AME 50652; Spring 2015; Homework 1; Due January 21st, 2015

Read: Franklin Powell Emami-Naeini (FPEN) Chapter 1; Meirovitch Ch. 4; Skim Gunter Stein
"Respect the Unstable”.

Problems:

- **Problem 1:** Identify five feedback systems that you encounter in your everyday environment.
  For each system, identify the sensing mechanism, actuation mechanism and control law.
  Describe the uncertainty with respect to which the feedback system provides robustness and/or the dynamics that are changed through the use of feedback.

- **Problem 2:** Try this out. Hold out your index finger in front of your face, close your eyes, and then turn your head left to right, right to left multiple times, attempting to track your finger with your eyes the entire test. You can keep your eyes on your finger an amazingly long period of time while doing this. Read about the semicircular canals in your ears (http://en.wikipedia.org/wiki/Vestibular_system); write the mechanism as to which your body is able to do this in terms of a negative feedback block diagram.