# Resource Management in Wireless Networks

- The goal is to begin an original work that will ultimately result in a conference (or even journal!) paper.

- There is absolutely nothing wrong with using this course project to further your own research goals.

- You cannot however turn in the same course project for two different classes, unless having permission from both instructors ahead of time. Otherwise this is a serious academic violation.
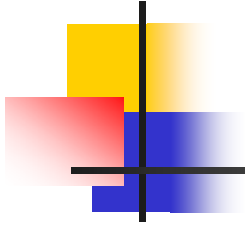
- **A project proposal is due in March 23rd, 2008**
  - This should consist of
    - a tentative title for your project,
    - and a clear and brief description of what you intend to investigate,
    - and what you hope to discover or accomplish.
  - This description should be as specific and concise as possible and about a page
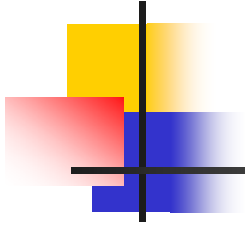
- The proposal should lay out aggressive goals, and state which ones will definitely be accomplished, which ones may be accomplished if things go well, and then what will be left for future research after the course ends.
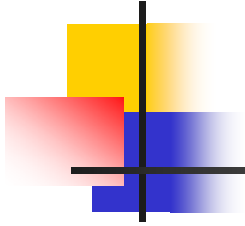
- The project report should be roughly in the format of an IEEE conference/journal paper.
- There should be an abstract, conclusions, and thorough references, along with supporting sections clearly describing your methodology, analysis, simulations, and results.

Project Grading Breakdown

- **Proposal (15 points) due March 23th, 2008**:
    - Clarity of objectives, ambitious but achievable objectives
    - Relevance of proposed research
    - Appropriateness of cited literature.
- **Progress Report (15 points) due May 11th, 2008**:
    - up-to-date achievements (i.e. preliminary design, code, results, etc.)
- **Final Report (70 points) due June 3rd, 2008:**
    - Originality (15 pts)
    - Organization (10 pts)
    - Writing style, grammar, readability (15 pts):
        - Proofread, proofread, proofread,
        - Most papers are accepted or rejected based on a reading of the abstract, introduction, conclusions, and references).
    - Technical Content and Execution (25 pts):
    - References (10 pts):
        - Proper IEEE reference style, all relevant research cited, no frivolous citations, good discussion of previous state-of-the-art?
    - Oral Presentation (10 pts)

Some Potential Project Ideas and Areas

- Bio-Inspired Computing and Communication in Wireless Ad Hoc and Sensor Networks
- Collaboration, Cross-layer design and Optimization for Multimedia Communications
- Cognitive radio (IEEE 802.22) -enabled wireless mesh networks
- Cooperation and Game-Theoretical Protocols for Cognitive Radios
- Radio resource management under opportunistic spectrum sharing/mobility
- Handoff / mobility management and seamless internetworking and wireless QoS Provisioning
- RRM fairness: problem definition and solution techniques
- Fairness performance in emerging wireless systems (WiMAX, ad hoc networks, mesh networks