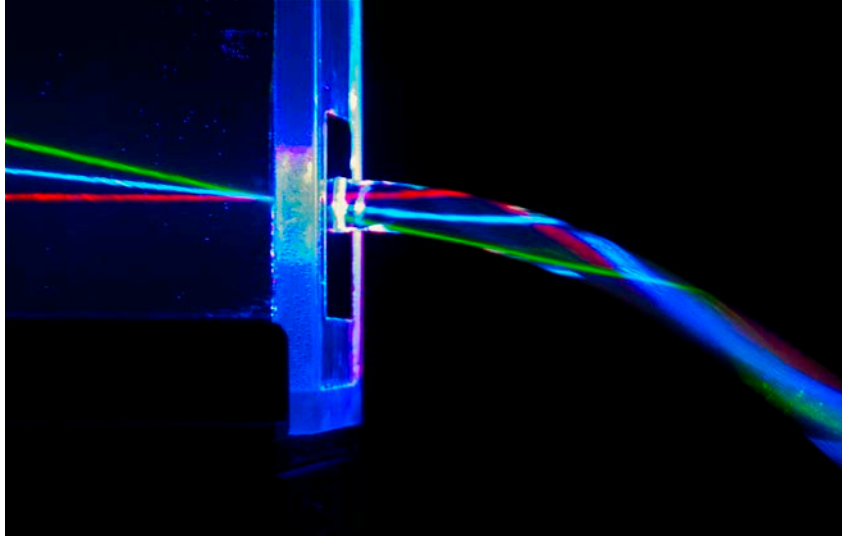


## Team Image 1

Lindsey Yarnell



The purpose of this image was to show how light gets trapped in a laminar stream of water. The intent was to show how water essentially acts like a fiber optic cable with light. We actually got the idea from a youtube video that showed the same phenomenon. With the help of my team, Faith Batrack, Chris Franklyn, Jiffer Harriman, and David Gange as well as the physics department I was able to construct the setup to create my image.



The set up to create this image was fairly simple. We set up an approximately 12" x 12" x 4" tank with a 3/4" hole in the side about 3' up off a table. Initially one laser was set up with the beam aligned with the center axis of the hole in the tank. In the final image three lasers were set up with one along the hole axis and two more at increasing angles above it (one at about 10 degrees and one at about 20 degrees). As you can see in the picture the light reflects of the edge of the water stream at the incident angle.



This image was taken in the dark with some lighting from adjacent rooms. The tank was filled with a mixture of cold tap water and pine-sol. The pine-sol increases the visibility of the laser light in the water due to the size of the pine-sol particles. The lighting in the image came solely from the laser light and ambient lighting from rooms around

us.

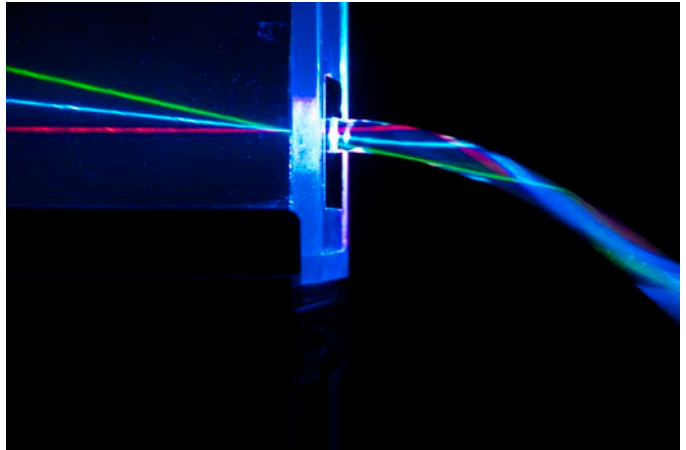
The specifications of the camera and image:

#### Camera Data

Camera	Nikon D200
Lens	Nikkor 18-200 mm

#### Image Data

f-stop	f/5.6
shutter	2
ISO	200
focal length	200 mm
Pixel Size	3133 x 1993



I did photo shop the original image to get the final picture. The original picture is shown above and to the right. I messed around with the lighting of the picture by increasing the contrast and decreasing the exposure. I also increased the saturation as well as increasing sharpness and decreasing the highlights in the picture.

This image shows the phenomenon of light refraction in water. I think this image effectively demonstrates the physics we were attempting to capture. I really like the lighting in this picture I think it has a very sharp coloring. One thing that I would re-do for this image is maybe to do some research on best dark lighting camera settings. I had a lot of trouble getting picture that capture how the setup actually looked real time. The

direction I would go in developing this idea further would be getting lasers in more colors and attempting to get the spectrum of laser light to converge into white light.