Job Summary
This is the second work term that I’ve had with the Princeton lab, and like last time, I worked with the Engineering division. Since I have been here before, I was able to get started right away with work, without extensive orientation, though, as I was working on new projects, readings were given to me as they became relevant/needed. During this work term, I primarily worked on two projects under the supervision of two mentors respectively, each of whom supervised and provided guidance for each of the projects I worked on. The first project involved investigating commercially available solutions to providing high heat flux for a design study of a plasma test stand, and the second involved contacting and working with suppliers to order a new heating jacket for an old RF test stand. The first led me to learn about electron beam guns, plasma torches, neutral beams, and a variety of other beam devices that might fit the requirements for the test stand, as well as why and how the test stand is the way it is. This resulted in a 10 page section of an overall draft report on the preconception design of the test stand. The second project was more hands on, and involved understanding the best heating solution for an oddly shaped scientific instrument and working with suppliers and their capabilities.

These projects did not directly relate to school work, which is more theoretically centered, but was able to show me the practical side of an engineering career that school work was missing. As I plan to pursue an academic/research career, this job was not only important for me to evaluate and confirm my plans, but also to gain valuable experience in a field that I might work in. At the same time, the work made me realize the importance of workplace relationships and networking in a way that school work cannot.

Area housing is available both through craigslist, which is perhaps the easiest, alternatively, the Princeton University maintains listings of off-campus housings. Further, there may be University dorm rooms available in the summer. The area immediately surrounding the laboratory is best accessed by car, although there is a free hourly shuttle to and from the Princeton main campus. Bicycles are also a good solution for transportation, but the lab area is not very pedestrian friendly. There are some lab hosted social activities that you can participate in, and the lab has a relatively relaxed work environment compared to what you might expect in a cooperate setting. Its close proximity to Princeton University also presents opportunities for social interaction.

The best feature of this job is its relaxed atmosphere in which you come in contact with interesting topics and having the freedom to explore them as they come up. The worst feature is that the work is sometimes slow, and occasionally mundane. All in all, the Princeton Plasma Physics Lab is a great place for interested students to experience a research laboratory career.
Job Summary

I worked for the mechanical engineering division of PPPL. We, along with the electrical engineering division, are the people that make the physicist's dreams come true by taking their concepts and actually designing the equipment and diagnostics that makes their experiments happen. The laboratory is a National Laboratory under the Department of Energy's Office of Science, and works on several large projects, but is mainly concerned with nuclear fusion experiments through the operation of the National Spherical Torus Experiment (NSTX), and participation in the International Thermonuclear Experimental Reactor (ITER).

The main project that I work on while at PPPL is a pre-conceptual and explorative design of what is called the Removable Divertor Module (RDM) for the NSTX upgrade. It involved mainly figuring out existing features of the reactor and specifying new parts and the general design concepts of this new module. An important part of this project was working with the physicists, engineers and the drafters to figure out the needs and constrains of the RDM.

I did not have a formal orientation per say, but I did get a chance to read up on various related material in the first few weeks and then more as questions came up. I was not assigned a mentor, but my supervisors and as well as the others who I worked with were very helpful with any questions that I had.

The work I've done is mainly related to various mechanical engineering disciplines, which is not directly related to most of the engineering physics curriculum. However, typical engineering way to approach problems and the fundamental aspects of engineering did show up. At the same time, engineering physics discussions do come up peripherally sometimes, especially when learning about the operations of the NSTX.

Perhaps the most important thing to be learned here however is not any academic concepts but rather the role of engineers in a complex research project, with physicists on one side and drafters and technicians on the other, and the skills to navigate between needs and constrains.

A fellow coop student and I lived together, subletting two rooms at a house close to the laboratory. The most convenient way to find housing is probably by using the Princeton University's off campus housing listing site through a friend who attends the University. Barring that, Craigslist is the way to go. While the Princeton main campus is very pedestrian friendly, the laboratory is neither on the main campus nor very pedestrian accessible. Having a car is a great help, especially combining with the need to shop for groceries and such. Since you are likely to live near Princeton if you work at PPPL, the social activities of Princeton University is fairly accessible, and both NYC and Philadelphia is close by and easy to access through trains.

The best part of the job for me is the multidisciplinary nature of the project, which makes much more interesting than drying text book problems. While most this RDM project does not pack as much academic punch as problem sets in Mathematical Physics, it is much more interesting and engaging.