Math 4MB3 Project Notebook 2019

Siddharth Reed (The Plague Doctors)

March 27, 2019 @ 9:47

Wednesday 13 March 2019

Group Meeting
Approximate Duration: 1 Hour

- Decided to work on project 2.4, discussed the project and what disease we should be looking at

Friday 15 March 2019

Work Alone
Approximate Duration: 2 Hours

- Investigating possible diseases to focus the project on, mostly reading papers.

Monday 18 March 2019

Group Meeting
Approximate Duration: 4 Hours

- Decided to investigate cholera
- Started investigating models of cholera, treatment methods for cholera (modern and old), biology of Cholera, transmission dynamics
- Decided to look into spatial modelling, after learning water highly important for the spread of cholera

Work Alone
Approximate Duration: 6 Hours

- Writing R code for spatial model of Cholera transmission
- Working on having 'wells' as sources of infection, in specific patches
- Started investigating models of cholera, treatment methods for cholera (modern and old), biology of Cholera, transmission dynamics
- Surveying literature for spatial models of cholera

Tuesday 19 March 2019

Work Alone
Approximate Duration: 6 Hour

- Still working on spatial code with wells
- adding neighbour infection transmission
- writing plotting code

Wednesday 20 March 2019

Group Meeting
Approximate Duration: 4 Hour

- Specifying model construction, what dynamics we are considering
- Finding paramater estimates in the literature
- Writing biological background information
- Deciding to explore different treatment strategies and their effectiness and how to tailor them to the spatial case

Work Alone
Approximate Duration: 3 Hour

- compiling references in latex
- Still finalizing, fixing bugs in the spatial code
- Preliminary report formatting, organizing into section files

Thursday 21 March 2019

Work Alone
Approximate Duration: 2 Hours

- Reviewing some literature to better understand the SIRW model
- fixing bugs in the spatial code, adding plotting code

Monday 25 March 2019

Group Meeting
Approximate Duration: 2 Hours

- Adding SI_hI_lRW model description
- adding mathematical descriptions of treatment strategies to compare
- Decide to use final size, peak incidence, time to peak incidence (not necessairily all) as metrics to compare treatment strategies

Work Alone
Approximate Duration: 5 Hours

- Rewrote spatial code to work with continuous model, and better reflect singlepatch model
- write code for single patch model and plotting

Tuesday 26 March 2019

Work Alone
Approximate Duration: 13 Hour

- formattig report (line numbers, worcount script, knitpdf script, references, README, etc.)
- finish redone spatial code and plotting code
- Finish single patch simulation and plottig code
- Editing of other sections
- Writing up multipatch model description
- reorganized git repo to be easier to find/modify things

Total time spent on this project

Group work: 11 hours *Solo work:* 37 hours