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# Introduction to NetLogo and agent-based models of networks

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## Abstract

**Workshop Length:** 2 sessions of 3 hours each. Participants may choose to register only for the first session (for novices), only for the second session (for beginners with some prior knowledge of agent-based models), or both.

**Attendance Limit:** none.

### Description:

There is a growing interest in the economic and social sciences for agent-based models, a computer simulation technique which represents socio-economic processes as open-ended dynamic systems of interacting agents. They can support both theory-building and empirical analyses, and are particularly well-suited to study complex and multi-faceted phenomena that standard social science methods struggle to comprehend, from financial crises to traffic congestion, the rise of extremism, and urban riots. Interestingly, the dynamics of social network effects can be explored in depth with agent-based models.

This workshop aims to introduce the potential of agent-based models, for the social sciences in general and for social network analysis in particular. It provides participants with basic knowledge of the simulation methodology and insight into the design and analysis of computer experiments. NetLogo, the software that is introduced in this workshop, is a widely used package that provides tools to build models; run experiments; produce, store and analyze simulated data. Participants will have the opportunity to explore NetLogo's functionalities by working on different versions of a model. They will gain hands-on experience on how to modify existing models in the NetLogo library, and will understand the basic steps towards writing their own model from scratch.

Participants are not assumed to have any preliminary knowledge of computer simulation or agent-based models.

Participants are advised to bring their laptops, on which they will have downloaded the NetLogo package and the User's manual. Both are available freely from <https://ccl.northwestern.edu/netlogo/>

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