



## **BACKGROUND**

The Canadian Chiropractic Research Foundation (CCRF) Research Chair in Spine Mechanics and Neurophysiology at the University of Guelph was first established in September of 2008. This position was made possible through the generous and collaborative support of the Ontario Chiropractic Association, the Canadian Chiropractic Research Foundation and the University of Guelph. Dr. John Z Srbely assumed the CCRF Chair in September of 2008 after successfully completing his PhD in biomechanics and neurophysiology at the University of Guelph in August 2008. He currently holds a faculty position at the rank of Assistant Professor in the Department of Human Health and Nutritional Sciences.

## **RESEARCH OVERVIEW**

Dr. Srbely's overall research interests lie in the investigation of the neurophysiologic mechanisms of pain, with specific interest in the study of chronic and myofascial pain. His primary goal as CCRF Research Chair in Spine Mechanics and Neurophysiology is to investigate and characterize the fundamental physiologic mechanisms of chiropractic SMT.

There are three central themes guiding his research:

- Elucidate the neurophysiologic mechanisms that are fundamental to the clinical expression of chronic and myofascial pain.
- Investigate the physiologic mechanisms of therapeutic interventions, such as SMT, in the management of pain (chronic, myofascial).
- Investigate the physiologic mechanisms of therapeutic interventions, such as SMT, in the potential management of *non-musculoskeletal (visceral)* conditions.

Elucidating these mechanisms will provide the scientific foundation to explain the musculoskeletal and non-musculoskeletal (visceral) impact of SMT. *His research is foundational to validating chiropractic in the treatment of pain as well as the promotion of health and wellness.*

## **BENEFITS OF THE CCRF CHAIR IN SPINE MECHANICS AND NEUROPHYSIOLOGY**

This strategic investment has provided many immediate, short term and long term returns to chiropractic research:

- **RESEARCH INFRASTRUCTURE**  
Immediate access to over \$1 million in state-of-the-art research infrastructure in biomechanics and neurophysiology at the University of Guelph. These facilities include a unique robotic platform employed in biomechanics research as well as a modern neurophysiology lab that has the capacity to perform highly specialized single nerve fiber recordings (microneurography). This facility provides chiropractic researchers an optimal environment to produce and publish high impact research to strengthen the evidence basis of chiropractic. Dr. Srbely has already published in high ranking neuroscience journals such as PAIN and JOURNAL OF PAIN and is heading seven research projects currently in progress.



- **RESEARCH COLLABORATION**

Increased opportunity for chiropractic researchers to foster interdisciplinary research collaborations with high profile researchers and academic institutions. These collaborations increase the scope and breadth of chiropractic research and introduce access to greater expertise and research infrastructure. Dr. Srbely has established research initiatives with internationally recognized researchers in leading institutions such as Massachusetts Institute of Technology, University of Guelph, University of Western Ontario, McMaster University and Canadian Memorial Chiropractic College. Interdisciplinary research such as this significantly enhances the value and credibility of chiropractors as experts in musculoskeletal health.

- **FUNDING OPPORTUNITIES**

Increased access for chiropractic researchers to seek out alternate/additional funding sources to support their research. During his first year as Chair, Dr. Srbely secured a prestigious New Investigator research grant as a Principal Investigator from the Canadian Arthritis Network (CAN), Network of Centres of Excellence (Government of Canada) in the amount of \$48,100 to investigate the mechanisms of pain in osteoarthritis. He is also the only chiropractic researcher (DC, PhD) holding the distinction of “Canadian Arthritis Network Investigator”. This honour is given to approximately 150 of Canada's leading researchers in arthritis and includes internationally-renowned scientists and specialists from a variety of disciplines (genetics, rheumatology, biomechanics, neuroscience, biochemistry). This acknowledgement of our expertise has significantly exposed and enhanced the profile of chiropractic research and provides an avenue for positive interprofessional collaboration.

- **CHIROPRACTIC AWARENESS IN UNIVERSITIES**

Exposure of chiropractic to the daily university setting/culture provides a forum for open dialogue between chiropractic and the scientific community facilitating better communication, enhanced interdisciplinary relationship-building opportunities and ultimately improved interprofessional cooperation. During his first year as faculty, he was featured in an article in the University of Guelph School newspaper “at Guelph” which positively discussed the CCRF Research Chair initiative and Dr. Srbely’s research goals. In addition, he was one of several faculty to speak at the “Make Your Mark in Research” lecture series where he discussed his career as a chiropractor and how this experience led him into research. Dr. Srbely also teaches a 4<sup>th</sup> year course entitled “Health and Injury Biomechanics” and supervises one thesis Masters student along with supervising several undergraduate research initiatives. The presence of chiropractic researchers such as this in teaching institutions of higher learning validates the expertise and credibility of chiropractic physicians in mainstream science.

#### **FACILITATE FUTURE CHIROPRACTIC RESEARCH**

The CCRF Chair in Spine Mechanics and Neurophysiology provides an avenue to train future chiropractic researchers in biomechanics and neurophysiology, in order to sustain the long-term viability of chiropractic research in these important and foundational disciplines.



## **FUTURE RESEARCH GOALS AND OBJECTIVES:**

Dr. Srbely's ongoing research pursuits include:

- Continue to investigate neurophysiologic mechanisms in the clinical expression of pain and pathology. These neural mechanisms form the physiologic rationale to justifying the effects of therapeutic modalities such as SMT in pain management.
- Investigate the physiologic impact of therapeutic interventions (such as SMT) on chronic and myofascial pain. *This is an important topic of research in the chiropractic paradigm that has immense implications in both chiropractic pain management as well as chiropractic health promotion.*
- Strive to increase the research presence of chiropractic in biomechanics and neurophysiology by continuing to develop intra, inter and transdisciplinary research collaborations. This is a significantly underserved area of research in our profession, yet a priority to the long term credibility and acceptance of chiropractic into mainstream healthcare.