

## 2017 WAURISA workshop proposal

Workshop title: Geosimulation and agent based modeling

Instructor: Eugene Martin, UW Geography. [gene@genemartin.us](mailto:gene@genemartin.us)

Limit: 30 people – bring your own laptop

Instructor Bio: Eugene Martin is GIS academic and professional consultant. He holds a BS in forestry (UVM '89), an masters in geography (UW '99) and is a Ph.C. in geography at UW (expected 2017). He was founder and senior tech analyst at CommEnSpace 1999-2003. From 2009-2014 Eugene was on the geography/geology faculty at the University of Wisconsin Stevens Point where he offered upper level undergraduate and graduate level GIS courses on environmental modeling, database design, Python and sustainability applications. Currently he's completing his dissertation *GIS Ecologies of knowledge production* and is an instructor for the UW Master of GIS for Sustainability Management program.

Workshop description: This workshop is an introduction to geosimulation and agent based modeling (ABM) featuring NetLogo, a free, simple and mature multi-agent modeling environment. Introduction discussions establish the foundation principles of agent based modeling and applications. Afterward the workshop is hands-on demonstrations and exercises building and using simple agent based models. NetLogo includes a GIS extension and integration of spatial data with ArcGIS will be demonstrated. These agent based challenges will be considered: cellular automata and landscape change, population flocking/clustering, ecological individual based behavior, pedestrian flows, pattern recognition and flooding. Participants will receive a reading packet of articles and chapters and all the models featured in the workshop.

Intended audience: Everyone with a comfortable grasp of GIS fundamentals and are unafraid of trying something new will enjoy this workshop. Interest or some experience with programming is encouraged.

Learning outcomes: After attending this workshop you will be familiar with the challenges and common applications of geosimulation and agent based models. You will know the model design work flow and how to use a model to test assumptions / hypotheses. You will be able to create, modify and run simple models in NetLogo and access/publish models from the NetLogo commons.