

Open ended problem:

I uploaded an open-ended problem on the Drive. These are simulations of attractive active particles going through complex environments (either a regular or disordered array of obstacles). This is to reproduce unpublished experiments where cancer cells were seeded through either environments, and we see that going through a disordered environment is enough to cause a transition from a collective to a single cell mode of migration (with a lot of cell detachments from the bulk).

The simulations reproduce this very well, but the open-ended question is why? What are the features (local and global) of disordered environment that cause the detachment?

There is a Jupyter notebook to load the simulation trajectories of either simulations. Everything is in the "Simulations_Collective_migration" zip file.