



Apr 8th, 9:00 AM - 10:00 AM

Frequency Effects on Behavioral Analysis Upon Spinal Cord Stimulation

Randi Wilson
Illinois Wesleyan University

Joseph Williams, Faculty Advisor
Illinois Wesleyan University

Follow this and additional works at: <https://digitalcommons.iwu.edu/jwprc>



Part of the [Psychology Commons](#)

Wilson, Randi and Williams, Faculty Advisor, Joseph, "Frequency Effects on Behavioral Analysis Upon Spinal Cord Stimulation" (2017). *John Wesley Powell Student Research Conference*. 1.

<https://digitalcommons.iwu.edu/jwprc/2017/posters/1>

This Event is protected by copyright and/or related rights. It has been brought to you by Digital Commons @ IWU with permission from the rights-holder(s). You are free to use this material in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/ or on the work itself. This material has been accepted for inclusion by faculty at The Ames Library at Illinois Wesleyan University. For more information, please contact digitalcommons@iwu.edu.

©Copyright is owned by the author of this document.

Poster Presentation P17

**FREQUENCY EFFECTS ON BEHAVIORAL ANALYSIS
UPON SPINAL CORD STIMULATION**

Randi Wilson and Joseph Williams*
Psychology Department, Illinois Wesleyan University

With an aging population, chronic pain has quickly become a world-wide epidemic. When traditional treatments, such as opioid medications, are not effective, spinal cord stimulation (SCS) can achieve a reported 50% reduction in pain scores. Low-frequency 50Hz SCS treatment has been used in patients since 1967, but carries a 30% failure rate. With the introduction of higher frequency SCS, better efficacy is being observed. In this study, the spared nerve injury model for neuropathic pain, involving transection of the sciatic nerve, was implemented in male Sprague-Dawley rats. Groups of animals were implanted epidurally with a stimulation lead connected to an external spinal cord stimulator. SCS was continuously applied for 42 hours. The study included six treatment groups (n=10) with varying stimulation frequencies and currents as well as control groups to account for lead implant, injury model and naïve animals (n=7). Behavior of pain-like behavior (hypersensitivity) was assessed before surgery (baseline), before treatment (5 days post-surgery) and after 24 and 42 hours of treatment. This poster will address whether varying stimulation parameters may optimize the efficacy of SCS in relieving chronic pain.

