1171-00-2 **Jasmine Foo***. *Spatial evolution and phenotypic switching in cancer.*

In this talk I will present two projects in cancer evolution. Cancer initiation, driven by the stochastic accumulation of oncogenic mutations and their subsequebt clonal expansions, is an evolutionary process that often occurs within the regulated spatial structure of an epithelial tissue. In the first part of the talk we will explore how the process of cancer initiation can be shaped by the spatial structure and maintenance dynamics of the tissue in which this process takes place. Specifically, how does spatial structure affect the timing, survival, and spread of advantageous oncogenic mutations, and how do these variations contribute to clinically-relevant differences in disease progression? In the second part of the talk, we will discuss the role of phenotypic switching in driving the development of drug resistance in cancer. We will apply a stochastic modeling framework to understand the development of resistance to chemotherapy in glioblastoma.

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