BIOS 391, Independent Study (1 credit, pass/fail)

Exploring agent-based modeling

Taught by Dr. Emily Minor

In semesters when there is sufficient student interest (approximately once per year), I will be offering this one-credit course for students to learn about agent-based modeling. Agent-based modeling is a really cool method of simulating ecological systems that allows researchers to create all kinds of 'experiments' (in silico) that we couldn't actually do in the field. It is also used in a wide variety of other fields, including social sciences.

We will use the freely-available software Netlogo, which can be downloaded here https://ccl.northwestern.edu/netlogo/. Students should download the software to their computer.

What to expect:

We will meet approximately every other week for 1 hour. We will select a meeting time that works for all students; meetings may be remote (by Zoom) if that works best for everyone. In between meetings, students will be assigned readings, tutorials, and coding exercises. Expect to spend up to 5 hours on assignments each week outside of class.

We will learn about the kinds of topics and research questions that can be explored with agent-based models and learn some basic coding skills. By the end of the semester, students will identify their own research questions and write a simple model to study the question.

To pass the class, students must complete all readings and assignments, including writing their own (very simple) model. As we will only meet approximately seven times during the semester, students are expected to attend all meetings.

To register for the class, you must first get approval from the instructor (Dr. Emily Minor). Then you can download the application from this web site https://bios.uic.edu/academics/undergraduate-studies/bios-391-independent-study/, complete the application, and send it to Emily to sign. The next step is to deliver the application to the Biology Advisors. They will then give you permission to register.