



## ADVANCED PLACEMENT PHYSICS C

### L9909A : Proposal for Extended Lab Project

created: 2009 0112

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#### Overview:

Each student is required to submit a proposal for the AP Physics Extended Lab Project (XLP). These will be shared and the class will choose from among them.

#### Submission

Email your proposal to **gilroyAP@gmail.com** no later than 11:59 PM Eastern on the due date. The subject line should read your last name, first initial, and "XLP Proposal". For example, for John Smith subject line would be "Smith, J. XLP Proposal". Your proposal should be an attachment (not within the text of the message) in a format which can be opened by OpenOffice 2.4. Microsoft Word 2000 (".doc") and 2007 (".docx") are both acceptable.

#### Content

The first line of the proposal should be your name and the second should be the date.

The third line of the proposal should be a tentative title for your eventual report. It's OK if this changes during the project.

The heart of your proposal should be a paragraph or two at the most. It should succinctly describe your intended goal and the method you plan to use in reaching it. Proper goals always can be phrased as a question whose answer you are seeking. It might be helpful if you recall the form of an abstract, which answers three questions: (a) What were you looking for? (b) How did you look for it? (c) What did you see?

Obviously, at this stage, you cannot answer the last question. Also, unlike an abstract (wherein the answers should be a sentence or two), each of these questions might take a paragraph to answer.

#### Flexibility

While the proposal you eventually select should guide your work, it's entirely possible that, in the course of your research, you will discover a more interesting (or more tractable) question. It's alright to change the thrust of your project, though you must get that OK'd by me. In that event, you will resubmit your (modified) proposal.

#### Examples

##### 1. "Radio-Based Rocket Telemetry"

Our lab group will explore the range limitations on telemetry of a model rocket conducted by radio. One group member will design the rocket from off-the-shelf parts balancing weight and interior space. A second member will build a radio circuit which can be mounted in the rocket as well as a receiving station. The third member will write software code to read the telemetry data and compute the position of the rocket based upon signal strength of the radio beacon.

##### 2. "On the Fluid Dynamics of Oobleck, a Non-Newtonian Fluid"

Our group will investigate the counterintuitive properties of "oobleck" (a corn starch mixture), a common class of non-Newtonian fluid. In particular, we will measure the flow rate of oobleck through funnel openings of various sizes and compare to that of normal water. Figures of merit will include the diameter of the funnel and concentration of corn starch in the oobleck.