BCHM 421/422 – 2020/2021

Project Outline: This project builds a recent finding from my lab identifying an unexpected expression pattern of microRNAs (miRNA) in cutaneous melanoma tumours. The Chromosome 19 miRNA cluster (C19MC) is normally expressed only in placenta and some stem cell populations. Our lab identified several melanoma cell models that express C19MC, and are preparing to study the function of C19MC miRNAs in the growth and invasion properties of these cell lines.

Supervisor: Andrew Craig

Project Title: A novel melanoma subtype defined by chromosome 19 miRNA cluster expression

Project Goals: 1) Test the effects of RNA-based C19MC inhibitors on melanoma cell growth and invasion, 2) Test for synergistic drug treatments to treat C19MC+ melanoma cells

Experimental Approaches: The student will learn how to culture melanoma cell lines, to safely prepare lentiviruses encoding C19MC inhibitors, and test their effects on cell growth and invasion into extracellular matrix. The student will also carry out dose response cytotoxicity testing of relevant small molecule inhibitors.

References:

1. https://www.ncbi.nlm.nih.gov/pubmed/29112174
2. https://www.ncbi.nlm.nih.gov/pubmed/31287992
3. https://www.ncbi.nlm.nih.gov/pubmed/29673952
4. https://www.ncbi.nlm.nih.gov/pubmed/29935234