



BIOINFORMATICS SEMINAR

MICHAEL SAINT-ANTOINE

Graduate Student

UNIVERSITY OF DELAWARE

MODELING CELLULAR HETEROGENEITY: COMPUTATIONAL TOOLS AND APPLICATIONS IN CANCER RESEARCH

In clonal cell populations, cells can sometimes switch back and forth between different transient phenotypic states, due to patterns of gene regulation and stochastic variation in gene expression. This state-switching can be biologically relevant. For example, it was recently discovered that some cancer cells switch back and forth between drug-sensitive and drug-tolerant expression states, and become “locked in” to a state of permanent resistance upon exposure to the drug. In our research, we focus on two modeling goals related to this phenomenon. The first goal is to infer the structure of the underlying gene regulatory networks, using transcriptomic data. The second goal is to estimate the rates of switching between states, using data from a modified fluctuation test experiment.

BIOGRAPHY

Mike is originally from Pennsylvania. He earned his undergraduate degree in Economics from New York University, and is now pursuing a PhD in Bioinformatics Data Science at University of Delaware, working in Abhyudai Singh’s lab. His research focuses on modeling cellular heterogeneity, at both the gene network and cell population levels. Aside from his research, he is also a reservist in the Coast Guard, and enjoys playing guitar and reading about history.



CBCB SEMINAR

2/7/2022

3:30-4:30PM

***Reminder: the FIRST class of the semester will be virtual:**

via ZOOM:

<https://udel.zoom.us/j/93068494454>

(Passcode: BINF)

bioinformatics.udel.edu



College of Engineering
CENTER FOR BIOINFORMATICS &
COMPUTATIONAL BIOLOGY