Strategies for teaching organic chemistry to non-chemistry majors and well, to everyone!
What do we mean by “strategies”?

- *All the factors that make the course appealing to our students*

- This includes:
  - Recognizing our audience
  - Course content
  - Relevance to other disciplines / everyday life
  - Encouraging preparedness and responsibility
  - Mode(s) of delivery
  - Evaluation
  - Promoting “learning”
No matter what the strategy, your approach should be:

1. **Affable:**
   - Your audience needs to see your *enthusiasm* and see that you want to be there

2. **Accessible:**
   - Mechanics of delivery
   - Instructor availability (office hours, e-mail)
   - Other resources (help sessions, WebCT discussion forums)

3. **Relevant**
   - Students must know *why* they are there and *how* the material is relevant to their majors
Strategies for **Choosing content...**

- Know your audience (art students / science majors / chem majors)
  - Different textbooks for different audiences
  - Articulating *why* the course is a requirement
  - Recognition of **student expectations** for the course
  - Articulating **your goals** for the course and students

- Focus on the basics / fundamentals rather than memorizing facts

- Teach **problem solving**
  - Recognize various approaches to problem solving that students may have
  - Worked examples
  - On-line discussion forums
Strategies for **Getting Students Prepared**…

- Unmarked homework assignments and readings
- Marked homework assignments (using tools developed by Publishers)
- Students post problems and solutions on WebCT
- Active learning is crucial
  - Explain to students how to take notes, how to learn, how to approach problems
- Equip students with what you think is crucial for success and explain how that helps them be better learners
Strategies for Teaching the lecture...

• Set the tone and let your students know your expectations (ie: cell phones, noise levels, tardiness)

• Establish rapport

• Class starters:
  – Molecule of the day
  – Overhead showing chemistry in the media / current affairs
  – Overhead with article relating content to fields

• Keep the content relevant
  – Historical anecdotes
  – Relate material to your own research
Strategies for Teaching the lecture…

- “Switch it up” every 20 min or so to maintain attention / alertness

- Demos - entertainment is important!

- Encouraging participation:
  - Rewards (monetary, marks) for answering questions
  - Use of Personal Response Systems (PRS) to encourage participation and immediately identifying misconceptions
  - Polling questions

- Repetition, repetition, repetition…
  - Overtly state the connections to previous concepts
  - Stress cumulative nature of material
Strategies for **Adapting Class Time**…

*Using technologies, or having group discussions requires time. Does content need to be sacrificed?*

- Less is more
- Organization is crucial
  - demos / examples need to be well planned and practiced
  - proper IT support
- What isn’t covered in class is students’ responsibility - shift responsibility to the students
Strategies for **Evaluation**…

- Encourage learning, not memorization
- Students like *feedback*

- Use of PRS / WebCT / on-line Publisher tools:
  - Participation marks
  - Marked quizzes / assignments
  - Allows you to track student’s attempts, time of completion

- Exams:
  - Review the exam format before to reduce student anxiety
  - Posting marks
  - Student forums to discuss exam questions
  - Repeating questions from the midterm to the final
  - Common exams if possible / desirable
At the end of the day…

• There are no right or wrong strategies and there are many factors that influence what strategies may be possible or appropriate:
  – The students, the course, the technology, the resources, administration, time

• But everyone agrees even that although it’s challenging, the ultimate objectives in teaching are to:
  – Promote learning
  – Show the everyday relevance of organic chemistry
  – Provide students with the tools to communicate in organic chemistry