Math 490 Capstone Weekly Report Week Number: 3

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My goals for this week were to:

1. Get to grips with the AlgebraicDynamics.jl Julia library.
2. Code up a simulation of a type-1 coherent feed forward loop using lenses and based on the specs from "An Introduction to Systems Biology: Design Principles of Biological Circuit."
3. Figure out what larger system I want to simulate for the case study.
4. Code the simulation for it.

I made the following progress on these:

I finished all of my goals. Once you get used to it, simulating is really easy with this process, which is good because otherwise what's the point? For my larger system I'm simulating the multi-output feed forward loop that governs the production of a flagella motor in *e. coli* bacteria.

I have the following questions and concerns I want to discuss with my capstone advisor:

I don't have any questions or concerns this week.

Some tentative goals for the coming week are:

1. Create/find visuals for the multi-output FFL and the flagella motor: graphs of the simulation results, visual of process and/or actual flagella motor.
2. Type up rough draft of the case study portion of my paper.
3. Create rough draft of the case study portion of my presentation.