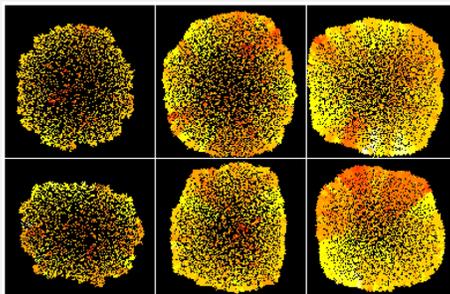
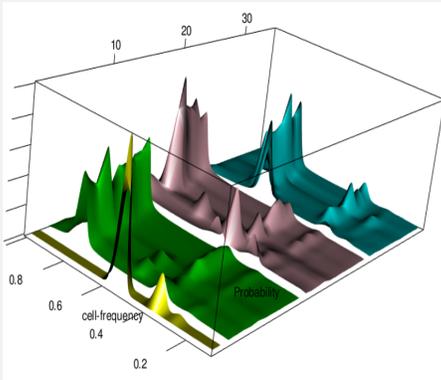


POSTDOCTORAL FELLOW IN MATHEMATICAL MODELING



Low energy High energy

Intratour heterogeneity — a game of snakes and ladders



Sequencing technologies have evolved to give us an unprecedented resolution on a tumor's clonal constitution. Yet what we see is only one, or at most a few snapshots in time. Inferring from this data, what factors govern the observed clonal composition and how it will change in the context of our interventions or the absence thereof, is a daunting task. We seek applications from individuals with a PhD in applied mathematics or physics to develop mathematical models that explain the extent of consilience among multiple perspectives on a tumor's clonal constitution. This project is part of our NIH-awarded K99/R00. Successful candidate will play a critical role leveraging in-house high-throughput single-cell DNA sequencing datasets, in conjunction with H&E imaging data, to generate testable hypotheses that guide future wetlab experiments. This person will be part of a cross-functional effort to inform therapeutic interventions that steer clonal interference into any therapeutically desirable direction.

Experience in designing testable mathematical models to evaluate competitive assumptions about reality is required. Ideal candidate has worked with both, top-down (ODEs, PDEs) and bottom-up approaches (e.g. lattice-gas CAs, off-lattice) and has experience in choosing the appropriate method for the task at hand. Strong quantitative skills and familiarity with statistical model selection techniques, such as Approximate Bayesian computation are also necessary. Successful candidate will work closely with machine learning specialist to perturb ecological balance and interfere with cycling fluctuations in the composition of a metapopulation.

Moffitt Cancer Center is the top-ranked NCI-designated comprehensive cancer center in the Southeastern US. The Integrated Mathematical Oncology department at Moffitt integrates mathematicians, computer scientists, and physicists together with evolutionary biologists, geneticist and imaging specialists as well as clinical and experimental oncologists to better understand, predict and treat cancer.

More information under cloneredesign.com.

Please send your CV and cover letter to noemi.andor@moffitt.org.