The presenters envision a new curriculum for Bioengineering. The flagship course is the Pratt School’s Intro to Biologically Inspired Materials (ME/BME 265). Its teaching and learning philosophy is experiential, real-life-project-based, and student-driven. The course begins with a series of lectures to show students how to reverse engineer “problems nature solved,” and “problems nature HAS.” Students form design groups to map engineering onto their own interests in Biology, on which they report at the end of the semester. The faculty serve as project mentors and expert advisors to the groups. This semester, the faculty lead is off-site in California during the latter weeks of the semester, but remains in contact with the students using videoconferencing technology which will be demonstrated at the Showcase.

**OVERVIEW**

**TECHNOLOGY USED**
- Polycom (videoconferencing)
- Blackboard
- BME Scheduler: Advising Sign up
- Tandberg Desk Top Video Conferencing Unit MPX1000
- SKYPE

**SPONSORS**
- ME/BME 265 was funded out of an NSF training program IGERT
- Dept of Biomedical Engineering
- Pratt School of Engineering, Dean of Education (Tod Laursen)
- Center for Instructional Technology

**OUTCOMES**
- Students report finding the class more interesting than a traditional chalk-talk teaching class focused primarily on memorization for quizzes and exams
- Enrollment especially in UG BME has increased rapidly (13 in 2003; 37 in 2004; 144 in 2005)
- Students able to produce scientifically sophisticated presentations, and discuss questions with world experts

We call our teaching and learning philosophy "EDUK," which stands for "Experiment - Discovery - Uncovery - Knowledge." Students learn through repetitive exposure how to use this cycle themselves, enabling them to approach any problem with methodology and confidence.

David Needham