CHEM 8B, Lecture 13 – Carbohydrate Nomenclature
- Fischer Projections
- Stereochemistry
- Haworth Projections & Chair Conformations

Fischer Projections & Conventions

Sugar Classification

D / L assignment based on **penultimate carbon** only

Prefix: *aldo-* or *keto-* for aldehyde or ketone, respectively

Infix: -*tri-* , -*tetr-* , -*pent-* , -*hex-* , -*hept-* , etc. for the number of carbons

Suffix: -*ose* for sugars!

Stereochemistry Review (Enantiomers vs. Diastereomers and Epimers)
Equilibrium between Open and Closed Forms of Sugars: Pyranoses and Furanoses

Recall from Chapter 19...

If it were LEFT UP to me, I’d be DOWN RIGHT angry!

α-anomer

β-anomer

Draw the C2-epimer of glucose in open and closed form (Haworth & chair):

α-anomer

β-anomer
Reactions of Monosaccharides, Part 1
(head start on lecture 14)

Is the sugar reacting with a nucleophile or electrophile?

Glycosidic Substitution

Nucleophilic Acyl Substitution
Draw the products in each reaction…

Next time…
- Ch 25.6: Reactions of sugars for unknown identification
  - Reduction
  - Oxidation
  - Kiliani-Fischer Chain Extension
  - Wohl-Degradation