PREPARATION INFORMATION
Agent-Based Modeling Workshop:
NetLogo Section
August 7th, 2009

This information sheet and questionnaire is intended to prepare you for participation in the NetLogo workshop that is being held as part of Agent-Based Modeling Workshop at the AOM. The NetLogo section of this workshop will focus on Building an Agent-Based Model using the NetLogo tool and will be led by William Rand, an assistant professor from the University of Maryland who works with the NetLogo development team at Northwestern University led by Uri Wilensky. In order for us to "hit the ground running", we ask that you look over the material below.

Downloading

Before the workshop please download the NetLogo modeling environment from the Center for Connected Learning and Computer-Based Modeling at: http://ccl.northwestern.edu/netlogo/. Click on the "Download" link and from there follow the directions to install NetLogo on your machine. Version 4.0.4 is what we will be using during the workshop.

Tutorials

In order to familiarize yourself with the tools, there are some basic NetLogo tutorials for you to use. We ***strongly*** recommend this practice in advance in order to get the most out of the workshop experience. The tutorials take a couple of hours but will give you the skills you need to make the most out of the workshop. To access these tutorials:

1. Start up NetLogo 4.0.2, and click on "Help" in the menu bar.
2. Then choose "User Manual".
3. Once the User Manual loads up in your browser, you will see three tutorials listed on the left-hand side under "Learning NetLogo."

If you have any questions with any of this or need help, please email feedback@ccl.northwestern.edu.

Questionnaire

Unfortunately due to time constraints we will not have enough time to fully develop your own models, but hope that you can learn some of the basics of model develop from the presentation. For your own use, we include a questionnaire that we usually distribute to individuals interested in constructing their own models. It will help you think through a complex phenomenon that you are interested in modeling.

Model Questionnaire

Modeling, particularly agent-based modeling is particularly useful in helping you frame and solve issues that have a large number of interacting entities and complex processes, and thus the result is highly unpredictable. In this section we will provide you with some criteria to help in selecting a particular phenomenon to examine. We will be sharing more about the value of ABM at the opening of the session but want you to be able to choose a complex but approachable phenomenon that will particularly benefit from ABM. Note that we are purposely using the language of complexity science and agent based modeling in this worksheet (e.g., agents) so you can become more and more familiar with what makes a complexity science approach different from other, perhaps more common or traditional approaches.

These questions are intended to focus your thoughts on a phenomenon for which you would eventually like to build an ABM model. Though we will not have time during the workshop to do much development of your model, we feel that having a particular phenomenon in mind that you would like to model will help you to focus your efforts during the workshop. It is important to choose a phenomenon of limited scope so that you can make progress with your model. Even if the phenomenon you would eventually like to address is large in scope, try to choose a sub-part of it as a starting point.

Please return this questionnaire by the beginning of the workshop, either by *emailing* it to

ccl-workshops@ccl.northwestern.edu or *handing it to the instructors*.

(1) What part of your phenomenon would you like to build a model of?

(2) What are the principal types of agents involved in this phenomenon?

(3) What properties do these agents have (describe by agent type)?

(4) What actions (or behaviors) can these agents take (describe by agent type)?

(5) If the agents have goals, what are their goals (describe by agent type)?

(6) In what kind of environment do these agents operate?

(7) How do these agents interact with this environment?

(8) If you had to “discretize” the phenomenon into time steps, what events and in what order would occur during any one time step?

(9) What do you hope to observe from this model?

Thank you in advance for your time and effort on these questionnaires. We look forward to seeing you soon.