predictions, presumably made in your theory section, and your measurements or their consequences.

Appropriate Detail in the Short Sections

By referring to the abstract, introduction and conclusion sections as the "short" sections, it is implied that these sections shouldn't be long enough to contain much detail. That's right. The abstract and conclusion sections in particular will be the least detailed, giving the broadest look at the purpose of the experiment and the implications of the results. The introduction will be a bit more detailed, but not much; its focus should be on a general statement of the problem to be considered and the experimental method used to study that problem. Too much detail in any of these sections will obscure the reader's view of the main issues in the report.

CHECKLIST FOR SHORT SECTIONS:

- ❑ Summary of entire paper in abstract.
- ❑ Quantitative results in both abstract and conclusion.
- ❑ Statement of problem under study in introduction.
- ❑ Summary of experimental procedure in introduction.

THEORY SECTION

The theory section is meant to provide the reader with enough mathematical or theoretical background to understand how the experiment works, what assumptions have been made, and how the experiment is related to the physics being studied. This section may be very short (or even non-existent) if the theory is well-understood and the connections between the theory and the measurements are straightforward and obvious. It can be quite extensive, however, if the experiment is complex or the actual measurements being made are related in a complicated way to the results being compared to the theory.

The amount of theoretical background that you provide always depends on the expertise of your intended audience. For this course you should imagine that your typical reader is a classmate (not a professor) who for some reason has not done the lab in question and knows nothing about it. This situation is analogous to that of a researcher whose audience has quite a bit of general knowledge about physical principles and experimental techniques, but no experience with the specific experiment.