

Title: Modeling Diversity in Tumor Populations Through Branching Processes

Speaker: Kevin Leder

Abstract: In this talk I will discuss a branching process model developed to study intra-tumor diversity (i.e. the variation amongst the cells within a single tumor). In this model changes in cellular fitness due to mutations are modeled by a bounded continuous random variable, so that the branching process has a continuous type-space. In the asymptotic ($t \rightarrow \infty$) regime, we study the growth rates of the population as well as several ecological measures of diversity in the tumor. In the latter part of the talk I will discuss an application of this model to study the evolution of diverse drug-resistant populations in Chronic Myeloid Leukemia.