**NEURONAL EXCITABILITY AND PAIN**

**Chair:** Michael Hildebrand  
**Session Length:** 90 minutes  
**Speakers:** Jason McDougall, PhD, Dalhousie University; Slobodan Todorovic, MD, PhD, University of Virginia School of Medicine; Michael Hildebrand, PhD, Carleton University

**SYMPOSIUM OBJECTIVES:**  
This session will highlight current research aimed at identifying the specific types of receptors and channels which play critical roles in shaping the excitability of nociceptors and dorsal horn neurons. We will discuss the molecular mechanisms whereby changes in receptor/channel activity result in increased neuronal activity and pathological pain. Finally, we will offer insights into how this knowledge could potentially lead to new molecular targets for the treatment of pain.

**Speaker 1 Title:** Pain signalling by proteolytic enzymes

**Speaker 2 Title:** Regulation of neuronal excitability of peripheral nociceptors via post-translational modification of voltage-gated calcium channels

**Speaker 3 Title:** Synaptic NMDA receptors in spinal mechanisms of pain processing

**Learning Objectives:**
1. To gain an appreciation of the diverse types of receptors and channels that regulate the excitability of peripheral nociceptors and central dorsal horn neurons, including proteinase-activated receptors, voltage-gated calcium channels, and synaptic NMDA receptors.
2. To understand how enhanced activation of these receptors and channels leads to neuronal hyperexcitability in models of inflammatory and neuropathic pain.
3. To gain insights into potential new therapeutic strategies for reversing pathological pain by targeting specific modulators of channel/receptor activity.

**REFERENCES:**