

### Questions for January 5, 2010 class

1. What is the principal driving force and *modus operandi* of NIH-sponsored research? In 20 years from now, where should we be in science? What do you expect?
2. What is systems biology? Do you do systems biology? How would you change your science to do systems biology?
3. What is/are the principal missing component(s) in the research as conducted today to answer the challenges embedded in systems biology?
4. Outline the strengths and weaknesses of reductionist theories of experimental research.
5. What is the proteome? Can we predict what it is? What is the basis of this knowledge? Is it changing?
6. Is transcription related to translation? What about the relationship with post-translational modifications?
7. Why study the proteome? Is it feasible? What are the challenges?
8. How can we devise approaches to study the proteome?
9. What is the rationale for reducing the complexity of the proteome of the sample you are studying?
10. Why is experimental design crucial to the outcome of a proteomics experiment?