**Objective**
Establish an optical communication link and successfully transmit information back to a base station.

**Overview**
CRITR will be driven wirelessly to a point of interest. A laser beam will be directed back to the user containing information.

**Specifications**
Hardware includes master and slave pairs of Arduino Uno’s and Xbees, a heatsinked H-bridge for (4) DC motor controls, two (dual axis) servo motors, and a 650nm 5 mW laser.

**Struggles/Lessons**
- Wireless protocol
- Floating pins
- Noise Effects
- Component Limitations

**Responsibilities**
Evelyn - Receiver circuit, laser safety, logistics
Dave - Chassis drive circuit, collimator
Scott - Wireless controls, debugging
Stayton - Software, integration, test, debugging

**Possible Future Capabilities**
- Sending digital data
- Higher powered laser/s for longer distance
- Noise reduction code
- Auxiliary filters for cleaner transmission
- Multiple lasers on different wavelengths to increase data
- Video transmission

**Waveforms**
- Left pic is the audio source (top) and received signal (bottom)
- Right pic is the difference, highlighting noise and loss