Final Lab Project Assignment

For the final project in the laboratory section of this course you will need to devise and run a test of one of the physical relationships presented in the lecture portion of the course **or** within parts of the physics textbook that we will not cover in lecture (e.g. Ch. 9-12). Basically, you must pick any physical equation/relationship and derive an experiment to determine if it is true or not. This can be an extension of a lab project we have already done, but should introduce a significant novel component.

Importantly, the central question of your lab project ***must tie in to some real-world question or observation.*** These do not have to be major scientific questions and could be something as simple as, perhaps, "how many horsepower does a horse put out?" or "why is it so hard to open the Commons front door?" or "how can I best play pool?" or "how good is the 'no friction' assumption that we use in all of our Physics labs?"

Guidelines/Requirements:

- You can use any piece of equipment or material in the physics storeroom, with the exceptions of the radioactive materials, the X-ray generator, or the unknown chemicals found randomly in some of the cabinets.
- You might look upon this as a good way to explore some of the areas of physics that we will not get to the in the lecture part of the course.
- You should work in groups of **two people** (talk to me if you have a compelling reason to work in a smaller or larger group).
- You will create a poster. The venue for showing the posters is TBD.

During the week of November 2:

- Form your group.
- Decide what relationship you want to test (or start anyway)
- Begin to devise your experiment.
- Talk to me about any equipment we do not have that may be useful to you as you design your final project. There is a significant (but not extravagant) budget for purchasing equipment/supplies for this project.

By Friday, November 7, your group should submit to me a *one page proposal* for the experiment you would like to do including:

- The physical law/relationship you are seeking to test
- What materials you will use for your project
    - *To the extent possible, please list the exact materials that you would need (emailing me links to places to buy stuff online is encouraged). If you don't yet have a good handle on where to get the materials you need,* ***please talk to me.***
- A description of how you will accomplish your proposed project
- A succinct timeline of when you will do what parts of the work.