

Department of Molecular and Cellular Biology
Graduate Seminar MCB*7500

Friday, March 15, 2024 @ 12:45 p.m.

presented by:

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(Advisor: Dr. Nina Jones)

"Investigating the role of adaptor protein ShcD in adult neurogenesis and cognition"

Cell signaling is the foundation of biological responses such as cell proliferation, migration, and differentiation. Our protein of interest, ShcD, takes part in the signaling cascade of multiple pathways including ERK/MAPK downstream of receptor tyrosine kinases including neuronal TrkB. Since its identification in 2007, ShcD remains the least characterized of the Shc family with its function yet to be fully determined. While ShcD is expressed in various tissues, it is uniquely enriched in the brain, where its expression is highest in the olfactory bulb and hippocampus. In ShcD knockout mice, loss of ShcD results in altered olfactory bulb morphology and impaired olfaction as well as changes in ERK/MAPK and TrkB signaling. The olfactory bulb and dentate gyrus of the hippocampus are sites where new adult-born neurons are incorporated (neurogenesis), suggesting that ShcD may have a role in this process. Through this project, we aim to investigate the role of ShcD in adult neurogenesis and neural development by characterizing ShcD knockout mice.