

Accelerate Cluster: Allison Nixon, Megha Chandrashekhar, Jaspal Singh, Nicolas Yelle

Title: Targeting clonal heterogeneity in treatment-refractory Glioblastoma with novel and empiric immunotherapies

Executive Summary:

Glioblastoma (GBM) is the most common primary adult brain tumor, characterized by extensive cellular and genetic heterogeneity. Even with surgery, standard chemotherapy, and radiation, tumor recurrence and patient relapse are inevitable with a median survival rate of <15 months. The overall goal of this proposal is to identify new therapeutic targets that drive clonal evolution in treatment-refractory GBM, develop novel and empirical immunotherapies that harness the immune system and target specific cell surface receptors on GBM cells at the same time, and undertake preclinical evaluation of candidate therapeutic antibodies using our unique animal model of human GBM recurrence.

The interns in this proposed cluster will be involved in 1) tracking GBM cell populations to determine the intracellular pathways that drive relapse and 2) the development of novel biologics to target specific proteins in these pathways under the direction of Prof. Moffat (UofT) as well as 3) testing these in animal models in Prof. Singh's lab (McMaster).