

**Course Projects**  
**An Introduction to Cancer Modeling with Optimal Control**  
**Park City Mathematics Institute**  
**Undergraduate Course, June 27 - July 15, 2005**

During the last week of the course, in groups of two, your course projects will be presented in the discussion section. You can find your own partner. Projects will involve reading a research paper on the course topic. We encourage you to find your own paper, but have some available as well for you to consider. In your presentation, you want to be able to:

1. *Describe the problem.* What is the goal of the paper you are reading. How is the work different? What makes it interesting?
2. *Explain the model.* What kind of model is it (i.e. what mathematics is used)? Do the assumptions make sense? Do the results make sense? What are other positive and negative aspects about the model?
3. *Understand the analysis.* What techniques did they use on the model? Were you able to understand them? How are they similar and/or different from what we did in class?
4. *Build on the model.* In what ways could the model be modified? In what ways can they be extended?

We want the projects to synthesize what we have been doing in class and to clarify and illustrate what we have been talking about. If you are able to, we suggest the following **bonus!** component of the model:

*Reproduce the model results and implement your extension/modification ideas!*

Lisette and Angela are available to discuss your projects. We will be available in problem sessions on specifically to discuss the projects (amidst the exercises and activities for that day). There is no need to keep your project work to yourself; feel free to discuss your thoughts and ideas with your peers as well as other PCMI participants. Presentations should last approximately 15 minutes. This is not much time, so prepare well. Mostly, **Have fun!**