

Department of Molecular and Cellular Biology
Graduate Seminar MCB*6500

Friday, June 2, 2017 in SSC 2315@ 12 noon



presented by:

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(Advisor: N. Jones)

“Molecular investigation of Dok1 and its influence on integrin/focal adhesion and nephrin signaling”

Kidney podocytes are an integral component of the glomerular filtration barrier as they are able to endure and adapt to environmental changes due to their unique cytoarchitecture. The glomerular filtration barrier relies on podocyte adhesion at cell signaling centres and with the extracellular matrix. Yet, the intricate mechanisms in which these signaling domains interact is still not fully understood. Understanding these pathways will give insight into the mechanisms of disease, and provide vital knowledge to develop targeted therapies to repair abnormalities in the filtration barrier to restore glomerular function. Nephrin, Nck1/2 and Integrin β 1 have been previously identified as key cytoskeletal adaptors and regulators of podocyte shape and function. Loss of these proteins results in profound defects in the filtration barrier that leads to podocyte collapse and glomerular disease. I propose to investigate and elucidate the molecular function of the potential Dok1/Nck signaling complex and its influence on integrin and nephrin signaling in podocyte structure and function.