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