This week’s seminar virtual only. The following link can be used for the live stream. Authentication is not required. WALK 2007 Livestream

“Heavy Metal Roles in Brain Aging: Cr(VI) Neurotoxicity and Gerontogenicity”

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4:30-5:30 PM Eastern Time (US and Canada)

Abstract: Today our societies are challenged with the health burdens of environmental pollution and a rapidly aging population. Global lifespan is 30 years longer than it was 100 years ago, and 1 in 5 Americans will be geriatric by the year 2030. Given this prolonged aging combined with environmental exposures, we urgently need to understand (i) how environmental pollution affects an aged body differently from a younger body and (ii) how environmental pollution contributes to aging phenotypes. My research investigates the mechanisms of how heavy metals (e.g. chromium and cadmium) contribute to biological aging of the brain - that is, how they might act as gerontogens. Here, I present preliminary data using a rat model exposed to zinc chromate for 90 days via oropharyngeal aspiration. Chromate induced elevated yH2AX expression and foci formation in cellular nuclei of the brain. I propose chromate acts as a gerontogen by inducing persistent DNA damage in brain cells that leads to chromosomal instability, cellular senescence and biological aging of brain cells.

Host: Jason Cannon