- We were able to simulate the bacterial network formation step using python and the networkx library
- We simulate bacterial cells and auto-inducers are the chemicals released by bacteria for quorum sensing
- Bacteria move towards higher concentration of auto-inducers in order to form a commune with other bacteria of the same species — when the number of bacterial cells in an environment exceeds certain threshold, all the cells will have common gene expression and behave the same with a defined goal.
- As Ryan mentioned, this is what we want, and hence this completes the first step before the bacteria start to interact with the T-cells
- We simulated different types bacteria, each with parameterized properties including
    - Their initial concentration
    - Their reproduction rate
    - Their speed of movement
    - How fast they form their network
    - How much AI they each generate
- We were able to see a direct correlation between the speed of movement, and their capped node degree and how fast they formed a network including all the nodes
- We were not able to see that much increase with AI generation after a few time steps since there is much more increase in AI concentration only once the bacterial concentration is high in a certain region, by which time the bacteria has already formed a major part of its network