Chemistry 333L Summer 2007

Schedule of Experiments

Text: Wade, *Organic Chemistry*, 6th edition.

Laboratory manual: California State University, Northridge, Department of Chemistry,

Chemistry 333L Laboratory Manual.

<u>Dates</u> <u>Experiment, Pre-Laboratory Preparation</u>

June 5 Check-in.

Safety Review.

CSU Northridge Chemistry 333L Manual, pp. 1–17.

LRC Safety DVD.

June 6 Melting Points.

Evaluation of Purity by Melting-Point Determination.

Melting-Point Determination of an Unknown.

CSU Northridge Chemistry 333L Manual, pp. 18–28.

LRC Melting-Point Determination DVD.

June 7 Purification of Acetanilide by Recrystallization.

CSU Northridge Chemistry 333L Manual, pp. 29–41.

LRC Recrystallization DVD.

June 12 Simple Distillation.

Isolation of α -Pinene.

CSU Northridge Chemistry 333L Manual, pp. 48-67.

Modification: Skip the Boiling-Point Determination of an Unknown section.

LRC Simple Distillation DVD.

June 13 Fractional Distillation With a Vigreux Distillation Column.

CSU Northridge Chemistry 333L Manual, pp. 68–73. Modification: Only do the fractional distillation.

LRC Fractional Distillation DVD.

June 14 Molecular Modeling.

Conformational Analysis with ChemDraw and Chem3D.

CSU Northridge Chemistry 333L Manual, pp. 81–86.

Wade, Sections 3-13 to 3-15.

June 19 Extraction.

Which Phase is Which?

The "Salting-Out" Effect.

Separation via Acid-Base Extraction.

CSU Northridge Chemistry 333L Manual, pp. 87–96, 99–101.

LRC Extraction DVD.

June 20 Thin-Layer Chromatography (TLC).

TLC Analysis of *o*-Hydroxyacetophenone and *p*-Hydroxyacetophenone.

TLC Analysis of Analgesic Components and an Unknown Mixture.

CSU Northridge Chemistry 333L Manual, pp. 103–112.

LRC Thin-Layer Chromatography DVD.

June 21, 26 Purification of Cholesterol by Column Chromatography.

CSU Northridge Chemistry 333L Manual, pp. 113–124.

Modification: Only collect and characterize cholesterol. Do not isolate the cholesteryl palmitate impurity.

LRC Column Chromatography DVD.

June 27, 28 Acid-Catalyzed Dehydration of 2-Methylcyclohexanol.

CSU Northridge Chemistry 333L Manual, pp. 125–133, 173–174, 189–192.

Wade, Sections 6-13 to 6-15, 6-17, 6-18, 7-7A to 7-7C, 7-10, 11-7 and 11-10.

LRC Gas Chromatography DVD.

July 3, 5 Reduction of Cyclohexanone.

CSU Northridge Chemistry 333L Manual, pp. 134–137, 181–184, 189–192.

Wade, Sections 10-11 and 18-12.

LRC Infrared Spectroscopy DVD.

July 10 Infrared Spectroscopy.

CSU Northridge Chemistry 333L Manual, pp. 143–149, 183–184.

Wade, Sections 12-1 to 12-12.

Appendices 2A and 2B.

LRC Infrared Spectroscopy DVD.

July 11 Organic Structure Determination by Spectrometric Techniques.

CSU Northridge Chemistry 333L Manual, pp. 150–163, 183–188.

Wade, Sections 12-1 to 12-12, 13-1 to 13-13.

Appendices 1A, 1C, 2A and 2B.

July 12 Check-out.