Irene A. Lee,
c/o Santa Fe Institute
1399 Hyde Park Road
Santa Fe, NM 87501

Field: Complex Systems, Math and Science education.
Areas of expertise: computer graphics and animation, agent-based modeling,
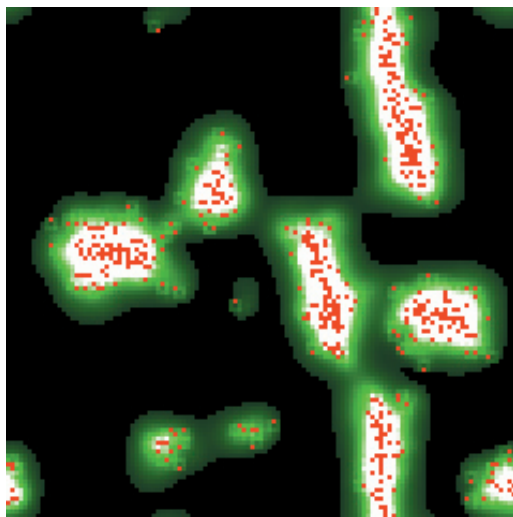   algorithm animation, and design science.

General question:

How to analyze the visualizations / simulations of the interactions of agents in complex systems models.
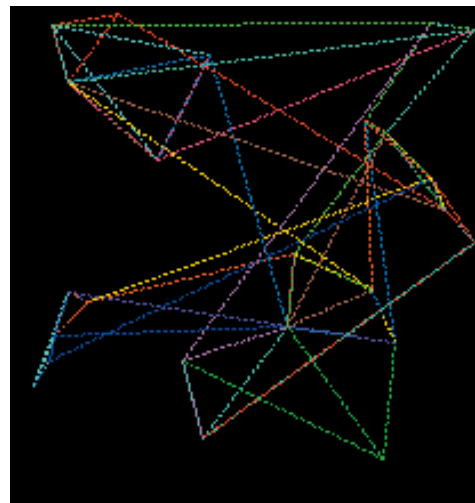
Specific questions:

1. How does one measure the degree of pattern formation in a still image or time sequence of images (animation)? Could one measure the degree of patchiness? cohesiveness? randomness?

2. If both a regular pattern and a random pattern are of "low complexity", when is an image at its highest complexity?

3. Abstracting the image or animation away from the underlying model, what can we say about the image? What can we say about the model that produced it?   How are we able to say it?

A STILL IMAGE

A PROBLEMATIC IMAGE

The graph on the right is a frame from a simulation of a social network. It is difficult to represent the spread of ideas through the network over time.