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GOODMAN CAMPBELL
BRAIN AND SPINE

SEMINAR FOR NEUROTRAUMA AND DISEASES

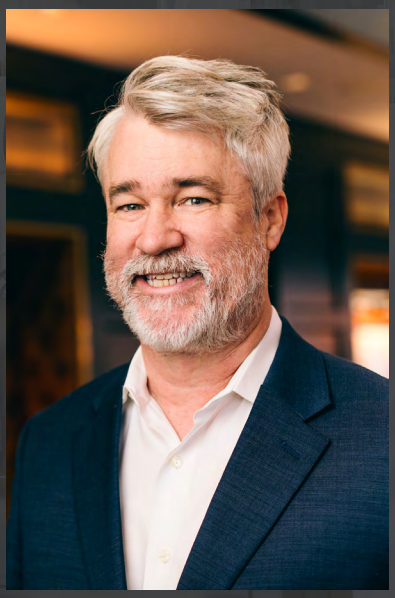
PRESENTS

MODELING PERSISTENT AND CHRONIC EFFECTS OF NEURODEVELOPMENTAL EXPOSURES IN HUMAN STEM CELLS DERIVED NEURONS

Date: April 30, 2025 **Time:** 4:00 PM-5:00 PM EDT

Location: DLR 131

FEATURED SPEAKER



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ABSTRACT

Persistent and chronic neurotoxicity can contribute to the development and progression of chronic neurodegenerative diseases and disorders. Environmental factors such as pesticides, heavy metals, and air pollution have been identified as significant contributors to the occurrence and progression of chronic neurological diseases and disorders. Pesticides, metals, and other pollutants are widely used in modern society for agricultural, industrial, and commercial purposes. However, exposure to these substances can lead to neurotoxic effects that persist over time, especially during conditions of chronic exposure. This talk will focus on the potential for persistent neurotoxic outcomes resulting from exposure to insecticides, heavy metals such as MeHg and manganese and, other toxicants. Further, evidence for the continued risk of such outcomes even after exposure has ceased will be discussed. The mechanisms of persistent neurotoxicity in pathophysiology of neurological diseases may be different than acute toxicity, and data examining this question will be presented. Thus, the talk will discuss the complexities of resolving such mechanisms and how they may or may not relate to mechanisms of acute neurotoxic exposures, which is crucial for the development of effective treatments and preventative strategies. The work presented utilizes in vitro hiPSC-derived neuronal cell models. With discussion of the potential for using hiPSC-derived neural cells to study the mechanisms of persistent and chronic neurotoxicity caused by MeHg and Mn. The talk will provide valuable insights into the potential mechanisms of persistent neurotoxicity resulting from exposure to various environmental toxicants for better understanding the pathophysiology of neurological diseases, which may advance the development of more effective prevention and intervention strategies to halt the progression of these diseases.