

**Computer Science 102**  
**Summer I 2011**  
**Project 3 – Advanced Ray Tracer**

**Due: midnight, Wednesday, 6/15/2011**

### **Overview**

For this project, you will extend your ray tracer to include: boxes, multiple lights, reflection, code enhancements (linked lists), as well as one advanced option (antialiasing, refraction, or 3D stereogram).

### **Description**

Your ray tracer should include the following requirements:

- function pointers and IMG\_T, if not included in Project 2
- boxes – added to object types
- multiple light sources
- reflection – through recursive ray tracing
- reading the scene description from an external file (format given on the webpage)
- code enhancement –
  - image data structure – (i.e., 2D array) so that it can be output after all processing, rather than during processing
  - storing objects and lights in linked lists

In addition, you must implement one of the following (more than one may count as extra credit):

- antialiasing – through pixel subsampling
- refraction
- 3D stereogram

You must create images to show off all of the features of your program (be creative!). As always, your code must be well-structured and commented.