Some ideas for the final project. (Feel free to propose your own too!)

- Neuronal networks (see Chapter 6, but there are many other references too), or other models in neuroscience.
- Modeling of metabolic pathways using linear algebra (see Chapter 8).
- Cellular automata (CA). This is a broad topic; here are some subtopics:
  - Elementary cellular automata (there are 256 ECA rules).
  - Some of the more widely-studied ECA rules (e.g., 30, 110).
  - Cellular automata in nature.
  - Langton's loops – a "species" of artificial life within a cellular automaton.
  - Stephen Wolfram's book *A New Kind of Science*.
- Design an experiment in NetLogo. See how the dynamic behavior of an agent based system depends on certain parameters. This may involve existing parameters, or new ones can be programmed.
- Mathematical modeling in sports. (Also see the Carolinas Sports Analytics Meeting at Furman on April 13th `http://math.furman.edu/csam/`.)
- Phylogenetic or evolutionary trees.
- Food web networks in evolutionary biology.
- Mendelian genetics.
- Petri nets – a mathematical framework for distributed computing systems.
- Bayesian network – describes conditional dependencies of random variables using a directed acyclic graph.