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EECS 372

MAM

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Final Project Proposal

Overview:

For my final project, I would like to develop a NetLogo model that models the spread of specific sexually transmitted diseases (STI) based on the sexual orientations and behaviors of young adults. Additionally, I would like to make a HubNet activity that complements this model, by allowing users to choose their own sexual behaviors. In doing this project, I plan to build off of the existing Virus and AIDS models, in addition to a NetLogo model I created with Landon for DTTTL in Winter ’13.

Relevance:

In doing this project, I hope to convey a realistic sense of how easily STIs can be transmitted throughout an entire population, especially one of sexually active young adults. Though I hope the model itself would convey sufficient information, I think that by including a HubNet component where agents choose their actions rather than them being based on rules, users of the model would more easily be able to relate the results to themselves and their own lifestyle, rather than providing an excuse about being more responsible than a bunch of numbers and sliders dictate for a turtle’s rules.

Potential implementation:

I will create male and female turtles of different sexual orientations. Turtles will move about randomly mostly within a specified area, in order to try to recreate circles of friends or divisions in populations. If two turtles of the right gender/orientation matchup meet with one another (on the same patch), there is a probability that they will mate. If they mate, there is also a probability that they will use a form of protection. If they use protection, there is also a probability of using it correctly. With protection, it is assumed that the disease will not be passed on – otherwise, there is a probability it will be passed to the partner agent. Depending on the disease, and whether an agent is male or female, the agent will feel symptoms. I will assume that if the agent detects symptoms, they get checked by a doctor and once diagnosed, are gradually cured of the infection. Additionally, there is a chance that a turtle will randomly get tested, despite whether they are currently symptomatic. I hope to back up these sliders with ranges based on data from a relevant American population.

For the HubNet model, agents will get to choose whether or not to mate and whether or not to use protection, but they will not have control over the other factors.