# Final Projects Discussion
# CS289

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# Final Projects

- **Key point**
  - Explore an interest/idea in more depth
  - How to convert an *interest* into a "doable" short project
  - Read the GUIDELINES on the website

- **Picking a Topic**
  - Theory, Algorithms, Models, Applications, etc.
  - In all cases, this is "practice" for conducting real research:
  - Part of the exercise is to formulate reasonable size projects for yourself: you propose what you will do, what you will deliver, how you will evaluate it.
  - *Grad Students:* Pick something enhances your primary research.
  - *Undergrads:* Start EARLY (Grad class, not like a basic final project)

- **Picking a partner**
  - Projects should be done in pairs.
  - We will do introductions in class today
  - Emails and other info available on final project discussion thread
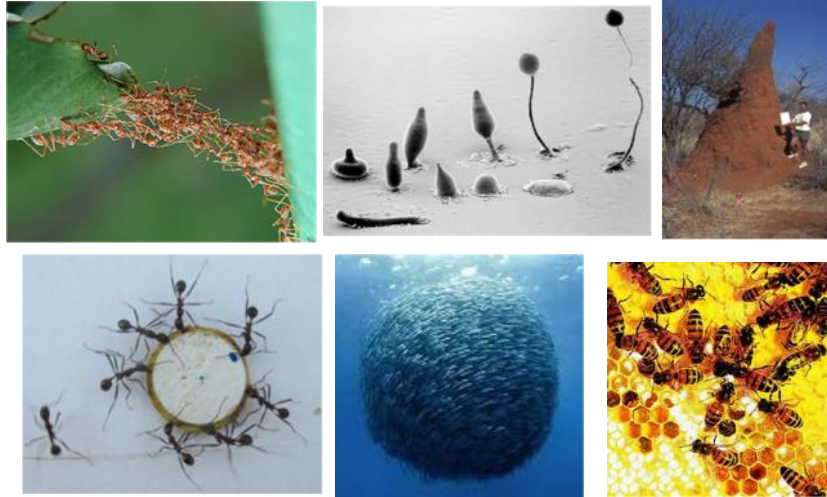
# Logistics

- **Project proposal due Nov 4**
  - **Nov 4 (Monday): Project proposal due.**
  - Meeting to discuss with me beforehand (Mon Oct 28th)
  - Nov 20 & 22: Project progress presentations
                    (last week of class)
  - Dec 9 (Monday): Final paper is due
    One month to complete your project

- **Meetings**
  - Googledoc to sign up (will send in announcement)


# Proposal

- **Writing a Proposal (due Nov 4)**
  - Submit a ~5 page proposal on your class project
  - Submissions should be in **PDF** (see guidelines, examples)

- **Your proposal should contain**
  - Your and your partner's names
  - A 1 page description of the problem and its significance
  - A description of background and related work
  - A plan of execution, along with a list of weekly milestones
  - A short bibliography

- **Couple of things to think about**
  - Feel free to set milestones that come with the caveat "if all goes well up to this point, then …"
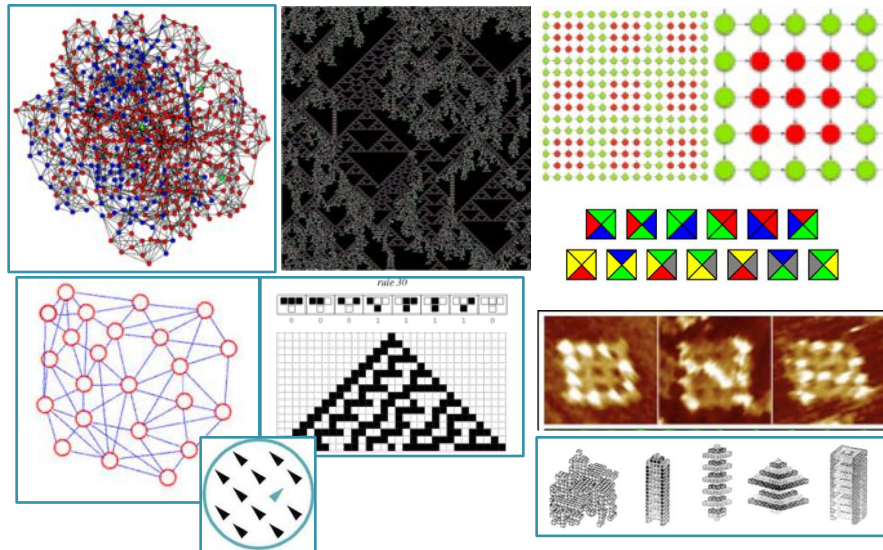  - Make sure that you build in evaluation points into your milestones, how will you evaluate intermediate steps?

# Examples: Models of Biology

# Examples: Algorithms and Applications

# Examples: Theory



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- **Simulators**
  - Netlogo, ARGOS, BlueSwarm (Florian), KiloSim (Julia Ebert)

# Presenter Days

- Upcoming Schedule:
  - Next 4 lectures: *Evolutionary Computing*
  - Presenter Days: *Human Collectives*

- **How it works:**
  - Two paper topics per lecture (prep 30 min each)
  - 2-3 students together present a paper topic
  - *Your job: extra reading for context, engaging/informative*
  - *Everyone else: No reviews/reading (work on final projects!)*

# Presenter Day Slots

- Sign up:
  - 2 People present a paper together (some 3s)
  - See website for paper details

- Schedule:
  - Nov 6 Paper 1:  Small-world self-organized networks
  - Nov 6 Paper 2:  Scale-free self-organized  networks
  - Nov 8 Paper 1: Human collectives solving problems
  - Nov 8 Paper 2: Human collectives solving problems
  - Nov 13 Paper 1: Role of diversity in problem solving
  - Nov 13 Paper 2: Measuring collective intelligence
  - Nov 15 Paper 1: Evolution of altruism
  - Nov 15 Paper 2: Altruism in human groups

# Self-Organization!

- **Introduce yourself**
  - Name, Grad/Undergrad, Research area
  - General area you'd like to do a final project in
    - and one sentence description if you already have a project in mind

- Self-organize groups
  - Talk to people with like-minded interests

- Sign up for presenter slots