Guidelines for the In-Class Presentation

The in-class presentation represents 25% of your total grade in the course. Presentations will be given over the course of two class periods (see "Key Dates" below). You will have an opportunity to practice your presentation in front of the instructor before delivering it in class. Feedback from this practice session will only improve your presentation and lead to a higher grade.

Goals

The goals of the in-class presentation are:

- For you to choose a topic, conduct research on the topic, and present your research to a group unfamiliar with the topic (your peers)
- For you to learn basic skills needed in presenting scientific or technical work, including speaking, presentation design, and presentation organization
- To provide a record of such achievement in this class for the department as a resource for future students and instructors in the course.

Topics

You may choose any topic related to anything in modern physics. A good way to choose a topic might be to look through the sections of Harris entitled:
• "Real World"
• "Optional" (e.g. discussions of the light-speed barrier)
• "Progress and Applications" (these appear right before the problems at the end of each chapter)

To get ideas, you can also look at recent (e.g. within the last 10 years) issues of:

• Scientific American or Discover Magazine (available in Fondren Library)
• The journals Nature or Science, which document current research in hot topics (Available in Fondren Library or through digital access online)
• NOVA or NOVA ScienceNow episodes (available online)

You are required to pick a unique topic in consultation with the instructor (see "Key Dates" below) and make that the central discussion of your presentation. The earlier you choose your topic, the more likely you will get it before somebody else. Please make sure to have one or two backup topics in case your first choice is taken. Topics will be posted online at:

http://www.physics.smu.edu/sekula/phy3305/presentations.html

**Format**

You can choose any format you like, in consultation with the instructor. Expectations are that you will use a modern presentation tool to hold your content, such as:

• PowerPoint
• KeyNote
• OpenOffice
• LaTeX

If you do not own a laptop from which you can deliver your talk, or if the talk requires a Mac (the in-class desktop computer is a Windows PC), you
must inform the instructor so that equipment can be obtained prior to the presentation.

If you need help designing your presentation, or are unfamiliar with modern presentation tools, please contact the instructor to arrange a session for learning these tools.

In addition to slides produced in the above, you are free to use demonstrations (digital or in-class), music, or other rich media as long as you can justify their connection to the topic. Science is not just about doing - it's also about communicating, and creativity is STRONGLY encouraged!

**Structure of the Presentation**

You will have **15 minutes** to deliver your presentation, and part of your grade will depend on whether you stay within time (end within one minute of your allotted time). The classroom audience is then free to ask questions of your presentation, and your demonstration of some depth in the subject outside of your core presentation will be judged as part of your grade. Note: the presentations will be advertised to the physics department, so there may be others in the audience besides your class-mates.

Questions after your presentation will last **5 minutes**, at which time the next presentation will start.

When designing your presentation, keep the following in mind:

- The first half of your presentation should be accessible to an audience who reads Scientific American or Discover Magazine, but not to somebody with more experience. This is your chance to introduce the basic ideas in the topic, motivate their value or interest, and talk broadly about the subject.
- The second half of your presentation should be more detailed, more like a seminar to an informed group (e.g. students who are taking "Modern Physics"), so that the audience knows you have depth as well as breadth in the subject.

**Sources**
You will be graded on the number and diversity of resources you use to inform your presentation. In science, we do not work in a vacuum; we innovate on the experience of those who came before us. It is therefore critical for you to use as many sources as possible to inform your presentation.

You are required to cite at least 5 different sources in order to get points for this part of the presentation. For instance, you cannot use only five Scientific American articles. In the case where you use exactly five source, you could use one Scientific American article, one Discover Magazine article, a text book, and two different journals or magazine or other media (video, podcasts, newspapers, etc). If you only have five sources, they must all be different. If you have more than five, as long as any five of them are from different origins you can repeat sources. If this is unclear, please speak to the instructor.

Your primary sources must also be current, meaning that at least five of them must come from within the last 20 years. Citing historical sources is fine, as long as you have more recent material to link old ideas to modern times.

Sources must appear on slides at the very end of your talk.

Presentation Tips

- Timing: expect to spend 1-2 minutes per slide, so don't plan on having more than about 15 slides. This is a very good rule of thumb for ANY presentation.
- Pace: don't try to rush through too much information. Decide beforehand what two or three points the audience should absorb from your talk, and use the presentation to hammer home those points. Details are critical to that effort, but trying to communicate too much will only make the audience feel lost or uninterested.
- Design: don't try to put too much information on a slide. Good slides use less and leave the speaker free to say more. An audience is there to listen to you, to be entertained and informed by you, not to read your slides. Less text is better, more images is better.
- Storyline: a presentation is a story, with a beginning, a middle, and an end. The beginning of your talk should motivate the idea or the question and serve as an introduction to your topic. The middle should
expand on the topic and emphasize the major points you want the audience to remember or absorb. The end should draw conclusions based on what you have said, and talk about any future directions or ideas in the topic (if applicable).

- Connect: make frequent eye-contact with your audience, speaking to them and not to your screen. Be expressive. Let your excitement for the subject (which, since you chose it, must exist) shine through and overcome any nervousness you might feel. If you're excited, your audience will resonate with you.

**Practice Talk**

There will be a week (see "key dates" below) during which you can schedule a practice talk with the instructor. You don't have to have a complete talk - just having the first 5-7 slides of the presentation will be enough to get very useful feedback. **You are required to give this practice talk, so schedule a 1 hour slot with the instructor during that week as soon as possible.**

**Key Dates**

- 3/19: Due date for presentation topic choice (including approval of instructor)
- 4/5-4/9: Schedule your practice talk with me (even if the talk is incomplete) to get pre-presentation feedback.
- 4/20 and 4/22: in-class presentations