BCHM 421/422 – 2018/2019

Project Outline: MicroRNAs (miRNAs) are small, non-coding RNAs that silence mRNAs to fine tune gene expression. Gain or loss of miRNAs have been reported in cancers at risk of spreading to other tissues (metastasis). Metastasis is a frequent problem in patients with malignant melanoma, leading to very low survival rates.

This project will use a combination of bioinformatics and wet lab research to identify miRNAs that are downregulated in melanomas, and are candidate tumour suppressor genes. The student will identify predicted target genes and pathways under control of these miRNAs. To build on these bioinformatics results, the student will select a subset of the miRNAs and restore expression in melanoma cell lines by transfection of miRNA mimics. The effects on melanoma cell growth, motility and gene expression will be profiled.

The student will gain valuable insights into cancer bioinformatics and molecular cell biology techniques and skills.

Supervisor: Andrew Craig, Cancer Research Institute Rm 315, andrew.craig@queensu.ca

Project Title: Defining targets of tumour suppressor microRNAs in malignant melanoma

Keywords (3-5):

Project Goals:

Experimental Approaches:

References: