PHYS 3751: GUIDELINES FOR PROJECT/TERM PAPER AND PRESENTATION

[See "Project Guidelines" at http://www.physics.mun.ca/~anand/teaching/phys3751.html]

Literature Review [due February 15 or earlier]

See "Suggestions on searching" below

Presentation [March 24 – April 4 or earlier by choice]

A short oral presentation in class. Remember that no-one in class knows anything about the subject you are covering and your goal is for them to learn:

- what are the important questions in the subject of your choice and why is it interesting?
- what are the basic techniques?
- what experiments have been done and what have they found?

Due to the time limits (11 minutes for the presentation, 4 minutes for discussion) the presentation will have to leave out a lot of detail contained in the paper. Part of the preparation will be to figure out what to leave out.

All students are required to attend all presentations and participate by asking questions. Each participant will be pre-assigned one paper and presentation to critique and a draft paper should be made available to them. The critique should be returned to the speaker on the day of the talk.

Paper [due March 31]

The paper, approximately 2500-3500 words, will be based on the plan you have submitted (minor modifications o.k.). While the scope and extent can vary, make sure that the basics are covered. We have not covered experimental particle physics in any great detail in class, and one of the goals of the presentation is to fill in those gaps.

- Wherever your paper touches on experimental technique, technical detail should be provided.
- Do not use words or phrases you don't understand.
- Do not copy sentences from a website or book unless necessary – if you do use it, reference each usage.
- You work will be judged on content (when in doubt go deeper rather than broader), and clarity.

Literature Review: Suggestions on searching.

First look at the web links on http://particleadventure.org/other/othersites.html

Read any popular info you can find (on wikipedia for example). While wikipedia is a good place to **start** a search it is not an acceptable reference.

Then find a computer with internet access where you can spend some time. On campus, you have access to e-journals and citation databases. Off-campus, you will need to set up a "proxy". Look at the library website or speak to a librarian for more info. Via the website,

http://www.library.mun.ca/eindex/alphaSearchResults_new.asp?SearchText=W

you will find the "Web of Science" Citation indices.

http://portal.isiknowledge.com/portal.cgi/portal.cgi?DestApp=WOS&Func=Frame&Init=Yes&SID=A5OAP9d7N6d@LL725jO

You can search by topic and/or author. Make your search more specific by using multiple keywords

For example:

Neutrino AND (oscillation OR mass)

or

electron AND magnetic moment.

You will get a bunch of hits with most recent first. Click on likely ones.

You will get to a page with **a record of the article** containing the following:

- article title
- authors (particle physics papers often have many!)
- Number of cited references
- Times cited
- Abstract

If the abstract means anything to you, pick a paper by its abstract. If not, look at the Times Cited. You can re-order the articles by the "Number of Times Cited" and so get the most relevant ones. If it looks relevant, download the paper and read the first paragraph. The articles cited in the first paragraphare likely important ones. Again, the number of citations is a good indicator. Original experiments in particle physics are likely heavily cited (the number depends on the age – 30 citations for an article published in 2005 is huge, but not for one published in 1980).

The process is iterative. The first article you check is unlikely to be a good representative article, but *it likely cites a good representative article in the first paragraph.* The first target of the project is to get collect about 10 representativearticles, print out the **record of each article.** Its a good idea to have the target of 10 while you search: don't stop when you get to 10 eventhough you have 500 hits; refine your search until you get fewer, more relevant hits. The process of refining your search will help you figure out the important keywords in the field.Hand in the results of your search with a 1 paragraph summary in complete sentences of what (keywords) you plan to explore.

If you need a starting point, EMAIL ME for a first article. Look at the "Articles Cited" by the article and more important, look at the newer articles that cite that article.