SCHEDULE FOR SECTION 2 (TR)

**Ben Hopkins** handles inhibitor binding to lysozyme, enzyme kinetics, and mass spectrometry

**Fa-Kuen Shieh** handles the allantoin project, circular dichroism experiment, and protein crystallography

**Week 1**

April 1  Introduction to the course. Introduction to computer simulations.
April 3  **All groups**: Allantoin Part I: Conformational analysis in the gas phase.
**Group A1**: Demonstration of the CD spectrophotometer

**Week 2**

April 8  **Group A1**: Preparation of solutions for the lysozyme unfolding at 22 °C
**Group A2**: Demonstration of the CD spectrophotometer and review of the program SCIENTIST
**All groups**: Allantoin Part II: Monte Carlo simulation in solution

April 10  **Group A1**: Circular dichroism: Unfolding of lysozyme at 22 °C
**Group A2**: Preparation of solutions for the lysozyme unfolding at 35 °C
**Group B1**: Demonstration of the CD spectrophotometer and review of the program SCIENTIST
**Group B2**: UV/VIS binding study of NAG to lysozyme

**Week 3**

April 15  **Group A1**: UV/VIS binding study of NAG to lysozyme
**Group A2**: Circular dichroism: Unfolding of lysozyme at 35 °C
**Group B1**: Preparation of solutions for the lysozyme unfolding at 27 °C
**Group B2**: Demonstration of the CD spectrophotometer and review of the program SCIENTIST

April 17  **Group A1**: Review of the program SCIENTIST
**Group A2**: UV/VIS binding study of NAG to lysozyme
**Group B1**: Circular dichroism: Unfolding of lysozyme at 27 °C
**Group B2**: Preparation of solutions for the lysozyme unfolding at 32 °C

**Week 4**

April 22  **All Groups**: Mass spectrometry lecture (Pavlovich)
**Group A**: MS demonstration and data collection
**Group B1**: UV/VIS binding study of NAG to lysozyme
**Group B2**: Circular dichroism: Unfolding of lysozyme at 32 °C

April 24  **All Groups**: NMR lecture (Kahn)
**Group A**: Lecture and discussion: Enzyme kinetics (Kahn)
**Group B**: MS demonstration and data collection

**Week 5**

April 29  **“Circular dichroism: Unfolding of lysozyme” project due**
**Group A**: Inhibition kinetics with GAPDH or Urate Oxidase
**Group B**: NMR data acquisition

May 1  **All Groups**: **Unit exam I.** Protein folding, mass spectrometry and ligand binding
**Group B**: Lecture and discussion: Enzyme kinetics (Kahn)

**Week 6**

May 6  **“Ligand Binding to Lysozyme” project due**
**Group A**: NMR data acquisition
**Group B**: Inhibition kinetics with GAPDH or Urate Oxidase

May 8  **Groups A and B**: Protein crystallography: set up crystallization trials
Week 7
May 13  “Protein Mass Spectrometry” project due.
   Groups A and B: Protein crystallography lecture (Dr. John Perona): from crystals to structure
   Group A: Protein crystallography: microscopic analysis of crystals
   Group B: Free time or a demo of atomic absorption spectroscopy

May 15  Group B: Free time or a demo of atomic absorption spectroscopy
   Group B: Protein crystallography: analysis of diffraction patterns

Week 8
May 20  Groups A and B: Time for data analysis, possibly demonstration of another MS method

May 22  “Enzyme Kinetics” project due.
   Groups A and B: Time for data analysis, possibly demonstration of another MS method

Week 9
May 27  Memorial day for both sections
May 29  “Protein Crystallography” and “Conformational Analysis of Allantoin” projects due.

Week 10
June 3  Unit exam II: Enzyme kinetics, protein crystallography, and NMR.
June 5  Class will meet on June 6 for the poster presentation