

## Guidelines for Final Project and Presentation

Each group will have 30 minutes for oral presentation followed by 5-10 minutes for questions from the audience. Each member of the group can participate in the presentation or the group can designate one or more spokespersons to deliver the report. All group members should be prepared and available to answer questions.

The written part of the final project will be done on an individual basis, but must be on the theme designated by the group for the oral presentation. This written report should be typed in 12 point font and be no more than 6 pages (singled spaced) or 12 pages (double spaced), excluding references. All written reports should be handed in (hard copy) by April 4th.

### Schedule

**March 21: NO CLASS**

**March 28:** (i) Mary Miedema, Leeav Lipton, Samia Islam *1993 Nobel Prize for Pulsars*

(ii) Ramanjit Sohal, NimaJaberi-Lashkari, Alex Videka

*2008 Nobel Prize for Spontaneous Symmetry Breaking in Particle Physics*

(iii) Eli Bourassa, Daniel Parada *1996 Nobel Prize for Superfluid Helium 3*

**April 4:** (iv) Joseph Faddoul, Hal Foster *1983 Nobel Prize for Astrophysics/Supernovae*

(v) Jonathan Webb, Paolo Albanelli, Stephen Fomichev

*1984 Nobel Prize for Discovery of W and Z Particles*

(vi) Michael Yoon, Iassen Petkov

*2004 Nobel Prize for Asymptotic Freedom in Particle Physics*

Some questions to consider for the final project:

1. What is the breakthrough(s) for which this Nobel Prize was awarded?
2. What motivated the scientists to pursue this line of research? Did they find what they were looking for or was the outcome unexpected? Explain.
3. Explain the physical principles underlying the cited work in terms that other students in PHY189 can understand.
4. What was the background work and personal experience of the scientists that led to or enabled the prize-winning work?
5. Were there other scientists, not included in the prize, who made crucial contributions? Describe their work.
6. Discuss the ways in which the prize-winning work provides a foundation for work in other disciplines either within physics or outside of physics.
7. Does the work provide tangible benefits to humanity through practical applications or is it abstract and beneficial to only a narrow spectrum of people? In answering this question, use your own critical judgment rather than repeating hype you may find from other sources.