

Guidelines for the Brief Report *and* the Research Paper

Physics 303: *The Universe in Ten Weeks*
Professor A. John Mallinckrodt—17 May 2006

General Expectations

There is no fundamental difference between these two assignments other than the amount of effort they should represent. As I said in the syllabus, I anticipate that Brief Reports will consist of 2-3 pages while Research Papers will be more like 6-10 pages, but these are not hard limits. More important than the length of the paper is the amount of study and effort that each should reflect. I imagine that for most writing projects, you will spend about a third of the time researching your topic and the rest composing, and especially *revising* your work. If you are writing thoughtfully, the process of writing will inevitably send you back to your sources to clarify points so there is some additional research time folded into the writing time. With those understandings I would expect that a Brief Report should represent maybe 2 to 4 hours of research and another 4 to 8 hours of writing while the Research Paper might represent 4 to 8 hours of research and 8 to 16 hours of writing. That is to say, if you research and write with average efficiency, the Brief Report should represent about 8 to 10 hours of work while the Research Paper should represent about 16 to 20 hours of work.

Sources

Of course I encourage you to use the library, but I expect that you will use the internet for most or even all of your research. I approve of that *subject* to the condition that you take some care to establish the authority of your sources and *especially* that you do not abuse the privilege of using the internet by plagiarizing (see below). With regard to authority, a few sources, like Wikipedia¹, enjoy enhanced authority as a result of the fact that they are inherently “peer reviewed” and mistakes are (at least eventually) corrected. Most sources, however, have less obvious authority and you must make some effort to determine who the author(s) is(are) and what credentials he, she, or they may have to be expounding on the topic.

Writing, revising, proofreading

At a *minimum*, I expect all written work to be grammatical and carefully proofread. But “writing” *is* primarily “revising” and “proofreading” is only the final, simple step in the process. A properly revised paper will not suffer from the flawed organization and logical gaps that first and second drafts almost always do. As mentioned above, the process of revising will inevitably send you back to your sources to clear up questions that will always arise if you are writing thoughtfully. Indeed, one of the primary reasons to perform writing exercises is the enhanced learning that occurs *during* the process of *revising*.

Audience

An important question to ask yourself and especially to *keep in mind* while doing *any* kind of writing is, “For whom am I writing?” Many of the problems with student research papers result from the fact that they are often written with at best a nebulous concept of who the audience is. Papers written “for the teacher” may make otherwise unwarranted assumptions about the expertise of one’s reader. Two unfortunate consequences are 1) that you may settle for less than perfectly clear or complete explanations under the assumption that “he or she will know what I mean” and 2) that you may be tempted to use jargon and other “professional sounding language” that you are not quite equipped to handle correctly rather than the plain, everyday English that you *do* know.

I want you to keep in mind an audience consisting of other students in the class with the *same* level of general understanding and background that *you* have, but who simply have not done any specific reading in the topic you are addressing. I will read and mark your reports from that perspective as well. As you write—and *especially* as you revise—think about how *you* would react to your writing if you were reading your report and trying to really learn something interesting from it without having to go to any other source. It is a hard assignment for most people to put themselves in another person’s position and read their own writing from that person’s perspective, but it is *essential* to good writing.

Voice

Scientific writing has a well-deserved reputation for being dull and lifeless. This is a direct result of the conscious attempt by many scientists to remove any trace of themselves from their writing. They do this by writing in the third (rather than first) person which, in turn, forces them to use passive (rather than active) constructions, e.g., “An experiment was conducted and it was found that Miller Lite does *not* taste great but *is* less filling,” rather than “I conducted an experiment and found that ...” The idea is that writing in the first person may raise the readers’ suspicions about one’s objectivity, that it may create cause for concern about whether or not one has carefully and dispassionately carried out an experiment analyzed the results.

The problem is that third person/passive voice constructions are both needlessly contorted and dull and, as a result, they make the reader’s job—staying engaged in the reading and comprehending what is being said—more difficult. Moreover, no matter how contorted and dull the writing may be, it is *no* guarantee of experimental precision and objectivity. One can always disguise carelessness and bias behind a veneer of scientific sounding prose.

Note that none of the above argues for going overboard the other direction and being willfully informal or slangy. It just means that you should aim for lively writing by using first person and active constructions.

Avoiding plagiarism

Plagiarism is a *very* serious academic offense and I take equally seriously my obligation as a member of the faculty of this university not to tolerate it. If there is *any* question in your mind about what is or isn’t plagiarism (and even if there isn’t!), please take the time to read the statement on Academic Integrity in the Cal Poly Pomona catalog² and/or Google on “plagiarism”³ and read a few of the first hits that come up.

Simply put, plagiarism is using someone else’s words in *any* way that might allow someone to think that the words were your own.

It is entirely legitimate to use other’s phrases or even brief passages in your own work, but *only* if they are enclosed in quotes and *only* if the source is specifically referenced (either in the body of the text immediately before or after the quotation or as a numbered footnote or endnote.) Nevertheless, you should be *highly* judicious and spare in your use of quoted passages. They should *only* be used when they express a thought or idea in a remarkable way (e.g. with *unusual* clarity, efficiency, or irony.) A paper that makes repeated use of unremarkable quotations will necessarily and properly be judged inferior to one that doesn’t.

References

I am not a stickler for the particulars of *how* you provide information about your references, but that information *must* be included and it must be sufficient to allow me or any other reader to find the sources.

I strongly recommend that you include a numbered list of references that you used at the end of your paper including (for internet resources) the author or organization, the web page title, and the URL for internet resources; (for books) the author, the title, the publisher, the page number, and the date of publication; and (for magazine or journal articles) the author, the title of the article, the name of the journal, the volume, issue, page number and date. You can then refer to the reference numbers (as in “According to Professor Bigwig⁴ ...” or “According to Professor Bigwig (ref 4) ...”) in the body of your paper.

REFERENCES

1. http://en.wikipedia.org/wiki/Main_Page
2. “*Academic Integrity–Catalog Excerpt.*” Cal Poly Pomona Judicial Affairs office, <http://www.dsa.csupomona.edu/judicialaffairs/academicintegrity.asp>
3. <http://www.google.com/search?q=plagiarism>
4. Bigwig, I. Ama “*Everything There is to Know About Everything,*” Nosuch Press, pp. 245-246, 2002.