ECO 581
Agent Based Modeling

Students are requested to bring laptops to class.
For further information, and permission to sign up, email: timothy.waring@maine.edu

Fall 2014 201 Winslow Hall
Monday: 4:10 – 6:40pm Instructor: Tim Waring

Agent-based modeling is a powerful scientific method useful in any field.

Agent-based models are used in a wide range of scientific fields (economics, anthropology, biology, physics, engineering, sociology, ecology), but they are complex and challenging to build, analyze, and articulate. This skills-based course uses an intensive workshop format to provide significant experience with building, analyzing and explaining agent-based models, and prepares students to use and critique these models in their own work. Students will work in the open-source modeling language called NetLogo to build, over the semester novel student-authored models. Students are strongly encouraged to build models relevant to their own research, a specific complex systems context, or to research conducted on campus.

Weekly Schedule
(Subject to revision)

Week	Lecture	Workshop
1	Introduction	Getting to know NetLogo: the basics
2	ABM Design	Second date with NetLogo: language
3	Emergence	Purposive Model Design
4	Individual Behavior	Model draft version 1
5	Norms & Rationality	Peer Coding
6	Evolution of Culture	Model draft version 2
7	Evolution of Cooperation	Model swap & Code Critique
8	Organizational Behavior	Revisions
9	Measuring Emergence	Document models with ODD
10	Analysis Methods	Revisions
11	Workshop	Model swap & Code Critique
12	Workshop	Final model draft
13	Student model presentations	Student model presentations
14	Student model presentations	Instructor model presentation
15	Round up	Code Off! Upload Models