Biophysics

Reading Assignments for Week 2

- Monday, January 20: Section 2.2 (pp. 52–72)
- Wednesday, January 22: Sections 3.1–3.2 (pp. 87–114)
- Friday, January 24: Section 3.4 (pp. 125–136), Sections 4.1–4.2 (pp. 137–147)

Homework #1 — due Friday, January 24

- 1. **Problem A**. Playing with scale.
 - (a) If an *E. coli* cell were a foot long (roughly the size of a football), what would its volume be? Assume it is an ellipsoid with semi-principal axes of length 6 in, 3 in, and 3 in.
 - (b) Working on this "football scale", use the data on p. 31 to calculate the corresponding volumes of a yeast cell, water molecule, DNA base pair, and a typical protein.
 - (c) Assuming the above quantities are spherical (hey, we're doing physics here!), calculate a typical radius for each four things above, and think of a familiar object of that size for each.
- 2. Problem 2.2
- 3. Problem 2.3
- 4. Problem 2.4
- 5. Problem 2.7
- 6. Problem 3.1
- 7. Problem 3.2