

# Molecular Microbiology (MCB430)

## AKA "Information Transfer in Bacteria"

Spring 2008 MW 3:00-4:20 p.m.

### Topics:

- DNA structure and function
- DNA synthesis and degradation
- Chromosomal replication and nucleoid administration
- Bacterial cell cycle
- DNA damage and repair
- Transcription
- Gene regulation
- Translation
- Genetic code
- Transposons
- Plasmids
- Bacteriophages

### Features:

- In 2008 will be offered for the seventh time
- For juniors, seniors and graduate students
- In-depth treatment of material exposes the logic behind both the familiar and the new experiments
- Discussion of the main experimental techniques of Molecular Biology
- Lectures are chalk-talks only; all illustrations are hand-drawn; complete lecture texts are available
- Homeworks after every lecture promote discussion among students and maintain engagement with the course material

### Philosophy:

"It is better to know some of the questions than all the answers."

"The scientific fact is not the final truth. Rather, it is a red flag that marks a point at which experimentation was stopped."

Those who want to become experimental scientists, should learn to think like experimental scientists, in a continuous spiral: "...question-idea-prediction-test-approach-result-conclusion-new question-new idea...".

### Feedback:

What the students, who took the course in 2007, say:

- "Clear lecturing style"
- "Storytelling way of teaching is great."
- "Writing on the board is the best thing since it makes you more engaged with lecture."
- "Covered broad range of material, all very interesting and relevant. Homework forces us to keep up..."
- "The MCB 430 course was <...> crucial in my development. That was the first course that I've taken that covered the foundations of Molecular Biology. Many classes have jabbed at key experiments and important concepts, but none, aside from 430, have dealt with the *questions* that guided the experiments. This helped to solidify the content. I think many students to come will <...> benefit from <this> style of teaching "