at least 5 years after treatment regardless of the type of management they have received. This relatively high rate of treatment resistance is partly related to uncertainties about the mechanisms underlying mTMD. There is a clear unmet need for clarifying the peripheral and central mechanisms of TMD in order to develop novel treatment strategies. This symposium will present new research findings and discuss novel research modalities that have advanced our understanding of TMD and promise to lead to the development of such treatments. A particular strength of this symposium is the convergence of evidence across different disciplines (genetics, muscle physiopathology, and brain imaging) with regard to orofacial pain mechanisms.

Functional and structural muscular signatures of chronic temporomandibular disorders:

Iacopo Cioffi, DDS, PhD

Structural and functional brain and trigeminal nerve abnormalities in temporomandibular disorders (TMD): Massieh Moayedi, PhD

Discovery of novel mechanisms for orofacial pain disorders through genome wide approaches:

Shad Smith, PhD

Learning Objectives

- Attendees will improve their understanding of jaw muscle physiopathology
- Attendees will learn about novel diagnostic approaches for orofacial pain
- Attendees will be able to identify novel methods for phenotyping orofacial pain

Session 2
Sheraton B

16.00 - 17.30

Thursday Late Afternoon Sessions

Session 3
Sheraton C

Let's Talk about (Painful) Sex!

- Chair:** Paul Yong, MD, PhD, B.C. Women's Hospital and Health Centre & Vancouver General Hospital, Obstetrics and Gynecology
- Speakers:** Lana Barry, MEd, University of Victoria, Centre on Aging
Paul Yong, MD, PhD, B.C. Women's Hospital and Health Centre & Vancouver General Hospital
Kate Wahl, BSc, University of British Columbia, School of Population and Public Health
Natasha Orr, MSc, University of British Columbia, Department of Obstetrics and Gynecology

Symposium Abstract

As many as 60% of women report experiencing sexual pain in their lifetime. This symptom negatively impacts psychosocial wellbeing, intimate relationships, and quality of life. Despite these sequelae, female sexual pain is under-researched and is often dismissed or mismanaged. The objective of this symposium is to summarize the pathophysiology and treatment of sexual pain in the context of clinical practice, research, and the patient experience. First, patient advocate Lana Barry will share her experience with sexual pain and highlight the importance of patient partners in research. Next, Dr. Paul Yong will discuss the etiology, diagnosis, and management of sexual pain. Finally, Natasha Orr and Kate Wahl will present quantitative and qualitative approaches to the investigation of female sexual pain.

The Journey from Pain to Advocacy: A Patient Partner Experience: Lana Barry, MEd

One Size Does NOT Fit All: A Multi-disciplinary Perspective on the Pathophysiology and Treatment of Female Sexual Pain: Paul Yong, MD, PhD

Two Half of a Whole: Quantitative and Qualitative Methods in Female Sexual Pain Research: Kate Wahl, BSc and Natasha Orr, MSc

Learning Objectives

- Realize the significant impact of female sexual pain from a patient perspective
- Understand the relationship between the etiology and multidisciplinary treatment of female sexual pain
- Learn about the examples of qualitative and quantitative methods in sexual pain research

16.00 - 17.30

Thursday Late Afternoon Sessions

Session 4
Sheraton E

Time for a PEP talk: Building the evidence for Patient Engagement in Pain

- Chair:** Carley Ouellette, BScN RN, McMaster University, Nursing
- Speakers:** Dawn Richards, PhD, Chronic Pain Network, McMaster University
Christine Chambers, PhD, Depts of Pediatrics and Psychology & Neuroscience, Dalhousie University
Kathryn Birnie, PhD, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto & Child Health Evaluative Sciences, The Hospital for Sick Children

Symposium Abstract

Public or patient engagement in research is "...research being carried out 'with' or 'by' members of the public rather than 'to', 'about', or 'for' them" (INVOLVE, 2018). Patient engagement represents a shift from the traditional view of patients as research participants to one that empowers patients, otherwise identified as 'people with lived experience', as partners and co-builders on research teams. Evidence suggests that engaging patients as collaborators enhances

Note: Session times and locations subject to change.

the quality, appropriateness, and relevance across stages of the research process. This includes increased study enrolment and decreased attrition, improved data collection tools, more effective dissemination and implementation of study findings, better researcher-community rapport, and closer alignment of research objectives to patient-identified priorities. However, challenges to greater uptake of patient engagement identified by researchers include difficulties identifying representative and appropriate patients, uncertainty about the scope of patients' roles, perceived lack of evidence regarding the impact of patient engagement, and the need for researcher education and culture change as a prerequisite. Thus, there is a need for continual knowledge generation and reflective practice regarding patient engagement in health research. The objective of this symposium is to illustrate diverse, meaningful, and active partnership of people with lived experience with pain and their families, in pain research governance, priority setting, research conduct, and knowledge translation. This symposium draws from multiple expert perspectives, including two individuals with lived experience with pain and extensive involvement with patient engagement (symposium chair and first speaker), as well as two researchers leading national patient engagement practice in pain research (speakers).

Integration of Lived Experience throughout the SPOR Chronic Pain Network: Dawn Richards, PhD

Patient engagement lessons learned from #ItDoesntHaveToHurt and #KidsCancerPain social media initiatives: Christine Chambers, PhD

#PartneringForPain: Empowering the patient and parent voice to co-build the future of pediatric chronic pain research: Kathryn Birnie, PhD

Learning Objectives

- To understand and critically view how patient partners' roles were established and are evolving in a national research network.
- To understand the experience of parent partners involved in social media initiatives and ways to improve it in the future.
- To see meaningful integration of patient and parent partners as members of a research team, and empowerment of patient and parent voices to identify pain research priorities.

18.30 – 19.30

Awards Gala Reception

*Grand Ballroom
Foyer*

19.30 - 23.00

Awards Gala Dinner and Dancing!

Plenary Room

Friday, April 5, 2019

08.00 - 09.15 **Breakfast**

09.15 - 09.30 **Opening Remarks**

Plenary Room

09.30 - 10.00 **Distinguished Career Award Keynote:**

Plenary Room

Keynote speaker: Karen D. Davis, PhD, FCAHS, Krembil Research Institute, Division of Brain, Imaging and Behaviour – System Neuroscience

Understanding Pain: from cells to brain to individual perceptions.

I was introduced to the field of pain in the late 1970s. At that time, the discovery of an endogenous opiate system fascinated scientists (and budding scientists like me) who asked: why do humans have opiate receptors in their brains and why do our brains manufacture endogenous opiates? Excitement grew as these discoveries led to new ideas about how we experience and potentially alleviate pain. It was soon apparent that the mechanisms underlying our individual experience of pain and the ability to modulate that experience was much more complex than originally conceptualized. This was the cornerstone of my career journey and I have been fortunate to be mentored by and collaborate with some of the seminal pain scientists and clinicians in my career, and to be able to reinvent myself based on technological advances as they emerged. In this talk, I will look back to provide an overview of how this work contributes to understanding pain from the perspective of single cell electrophysiology from primary afferents to the brain in animal models and in humans. I will then discuss the powerful approach of combining brain imaging, psychophysics and behavioural assessments to provide insight into the brain circuitry underlying individual pain experiences. Finally, I will anticipate how these approaches are leading to an understanding of biomarkers that could be developed to predict and guide personalized pain management.

10.00 - 10.30 **Early Career Award Keynote**

Plenary Room

Keynote speaker: Loren Martin, PhD, Assistant Professor, Dept of Psychology, University of Toronto

Bridging the translational divide in pain research

For many the term translational research refers to the “bench-to-bedside” enterprise of harnessing knowledge from basic science to develop new drugs, devices and therapies for patients. The current gap between translating basic science research findings into effective pain therapies in humans is a serious challenge, thus necessitating the concurrent use of both animal models and human cohorts. This problem is compounded further by not taking into account factors that modulate pain such as environmental variables and social influences. Research in the Martin lab attempts to overcome these translational barriers through experiments with animal and human subjects, while also analyzing biological samples from both species. Specifically, we use animal models to probe the influences of cognitive and social factors on pain modulation, while developing novel translational models to provide proof-of-importance for human pain modulation. This talk will highlight different translational approaches to address very different aspects of pain research. First, we have recently identified novel genetic variants that are associated with the development of chronic pain in people. Then, by using a reverse-translational approach in mouse models, we have uncovered the signaling cascade responsible for pain sensitivity and analgesia by these genes. In addition, this talk will emphasize separate lines of research where concerted efforts have been made to understand the role of the social and environmental context on pain modulation using both mice and humans.

10.30 - 11.00 **Morning Coffee Break**

Note: Session times and locations subject to change.

11.00 - 12.30

Friday Breakout Sessions

Session 1

Sheraton A

Pain and the Extracellular Matrix

Chair: Laura S Stone, PhD, McGill University, Alan Edwards Centre for Research on Pain

Speakers: Lisbet Haglund, Orthopedic Research Lab, McGill Scoliosis and Spine Group, Dept of Surgery, McGill University; Shriners' Hospital, Montreal
 Arkady Khoutorsky, PhD, DVM, McGill University, Dept of Anesthesia, Faculty of Medicine and Dentistry
 Maral Tajarian, PhD, Queens College, City University of New York, Biology Department

Symposium Abstract

The field of pain research has placed great emphasis on the mechanisms by which neuronal and glial cells regulate pain. In this symposia, we will highlight new insights into the role of the extracellular matrix (ECM) in pain generation and regulation. The workshop will cover mechanisms of pain regulation by the ECM in peripheral tissues (intervertebral discs) as well as in the spinal cord and the brain. The panelists will present data from murine models and from studies with human tissue samples.

Extracellular Matrix Fragments and Toll-like Receptors as drivers of Low Back Pain and Disc Degeneration: Lisbet Haglund, PhD

Remodeling of Spinal Extracellular Matrix Modulates the Development of Pain Hypersensitivity: Arkady Khoutorsky, PhD, DVM

The hippocampal extracellular matrix regulates pain and memory dysfunction after peripheral injury: Maral Tajarian, PhD

Learning Objectives

- Upon completion of this session, attendees will be able to describe the extracellular matrix plasticity that parallels chronic pain in the intervertebral disc, spinal cord, and brain.
- Upon completion of this session, attendees will be aware of various biophysical and biochemical tools that could be used to study the extracellular matrix in peripheral and central tissues.
- Upon completion of this session, attendees will demonstrate knowledge in various mechanisms by which the extracellular matrix can be targeted for the treatment of chronic pain.

11.00 - 12.30

Friday Breakout Sessions

Session 2

Sheraton B

Beyond pediatric pain: The mutual influence of child pain and cognitive, emotional and social development.

Chair: Rebecca Pillai Riddell, PhD, York University, Dept of Psychology, Hospital for Sick Children, University of Toronto

Speakers: Maria Pavlova, MSc, University of Calgary, Department of Psychology
 Ruth E. Grunau, PhD, University of British Columbia, Dept of Pediatrics
 Rebecca Pillai Riddell, PhD, York University, Dept of Psychology, Hospital for Sick Children, University of Toronto

Symposium Abstract

Pain in childhood is prevalent. Painful medical procedures (e.g., surgeries, immunizations), everyday cuts and bruises, and acute or chronic illness-related pain are a normative part of children's lives from the first days. Nociception shapes children's and caregivers' behavioural and psychosocial reactions to pain. Painful experiences of infancy and early childhood produce a

Note: Session times and locations subject to change.

cascade of effects on children's brain development and long-term developmental outcomes. At the same time, nociception and pain experiences are powerfully influenced by cognitive and psychological factors that undergo extensive changes in early childhood. For instance, children's rapidly developing language, communication skills, and autobiographical memory significantly alter parent-child verbal exchanges about the immediate and past pain. Social context, a key component in the experience of pain, is particularly robust in early childhood with parents exerting considerable influence on immediate pain experiences and their aftermath. For example, certain parent behaviours may increase or, on the contrary, alleviate infant distress during painful medical procedures. Further, parents may reduce detrimental long-term effects of pain-related distress following hospitalization at the neonatal intensive care unit. The proposed symposium will examine how children's cognitive, psychological, and social development and pain experiences mutually shape and influence each other within the context of changing parent-child verbal and non-verbal interactions. The panel includes an interdisciplinary group of researchers, applying a developmentally informed multi-dimensional biopsychosocial lens to pediatric pain research in the clinical and real-world settings.

The influence of parent-child reminiscing about past pain on children's prosocial development: Maria Pavlova, MSc

The adverse long-term effects of pain-related stress in the NICU and the role of parents in improving developmental outcomes: Ruth E. Grunau, PhD

Managing infant vaccination-related pain: Is preventing insensitivity better than promoting sensitivity?: Rebecca Pillai Riddell, PhD

Learning Objectives

- To understand and discuss the differences in parent-child reminiscing about past distressing events and their association with children's prosocial behaviours.
- To discuss the impact pain-related stress on brain development and the role of parents in reducing detrimental effects of pain on children's developmental outcomes.
- To discuss new ways of using the power of parents to manage pediatric pain across medical contexts.

11.00 - 12.30

Friday Breakout Sessions

Session 3
Sheraton C

Formal Continuing Pain Education: How Can It Improve Patient Outcomes?

Chair: Thomas Hadjistavropoulos, PhD, ABPP, FCAHS, Centre on Aging and Health, University of Regina

Speakers: Judy Watt-Watson, RN, MSc, PhD, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto
Michelle Gagnon, Ph.D, Department of Psychology, University of Saskatchewan
Thomas Hadjistavropoulos, PhD, Centre on Aging and Health, University of Regina

Symposium Abstract

We will focus on continuing pain education training initiatives targeting health professionals working with children, vulnerable seniors with dementia as well as other adults. The need for formal continuing pain education cannot be understated. It is also clear that continuing pain education tends to increase participants' knowledge about pain care. The extent to which such education leads to improved clinical practices and outcomes is less clear. We will review the literature in this area and introduce some new data with the aim of identifying elements that tend to increase the probability that continuing pain education will improve patient outcomes.

Improving Pain Practices through Continuing Professional Development: Is Education Enough?
Judy Watt-Watson, RN, MSc, PhD

Increasing Knowledge of Evidence-Based Practice Among Health Professionals Working with Children and Parents: Michelle Gagnon, PhD

Continuing pain education in long-term care: Does it improve patient outcomes?:
Thomas Hadjistavropoulos, PhD

Learning Objectives

- To familiarize participants with types and outcomes of formal continuing pain education initiatives involving health professionals who work with people of all ages.
- To examine the relevance of the Pain Interprofessional Curriculum Design Model to continuing professional pain education contexts.
- To familiarize participants with factors that tend to increase the probability that continuing professional education will lead to improvements in patient outcomes.

11.00 - 12.30

Friday Breakout Sessions

Session 4
Sheraton E

Pain in cancer survivorship: Applying a lifespan approach to better understand an understudied problem

Chair: **Nicole M. Alberts**, PhD, St. Jude Children's Research Hospital, Dept of Psychology, Memphis, Tennessee

Speakers: **Fiona Schulte**, PhD, Department of Oncology, Division of Psychosocial Oncology Cumming School of Medicine, University of Calgary
Nicole M. Alberts, PhD, St. Jude Children's Research Hospital, Dept of Psychology, Memphis, Tennessee
Lynn R. Gauthier, PhD, Université Laval, Dept of Family and Emergency Medicine
Myriam Asri, BScN, RN, Health Admin. MSc, Université Laval, Department of Community Health

Symposium Abstract

Advances in early detection and treatment have dramatically increased both pediatric and adult-onset cancer survival rates. Nonetheless, long-term treatment-related morbidity, also referred to as late effects, are common among survivors. Moreover, these effects can be disabling and life threatening. As the number of cancer survivors continues to grow and the population ages, it is likely that the burden of late effects on both the individual and society will also continue to increase. Despite the prevalence of pain during and after cancer treatments and its impact on functioning and quality of life, pain has remained understudied relative to other late effects. In recognition of this overlooked area, increasing calls have recently been made to bring attention to pain among survivors. Utilizing a lifespan and developmental approach, this symposium aims to amplify this call, and provide an overview of work examining pain in cancer survivorship among child, adolescent, young adult, and older adult populations. First, results of a qualitative study examining the pain narratives of pediatric survivors of childhood cancer will be described. Next, findings pertaining to the prevalence, predictors, and functional outcomes of pain among adolescent and young adult survivors of childhood cancer will be presented. Finally, results of a longitudinal study examining age-related patterns in acute and chronic pain among breast cancer survivors will be summarized. Clinical implications of these findings as well as future directions for advancing the field of pain and cancer survivorship will be discussed.

The pain of survival: An examination of pain narratives in long-term survivors of childhood cancer and their caregivers: Fiona Schulte, PhD

Prevalence and functional consequences of pain in adolescent and young adult survivors of childhood cancer: Nicole M. Alberts, PhD

Age-related patterns in taxane-induced acute and chronic pain and other sensory symptoms among adult breast cancer survivors: Lynn R. Gauthier, PhD and Myriam Asri, BScN, RN

Note: Session times and locations subject to change.

Learning Objectives

- To bring awareness to the problem of pain in cancer survivorship.
- To consider the influence of treatment/procedure, health, psychological, and developmental factors on pain among survivors.
- To describe the use of quantitative and qualitative research methods currently being applied to the study of pain in cancer survivorship.

12.30

Conclusion of CPS's 2019 ASM – See you in 2020

Canadian Pain Society's 41st Annual Scientific Meeting
19 – 22 May 2020 | Calgary, Alberta

Poster Finalists: Wednesday, April 3rd & Thursday, April 4th

Poster #	Presenting Author	Poster Title
19	Jaimie Beveridge	Accumulating risk: Parent chronic pain and trauma symptoms predict poorer outcomes for youth with chronic pain
18	Chulmin Cho	The neural mechanisms behind conditioned analgesia in chronic neuropathic pain
20	Martha Lopez-Canul	DELTA9-TETRAHYDROCANNABINOL IN NEUROPATHIC PAIN AND COMORBID INSOMNIA
21	Oladayo Oladiran	CX3CR1 expression is required for the development of pain like behavior in a mouse model of autoimmune peripheral Neuropathy
17	Catherine Paré	Recovery expectancies, pain, and PTSD symptom severity
22	Sarasa Tohyama	Lesional trigeminal neuralgia: Neuroimaging and clinical characterization of a new trigeminal pain syndrome

Poster Presentations for Wednesday, April 3rd

Poster #	Presenting Author	Poster Title
78	Rodrigo Deamo Assis	The effects of transcranial direct current stimulation associated with graded motor imagery on central post-stroke pain: a case report.
15	Andrea Aternal	Computer-Based Application Exploring the Role of Phantom Limb Telescoping' in Post-Amputation Pain
7	Abid Azam	Capacity to describe inner experiences predicts lower pain-related mind-wandering during a smartphone-based mindfulness task in people with chronic pain
55	Léa Proulx-Bégin	Added value of a conditioning to optimize the neuromodulatory effect of rTMS on heat thresholds: A pilot study.
42	Helene Bertrand	Mannitol cream for pain control, a chart review
35	Etienne J Bisson	Prevalence of falls and associated risk factors in adults living with chronic pain
91	Terry K Borsook	Exposure to stressful life events predicts reduction in placebo analgesic response
80	Sabrina Bouferguene	Age and the experience of chronic pain after moderate-to-severe traumatic brain injury
106	Yvonne Brandelli	Understanding Pain Management Information Needs in Caregivers of Children with Arthritis
41	Heather Buckingham	Meeting the Needs of Young Adults with Chronic Pain: A 1-week Intensive Pain Management Program
49	Dr. Norm Buckley	Updates from the Chronic Pain Network
50	Dr. Norm Buckley	Active Knowledge Translation around Pain Management in Hemophilia – A National Working Group
63	Mariana Bueno	Implementation of the Infant Pain Practice Change (ImPaC) Resource: From Prototype to Refined Version using a User-centered Design Approach
1	Jason W. Busse	Comparative Analysis of Impairment Ratings from the 5th and 6th editions of the AMA Guides
2	Jason W. Busse	A systematic review of interventions to promote safer and more effective opioid prescribing for chronic non-cancer pain
3	Jason W. Busse	Predictors of prolonged opioid use following prescription for acute musculoskeletal injury
4	Jason W. Busse	Acupuncture for the management of chronic diabetic peripheral neuropathy: A systematic review and meta-analysis of randomized trials
5	Jason W. Busse	Opioid Utilization and Perception of Pain Control in Hospitalized Patients: A Cross-Sectional Study of 11 Sites in 8 Countries
26	Celia Cassiani	USING VIRTUAL REALITY TO REDUCE PROCEDURAL PAIN AND DISTRESS IN CHILDREN WITH CANCER: A FEASIBILITY PILOT RANDOMIZED CONTROLLED TRIAL
107	Edwin Chu	Efficacy, Safety, and Tolerability of Ubrogепant for the Acute Treatment of Migraine: a Single-Attack Phase III Study, ACHIEVE I
109	Edwin Chu	Multicenter, Prospective, Randomized, Open-Label Study Comparing Efficacy, Safety, and Tolerability of OnabotulinumtoxinA and Topiramate in Chronic Migraine: The FORWARD Study
48	Kaytlin Constantin	Identifying Parent Traits that Predict Parent Heart Rate Variability Response to Child Acute Pain: Preliminary Findings
10	Alison Crawford	Cognitive depressive symptoms and helplessness predict pain at one year in women with interstitial cystitis/bladder pain syndrome (IC/BPS)
32	Craig M. Dale	Validation of the Critical-Care Pain Observational Tool (CPOT) to Detect Oropharyngeal Pain in Mechanically Ventilated Adults
56	Lise Dassieu	Chronic Pain Experience and Management among People Who Use Illicit Drugs: A Qualitative Study in Montreal (QC)
37	Goran Davidovic	OnabotulinumtoxinA and Quality of Life, Health Resource Utilization, and Work Productivity in Chronic Migraine: Interim Results From the PREDICT Study
58	Manon Defaye	Blastocystis Infection is Associated with Colonic Hypersensitivity and Intestinal Dysbiosis
59	Manon Defaye	Granulocyte-colony stimulating factor (G-CSF) mediates central sensitization underlying chronic visceral pain following inflammation.
89	Simon Deslauriers	Waiting time for multidisciplinary pain treatment: associations with improvement in pain interference for patients with rheumatic conditions
69	Miranda DiLorenzo	An Examination of the Concurrent and Directional Relationships between Caregiver and Infant Cardiac Indicators of Pain-Related Distress During Vaccination

31	Colleen Donder	A Canadian Perspective on the Availability and Access to Non-Pharmacological Treatments for Chronic Non-Cancer Pain
51	Kimberly R. Edwards	A survey of Canadian pediatric chronic pain clinics: Views on somatic symptom disorder and related diagnoses among various health care professionals
28	Chrystelle El-Khoury	Gender and sex differences in self-management of chronic pain in the presence of medical comorbidities
16	Anni Fan	The Impact of High Salt Diet on the Nociceptive Pain Thresholds and Functional Phenotype of Myeloid Cells
29	Churmy Fan	Sex Differences in the Role of Pannexin-1 in Neuropathic Pain
66	Allen Finley	Drawing on a Child's Perception of Pain: A Case Report
100	Vicky Fournier	Impact of E-Learning Modules on Self-Efficacy Regarding Chronic Regional Pain Syndrome (CRPS) in Family Physicians
8	Adria Fransson	Use of Central Sensitization Inventory in females with chronic pelvic pain
45	Katherine Fretz	The Role of Psychosocial Mechanisms in the Pain-Disability Relationship in Inflammatory Bowel Disease
81	Andrea Furlan	An assessment of opioid prescribing behaviors in Ontario family physicians before and after participation in ECHO Chronic Pain/Opioid Stewardship
99	Veronique Gagnon	Linkage between self-reported and administrative data: A review about patient's willingness to share their health insurance number for research purposes.
52	Lara Genik	Testing the effectiveness of a pain training for respite workers supporting children with developmental disabilities: A randomized controlled trial protocol
64	Maryam Ghodrati	Exploring the dimensions of gender in the context of a new Gender, Pain and Expectations Scale for pain research.
96	Tiffany Got	The effects of prescribed analgesics on driving
34	Erik Grasaas	iCanCope with Pain™: Cultural Adaptation and Usability Testing of a Self-management App for Adolescents with Persistent Pain in Norway
93	Samah Hassan	Development and Validation of a Pain Competence Assessment Tool (PCAT) based on the IASP Core Competencies for Pain Management
94	Samah Hassan	Promoting an Interprofessional Approach to Chronic Pain Management in Primary Care Using Project ECH
95	Samah Hassan	Does Integrative Medicine Reduce Prescribed Opioid Use for Chronic Pain? A Systematic Literature Review
84	Sebastian Haupt	A scoping review of transdermal buprenorphine use for non-surgical pain in the paediatric population.
106	Sølvi Helseth	Pain among adolescents may be amplified by a difficult family situation and insecure relationships with peers
76	Peter Shih-Ping Hung	Cortical neuroplasticity after focused peripheral radiation: Longitudinal effects of Gamma Knife radiosurgery for classic trigeminal neuralgia
36	Gabriela Ioachim	Coordinated networks in the human brainstem and spinal cord during the expectation of pain
75	Patrick Ippersiel	Exploring the relationship between pain catastrophizing, pain-related fear and trunk biomechanics in chronic low back pain: A scoping review.
70	Muhammad F Jeddi	Characteristics of patients with pain admitted to a regional Hospital in Victoria-Australia
11	Jean-Luc Kaboré	Impact of a personalized home exercise program for knee osteoarthritis patients on physical examination outcomes: A cluster randomized controlled trial
53	Laura Katz	The Development of a Novel Interdisciplinary Chronic Pelvic Pain Program
14	Anais Lacasse	Trajectory modelling techniques useful to pain research: A narrative comparison of approaches
79	S.Fatima Lakha	Comparison of Older and Younger Patients referred to a university-affiliated community pain clinic in the Greater Toronto Area (GTA)
62	Mandy Li	Acute postoperative opioid consumption trajectories and long-term outcomes in paediatric patients after spine surgery
85	Shelly-Anne Li	eHealth interventions for improving evidence-based pain practices among healthcare professionals: A scoping review
110	Joy MacDermid	Arthroscopic versus mini-open rotator cuff repair: A Randomized Trial and Meta-analysis
111	Joy MacDermid	Sex and gender-based analysis in studies of thumb osteoarthritis
74	Nicole E. MacKenzie	The relationship between parent attitudes towards vaccines and use of a knowledge translation resource for children's vaccination pain management
60	Marie-Eve Martel	How Do Pain Characteristics, Comorbidity Severity and Patient Characteristics Influence Chronic Pain Patients' Self-Management Priorities?
61	Marie-Eve Martel	What Predicts Perceived Medical Burden among Chronic Pain Patients with Medical Comorbidities?
27	Chloé Martineau-Lessard	Intensive care pupillometry as a predictor of opioid consumption following intubation: A preliminary study in moderate-to-severe traumatic brain injury
38	Geraldine Martorella	Clinicians' perception of a tailored Web-based intervention for the self-management of pain after cardiac surgery
39	Geraldine Martorella	Tailored Web-Based Interventions for Pain: Systematic Review and Meta-Analysis
25	Carol McNair	Thematic synthesis of parental participation for procedural pain management in the NICU.
12	Allison McPeak	Parent Protective Behaviours Influence Youth Pain-Related Outcomes Following Intensive Pain Rehabilitation
98	Valentina Mihajlovic	The Effect of Childhood Trauma on IBD Symptom Severity is Mediated by Pain

88	Shirin Modarresi	Can trajectories of recovery in patients with distal radius fractures be impacted by depression? A latent growth curve analysis.
6	Abi Muere	The Temporal Relationship between Catastrophizing and Chronic Pain
65	Michael Najfeld	Reduced morphine consumption, pain intensity, as well as better early mobilization with local infiltration anesthesia versus femoral three-in-one nerve block
24	Cara Nania	PTSD Symptoms as a Mediator in the Relationship Between Pre-Sleep Arousal and Chronic Pain in Youth.
33	Don Daniel Ocaj	Acute postoperative pain trajectories predicted by preoperative psychological and functional outcomes in adolescents undergoing spine surgery
86	Sheila O'Keefe-McCarthy	Heart[-ART-INFORMED] Journey through Cardiac Pain: An Qualitative Artistic Interpretation
87	Sheila O'Keefe-McCarthy	Design of an Emergent Acute Heart Pain Application: Patient and Clinician Perspectives
72	Natasha L. Orr	Increased central sensitization in women with chronic pelvic pain and painful bladder syndrome
57	M Gabrielle Pagé	Relative frequency and risk factors for prolonged opioid therapy after surgery and trauma: a systematic review and meta-analysis
108	Kyna Patterson	Realist Synthesis of Educational Interventions Regarding Paediatric Pain
68	Michaela Patton	Pain and Post-traumatic Stress Disorder Symptoms in Parents of Childhood Cancer Survivors
23	Ben Pinder	Inagene targeted pain panel: A new pain-focused genotyping platform to guide personalized pain management decisions
54	Nivez Rasic	Improvement in Outcomes of Parents of Youth with Chronic Pain Following Intensive Pain Rehabilitation at the Alberta Children's Hospital
9	Alexandra Reda	Acceptability and Feasibility of Quantitative Sensory Testing in Children: A Pilot Study
83	Satya Sardonicus	Reduction of headache frequency in adult women when addressing the dural fascial kinetic chain (DFKC)
40	Hadi Shojaei	Non-Dermatomal Sensory Deficit, a prevalent but missing phenomenon, in chronic pain patients attending Chronic Pain Management Program in Norther Ontario
43	Hocine Slimani	Neural correlates of the trade-off between pain avoidance and reward seeking
67	Michael Smyth	Retrospective review of the use of transdermal buprenorphine patches (Butrans) in a pediatric population
71	Naiyi Sun	Wide Variation in Opioid Prescribing Practices After Discharge in a Pediatric Teaching Hospital
73	Neha Thakur	Comparison of Sleep Oral Parafunctional Habits between Acute and Chronic painful TMD patients.
101	Xin Tong	EXPLORATION OF BODY OWNERSHIP, AGENCY AND HEAT PAIN PERCEPTION IN VIRTUAL REALITY (VR)
30	E. D. Trottier	Patients' and caregivers' experiences with pain management in children and teenagers with sickle cell disease requiring admission for vaso-occlusive crisis
90	Perri Tutelman	Parent Perspectives on the Benefits and Limitations of a Social Media Campaign to Disseminate Evidence-Based Information on Pediatric Cancer Pain
104	Zakir Uddin	Evaluating the novel added value of neurophysiological pain sensitivity within the Fear-Avoidance Model of Pain
105	Zakir Uddin	Phenotyping chronic musculoskeletal by pain catastrophizing and pressure pain threshold level and comparing on constructs of the fear-avoidance model of pain
77	Phichaporn Upho	The peak effect and duration of pain relief after single dry needling of upper trapezius muscle in myofascial pain syndrome: A daily follow up study
46	Kyle Vader	Experiences participating in physical activity and exercise among adults with chronic pain: an interpretive descriptive qualitative study
47	Kyle Vader	Establishing linkages between a hospital-based chronic pain clinic and community-based physical activity and exercise programming: challenges, successes, and next steps
102	Vishal Varshney	Sociodemographic Factors in Alberta's Pediatric Pain Rehabilitation Program
103	Vishal Varshney	Sociodemographic Factors in Alberta's Pediatric Pain Rehabilitation Program
13	Allison Verge	Patients' perspectives on methods of assessing pain
97	Todd A. Vogel	Don't Think Too Hard: Investigating Choices between Physical Pain and Cognitive Effort
44	Jordana Waxman	A comparison of the directional and concurrent relationships between behavioural and cardiac indicators of vaccination pain at 12 months
92	Tessa Wihak	Anxiety Mediates the Relationship Between Insomnia and Pediatric Chronic Pain over Time

Poster Presentations for Thursday, April 4th

Poster #	Presenting Author	Poster Title
34	Eid Aldossary	The impact of a pain educational intervention on nursing students' knowledge, attitudes, and self-efficacy regarding pain management
77	Navpreet Arora	Contribution of acute post-operative pain towards neuropathic pain after breast cancer surgery- 3-month prospective cohort study
96	Shaylea Badovinac	Associations Between Parental Psychopathology and Infant Pain-Related Distress Behaviour: Is Infant Temperament a Moderator?
30	Krista Baerg	Canadian Surveillance of Complex Regional Pain Syndrome in Children and Youth – Results from Year 1 Surveillance
9	Ariane Ballard	External Cold and Vibration for Pain Management of Children Undergoing Needle-Related Procedures in the Emergency Department: A Randomized Controlled Non-Inferiority Trial
28	Deanna Befus	Nonpharmacological self-management of migraine across social locations in the southeast United States: An equity-oriented, qualitative analysis
8	Anna Bendas	Long-term physical exercise training program successfully reduces pain intensity and benefits psychological factors in individuals experiencing chronic low back pain.
29	Dominika Bhatia	Evaluation of chronic pain patient healthcare costs before and after a tele-education intervention for primary care providers in underserved communities.
68	Michelle Biehl	The efficacy of the iPACK block for pain management in patients undergoing total knee arthroplasty
55	Kathryn A Birnie	Child and parent predictors of healthcare utilization amongst children and adolescents with chronic pain
3	Alice Bruneau	Quantitative Sensory Testing Influences Treatment in Pediatric Chronic Pain Interdisciplinary Clinic
79	Oana Bucsea	The Moderating Role of Toddler Effortful Control on Parent-Toddler Co-Regulation During Vaccinations
40	Jason W. Busse	Management of acute, non-back, musculoskeletal pain: a systematic review and network meta-analysis of randomized trials
48	Jason W. Busse	Healthcare provider knowledge, attitudes, beliefs and practices surrounding the prescription of opioids for chronic non-cancer pain: Mixed-method systematic review
50	Jason W. Busse	Prevalence and intensity of persistent post-surgical pain following breast cancer surgery: a systematic review and meta-analysis of observational studies
51	Jason W. Busse	Characteristics of Canadians likely to try or increase cannabis use following legalization for recreational use
52	Jason W. Busse	The effect of opioid schedule, formulation, rotation and tapering among patients with chronic non-cancer pain: A systematic review and meta-analysis
53	Jason W. Busse	Predictors of persistent post-surgical pain after total knee replacement: A systematic review and meta-analysis of observational studies
54	Jason W. Busse	The reporting of safety among drug systematic reviews was poor prior to the implementation of the PRISMA harms checklist
31	Dyana Castillo	Attachment Insecurity and Pain in Romantic Dyads: An Exploration of Actor and Partner Effects
58	Laila Chaudhry	The role of human chemosignals in eliciting a stress response
4	Amol Deshpande	Characteristics of Patients with Inflammatory Bowel Disease Using Cannabis (IBD) for Pain and Mood
102	Tania Di Renna	The TAPMI-ISAEC story: a tale of two Ministry funded programs
103	Tania Di Renna	Sleep Health and the Young Adult Pain Population: An interprofessional approach
97	Sherif Elsaraj	Association between fatigue, insomnia, obstructive sleep apnea and painful Temporomandibular Disorders (TMD): a case-control study.
42	Jennifer Fazzari	A Framework for Biomarkers in Pain Research
25	Daniel Flegg	Can sensitivity to physical activity predict objectively measured activity levels better than psychological factors?
74	Andrea Furlan	Informing an 'all hands on deck' approach to the opioid crisis: A review of strategies to prevent and reduce opioid-related harms
75	Andrea Furlan	Cannabis and the opioid crisis: Scoping the literature to understand the relationship between cannabis and opioid use.
15	Céline Gélinas	Pain assessment documentation in adult intensive care units: A lot of room for improvement!
37	Hannah Gennis	Does Sex Influence Pain-Related Treatment Effects of the ABCD's of Pain Management Psychoeducational Video?
35	Erika Gentile	The effects of exercise therapy on executive functioning in patients with chronic low back pain: preliminary results
65	Maxime St-Georges	The Global Biomechanical and Morphological Assessment: Understanding Back Pain in Adolescent Idiopathic Scoliosis
73	Nader Ghasemlou	Neuro-immune control of post-operative pain via CCR4
89	Shahrzad Ghazisaeidi	Characterization of key sexually dimorphic regulators in pain processing
2	Alexandra Gilbert	Pain Rating Concordance among Youth with Sickle Cell Disease and Their Caregivers
109	Katherine Halievski	Antibiotic treatment slows recovery of mechanical hypersensitivity for males but not females in an incision model of pain
32	Kathy Xie	Validation of the 13-item Pain Stages of Change Questionnaire (PSOCQ-13) in a pediatric chronic pain clinic

33	Cindy Li	Predictors of Patient Satisfaction in a four-week interdisciplinary Chronic Pain Management Program
26	David He	Non-Ionotropic NMDA receptor signaling mediates the reversal of hyperalgesia by spinal reconsolidation
90	Shaunattonie Henry	Innovation and Design of a Technology-Enabled Self-Management Curriculum to Support Pain Management and Recovery Following Cardiac Surgery.
81	Pamela Holens	A Patient Informed Qualitative Program Evaluation of an Internet-based Chronic Pain Treatment
88	Scott Holmes	Altered functional network configuration in persons with neuropathic pain: A resting-state fMRI analysis using graph theory
85	Richard Hovey	Reconceptualizing medical and research cultures with patients through a humanizing relational approach.
44	Jiale Hu	Validating Skin Conductance for Assessing Pain and Stress in Mechanically Ventilated Infants
23	Cheryl Hutflesz	Medical Cannabis Induced Acute Pancreatitis and Hyperemesis Syndrome in a Patient with Complex Regional Pain Syndrome
41	Jean-Luc Kaboré	Predictors of long-term opioid use in chronic non-cancer pain patients: A Quebec Pain Registry study.
36	Geoffrey Kerr	Investigating the relationship between diet-induced obesity, intervertebral disc degeneration and back pain
39	James S. Khan	The effect of smoking on patients attending a tertiary pain management center: a propensity-weighted analysis on the Collaborative Health Outcomes Information Registry
6	Andrew Koscielniak	Evaluation of a 6 week interprofessional collaborative chronic pain management program
106	Yesmine Krid	Acetaminophen does not potentiate the effect of conditioned pain modulation: results from a double-blind, randomized, crossover trial in healthy participants
38	Irina Kudrina	Lost for primary care. The lessons from the TRAST project. (TRAnSitional STructured chronic pain program for adolescents and young adults: TRAST project)
105	Yalinie Kulandaivelu	Examining the Development of a Community of Practice in Paediatric Project ECHO for Acute and Chronic Pain
16	Charlie Kwok	Characterisation of spinal sensorimotor circuit re-organisation following peripheral nerve injury
5	Anaïs Lacasse	Conducting gender-based analysis of existing databases when self-reported gender data are unavailable: The GENDER Index.
86	Salima S. J. Ladak	The Intersection of Pain and Addiction: Evolving Clinical Pathways of an Academic Health Science Centre to Provide Coordinated Patient Care
66	Melissa Richard-Lalonde	Sustainability of the CPOT use three and five years after its implementation in an adult Intensive Care Unit
101	Vered Valeria Latman	Reduction in Anger in Participants with Chronic Pain after a Mobile-based Mindfulness Intervention
47	Joyce Lee	Opioid Crisis Response: Buprenorphine/Naloxone Quality Improvement Projects in an Academic Tertiary Pain Clinic
83	Rachelle Lee	Effectiveness of MEDi® for the management of children's pain and fear during IV induction: Help from a humanoid robot
84	Rebecca Lewinson	Pain intensity ratings are altered by prior exposure to an unrelated numeric anchor
62	Lucas Lima	Urinary volatiles from pregnant mice produce stress-induced analgesia in male mice
56	Kevin Lister	Hypervigilance to Pain in the Laboratory Mouse
110	Samantha Locke	Spinal Inhibitory Synapse Loss in Arthritis via a Microglial-Complement Pathway
76	Natalia Lopez	Isolating brain regions implicated in the affective components of neuropathic pain.
11	Bryan MacLeod	Chronic Pain in High Frequency Users of the Thunder Bay Regional Health Sciences Centre Emergency Department
7	Angela Mailis	Community-based Pain Program funded by the Ontario Ministry of Health (MOHLTC): Demographics, Pain Characteristics and Outcomes
67	Michael McGillion	Performance metrics of a multimedia web-based platform for dissemination of knowledge about cardiac pain
99	Shokoufeh Modanloo	Online Parent-targeted Resources for Early Childhood Vaccination: A Cross-Canada Environmental Scan
82	Rachel Moline	Parent Emotional Presence during Child Pain: Examining Parent Emotion Regulation and Mindfulness during their Child's Cold Pressor Task
69	Milind M. Muley	Interleukin-1 is a Therapeutic Target of Pain Hypersensitivity in a Model of Non-compressive Disc Herniation
43	Jennifer V. Nash	Development of interdisciplinary pain education in an undergraduate health sciences program
64	Matilda E. Nowakowski	Impact of Pain Neuroscience Education on Pain Catastrophizing, Kinesiophobia, and Readiness for Self-Management: Preliminary Results
71	Monica O'Neill	Does parent sensitivity moderate the relationship between preschooler pain behaviour and preschool attachment status?
14	Carley Ouellette	"SMArTVIEW" remote monitoring and virtual recovery support: A novel approach to postoperative pain assessment and management
100	Tara Packham	Therapeutic interventions for acute pain after hand injury or surgery: An evidence synthesis overview
72	Monica Parry	Her Heart, Her Story: A Grassroots Approach to Understanding Cardiac Pain in Women with Arthritis
87	Sandra J. Poulson	Characterizing neuropathic and nociceptive pain in the African naked mole-rat (<i>Heterocephalus glaber</i>)
45	Jocelyn M Powers	Investigating the neural basis for music modulation of pain in the brain and brainstem using functional MRI
60	Lindsay Louise Richter	Investigating Canadian parents' knowledge and use of evidence-based pain management strategies for infants: an analysis of social media posts

61	Lindsay Richter	Investigating the consequences of living with a parent with chronic pain on their children: A qualitative study
57	Kevin Rod	Medical cannabis-opioid reduction program (MCORP): Results from 6-month longitudinal multi-disciplinary pain program
24	Christian Roehmer	Characterizing the Role of Haloperidol for Analgesia in the Emergency Department
12	Brittany N. Rosenbloom	Differential risk factors for functional disability versus pain interference one year after major pediatric major surgery
70	Monakshi Sawhney	Assessment of a Chronic Pain Clinic's compliance with guidelines on intrathecal therapy for the management of pain.
98	Shiva Shahiri	Exploration of the Nociception Level (NOL)™ Index for pain assessment during endotracheal suctioning in mechanically ventilated patients in the intensive care unit
93	Sarah Sheffe	Living in Charge: A Young Adult Pain Management Group Pilot
94	Sarah Sheffe	Evaluating the impact of a pain management group for individuals with neurological diagnoses and chronic pain - A pilot study
95	Sarah Sheffe	Growing Together: Development and Implementation of a Pediatric to Adult Transition Pathway in Chronic Pain Clinics across Ontario
1	Abhimanyu Sud	Realist review of multidisciplinary care for opioid dose reduction in patients with chronic non-cancer pain
49	Anna Taddio	How much does pain or fear of needles contribute to vaccine hesitancy in parents - a systematic review and meta-analysis
91	Shannon Tansley	Microglia-mediated removal of perineuronal nets contributes to the development of hypersensitivity in neuropathic pain models
92	Shannon Tansley	Characterizing Perineuronal Nets in the Dorsal Horn of the Spinal Cord
104	Xin Tong	A SERIOUS IMMERSIVE VIRTUAL REALITY GAME FOR PROMOTING CHRONIC ARTHRITIS PAIN PATIENTS' GENERAL PHYSICAL ACTIVITY AND RANGE OF MOTION
59	Leah Shafran Topaz	EEG-based functional connectivity - a possible biomarker for neuropathic pain in DPN
107	Zakir Uddin	A cumulative impact of psychological and sensitization risk factors on pain-related outcomes
46	Kate Wahl	Why is dyspareunia the "neglected symptom" of endometriosis? Unexpected insight from qualitative interviews.
27	David Walton	The Traumatic Injuries Distress Scale: Further Evaluation and Meaningful Thresholds for Predicting Pain and Functional Recovery after MSK Trauma
13	Calvin Wong	The role of mTORC2 in the peripheral nervous system in the development of chronic pain
10	Arthur Woznowski-Vu	PROSPECTIVE ANALYSIS OF SENSITIVITY TO PHYSICAL ACTIVITY AMONG ADULTS WITH RECENT ONSET LOW BACK PAIN
78	Noosha Yousefpour	A complement-microglia pathway drives spinal inhibitory synapse loss in neuropathic pain
63	Maham Zain	Stimulus Parameters Driving Dorsal Horn Wide Dynamic Range Neuron Responses to Mechanical Stimuli: A Systematic Review
80	Orit Zamir	Toronto Academic Pain Medicine Institute (TAPMI): Innovations in Psychosocial Program Recruitment & Delivery



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