PEDAGOGY SEMINAR and LUNCH
Monday, May 3rd from Noon to 1 p.m.

The Student-Centered Active Learning Environment for Undergraduate Programs Project (SCALE-UP)

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How do you keep a classroom of 100 undergraduates actively learning? Can students practice communication and teamwork skills in a large class? How do you boost the performance of underrepresented groups? The Student-Centered Active Learning Environment for Undergraduate Programs (SCALE-UP) Project has addressed these concerns. The room design and pedagogy have been adopted at more than 100 leading institutions across the country. Physics, chemistry, math, astronomy, biology, engineering, earth sciences, and even literature classes are currently being taught this way.

We promote active learning in a redesigned classroom for 100 students or more. Class time is spent primarily on “tangibles” and “ponderables” — hands-on activities, simulations, and interesting questions. Nine students sit in three teams at round tables. Instructors circulate and engage in Socratic dialogues. The setting looks like a banquet hall, with lively interactions nearly all the time. Our rigorous assessment effort have found that benefits include to reductions in female and minority failure rates, success in later engineering courses, and significant improvements in conceptual learning and problem solving.

In this talk I will briefly discuss the classroom environment, describe some of the activities, and review the findings of studies of learning in various SCALE-UP settings.

This project has been generously supported by the U.S. Department of Education’s FIPSE program and the National Science Foundation’s CCLI program.

As a member of the Physics Education R & D Group, Dr. Beichner's research focuses on increasing our understanding of student learning and the improvement of physics education. He is the founding editor of the APS journal Physical Review Special Topics: Physics Education Research. For his education reform efforts he was named the 2009 North Carolina Professor of the Year and the 2010 National Undergraduate Science Teacher of the Year. Since 2007 he has been the Director of NC State's STEM Education Initiative, with a mission to study and improve STEM (Science, Technology, Engineering and Math) education from "K to Gray" in North Carolina and around the world.

Co-Sponsored by the Physics Department and the Center for Engineering Education