

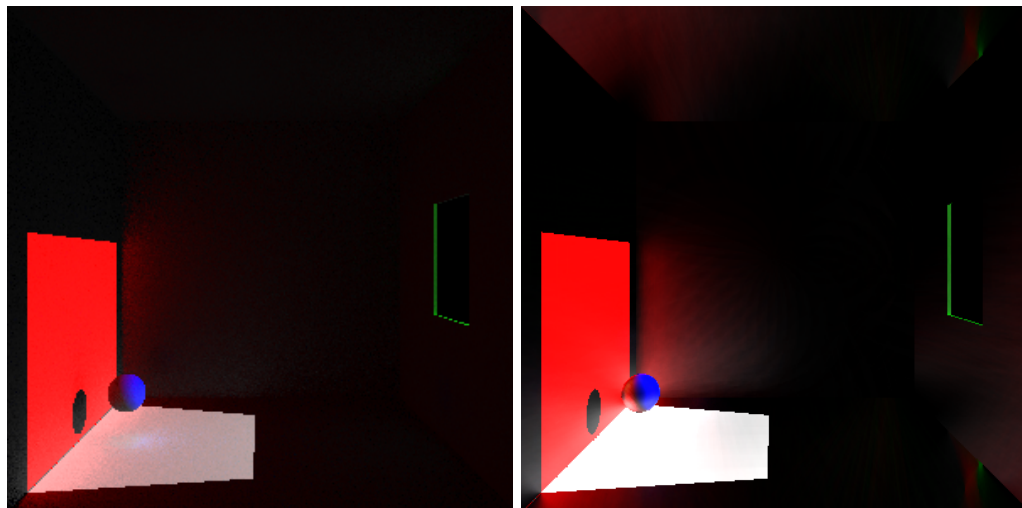
## FP Milestone 2 Report - Katie LaRue and Sean Brzoska

For each milestone, you will add a milestone report to your repository's `reports` directory.

1. Briefly describe your progress. Address all items that were in your project proposal for this milestone.
  - a. We have implemented a basic implementation of global illumination within our test scene 12 using camera 1. The rendering of this image is still pretty slow with a 300x300 frame and gets slower as we increase the size.. Using our random sampling method we get an image like visual 1 listed below. It shows the speckling effect that is commonly expected. We also have a preferred sampling method to reduce the area where we grab our “reflected” ray from which is shown in image 2. This one shows a banding effect that isn't ideal, but may be caused by how our preferred rays are generated in circular bands off the reflected ray.
2. Include some form of visual evidence of the results you've achieved so far:

Image 1 - random sampling

Image 2 - preferred sampling



- a.
3. Provide instructions for running your code, and a description of what I should expect to see when I do so.
  - a. A run of our code can be done in the WWURay folder from the julia environment with the command `WWURay.main(12, 1, 300, 300, "results/global.png")`
  - b. Currently you need to specify in `WWURay.traceray()` which sampling method you would like to use. The one currently uncommented in our code is `perfered_sample` on line 298
4. If the project's goals need to change at all (e.g., to adjust scope to account for unforeseen challenges, or to further clarify goals), provide an updated set of goals for your final deliverable. Explain each change with respect to your original goals.
  - a. Since we accidentally did volumetric lighting before global illumination, we had a bit of change in our plans. Currently, we are back on our original schedule with a basic implementation of both volumetric lighting and global illumination. For the next week instead of looking to only optimize both processes, we will be working on fine tuning

both processes to make sure we are implementing as much as we can given our test scene by improving the visual appeal of these lightings, removing unwanted banding, reducing unnecessary calculations, attempting localized fog for volumetric lighting and possibly adding colored lights. We will be splitting up the work where one of us will be mostly focused on volumetric lighting and the other will be mostly focused on global illumination.