Open Classrooms and Conversations
Pilot Program, Spring 2013

Faculty: Daryl Pedigo
Title: Principal Lecturer
Department: Physics

What You’ll See in My Classroom:
- Use of clickers to foster interaction and gather information
- Demonstrations, problem solving, and discussion of results
- Topics and treatment selected to be mostly understandable by those with limited science backgrounds (images formed by pinholes, lenses and mirrors, plus interference of light)

Science, arts and humanities faculty are welcome

Course: PHYS 123: Oscillations, Waves and Modern Physics
Description: Third quarter of engineering physics (but do not let that scare you off—no calculus needed during the selected days)
Population: Primarily sophomore engineering students and other undergraduate science majors
Days: MWF
Time: either 9:30-10:20 or 10:30 – 11:20 am, back-to-back repeat lectures
Room: PAA A102, the large lecture hall in the physics-astronomy lecture wing

 Observation: April 26, April 29, May 1, May 3, May 6 (May 8 is review day), May 10
Follow up: To be arranged, mid-to-late May, Tuesday and Thursday afternoons are best for me, will set up a Doddle poll for participants to select a time.

Teaching philosophy: Teaching means providing whatever students need to help them learn, which translates to different techniques for different courses and student populations. For introductory physics courses in particular, more than two decades of physics education research has indicated that traditional lecturing does not lead to significant learning gains, especially for conceptual understanding. Thus it is important to do something other than traditional lecturing if conceptual gains are important. My introductory physics courses use online assignments due before class as a way of “forcing” students to “read the book” before coming to lecture. This means that students already have some familiarity with the material, not every topic must be “covered”, and class time can be used for discussions, demonstrations, problem solving, or alternative perspectives on the same material. My lectures are “chunked” into 5 to 15 minute segments, separated by demonstrations or clicker questions (usually both). Most days one or more chunks are devoted to more active learning in the form of real-life problems that students must solve in class, in consultation with their neighbors.