Guest Lectures
RTG 2413

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>> Ovarian hormones impact the brain and its functions across the female lifespan: Peering back in order to look forward <<

Hosted by: Katharina Klinger

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Abstract

From early life through the transition to reproductive senescence and beyond, estrogens are potent modulators of the brain and behavior. Organizational, reorganizational, and activational hormonal events impact the trajectory of brain profiles during aging; this is true for both estrogens and progesterone, as well as their interactions. In fact, throughout the female lifespan, ovarian hormones activate brain substrates previously organized by estrogens, and estrogens can induce non-transient brain and behavior changes into adulthood. My talk will discuss this premise as a foundation of studying hormonal impacts on the brain and its functions in females across the lifespan. I will discuss how a “brain or behavior profile,” or a quantitative brain or behavior measurement for research purposes, is typically just a snapshot in time. However, in life, a brain and behavior profile is anything but static — it is in flux, variable, and dynamic. Akin to this, the only thing continuous and consistent about hormone exposures across a female's lifespan is that they are noncontinuous and inconsistent, building and rebuilding on past exposures to create a present brain and behavioral landscape. In females, hormonal variation is especially rich, and this is likely the destiny for maximal responsiveness in the female brain. As related to such, I will discuss evidence that exogenously-administered estrogens can bestow beneficial cognitive effects in some circumstances but not others, and that prior hormone exposures likely impact such responsiveness, especially when initiated in a window of opportunity such as the menopause transition. Both classic and contemporary research works regarding estrogen actions will frame the discussion, and provide context for exploring ways to extend hormone sensitivity and efficacy into post-menopause.

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