Department of Molecular and Cellular Biology

Graduate Seminar MCB*6500

Friday, Oct. 13, 2017 in SSC 2315@ 12 noon

presented by:

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"Characterizing the mouse gut microbiota and developing an *in vitro* model of the mouse colon"

The human body is colonized by a vast number of microorganisms collectively referred to as the microbiota. In particular, the gastrointestinal tract is the most microbially dense site within the body, primarily composed of bacteria residing within the colon. Relationships between the gut microbiota and human host have been investigated in order to understand the dynamic and complex interactions between the two. Mouse models have allowed us to study these interactions. However, certain pitfalls arise when translating research results from mouse models to humans. The mouse gut microbiome is not completely characterized. As well, current mouse models fail to include the complexity and diversity within the mouse gut microbiota. Finally, research findings from mouse models cannot easily be translated to human diseases associated with the gut microbiome as the human and mouse gastrointestinal tract differ physiologically. This project will test the hypothesis that the mouse gut microbiome differs from the human gut microbiome taxonomically and will also differ from a metabolic standpoint. To characterize the mouse gut microbiota, a defined mouse-derived model microbiota will be created from male and female C57BL/6J mouse gut and fecal samples. The development of an *in vitro* model of the mouse colon, which mimics the mouse colonic environment, will assist in understanding diversity within the mouse gut microbiome. The *in vitro* model of the mouse colon will then be used to assess changes within microbial composition and/or abundance, as well as Short Chain Fatty Acid concentration after dietary perturbation.