September, 2017 Organic Cume
Conformation and Stereoselectivity

The cume will cover the role of various types of stabilizing and destabilizing effects on the structure, stability, and stereoselective reactions of organic molecules. Cume questions will be based on the types of molecules and reactions discussed in the Background Reading indicated below.

Background Reading

- Carey and Sundberg, Advanced Organic Chemistry, Part A: Chapter 2, Sections 2.2-2.4 (pages 142-188)

- Carey and Sundberg, Advanced Organic Chemistry, Part B: Chapter 1, Section 1.2.2 (pages 24-31)

- Carey and Sundberg, Advanced Organic Chemistry, Part B: Chapter 2, Section 2.6 (pages 183-199)

Both texts available online either through an LSU libraries (www.lib.lsu.edu) catalog search or as part of the Springer ebooks collection (www.springerlink.com.libezp.lib.lsu.edu).

Some important concepts

- Angle strain
- Torsional Strain
- Steric interactions
- Gauche butane interaction
- Syn pentane interaction (same as 1,3-diaxial methyl-methyl interaction)
- Allylic strain (in particular, the A^1,3 interaction) Conformation of common ring systems
- Cyclohexane, cyclohexene, cyclopentane, and related heterocycles
- Fused ring systems incorporating five- and six-membered rings Steroelectronic requirements of common organic reactions:
  - Alkene halogenation
  - E2 elimination
  - Enolate alkylation
  - Epoxide ring-opening