

# A miniature microscope for fluorescence imaging

**Client:** Prof. Matthew Merrins

**Advisor:** Professor Jeremy Rogers

**Team:**

<b>John Rupel</b>	jrupel@wisc.edu (Team Leader)
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**Date:** 01/08/2017- 02/14/2017

**Problem Statement:** An affordable miniature fluorescence microscope needs to be developed the excitation source should be an LED with a wavelength of 430nm and filters will be required to filter 470 nm and 535 nm light.

**Last Week's Goals:** Present design ideas and finish mid-semester report.

**Summary of Team Role Accomplishments:**

- John: John met with Professor Rogers and went over OSLO design software. Also found a camera that is more affordable than the one we intended on using and more quantum efficient. John found an LED driver that will effectively drive the LEDs we want to use.
- Kadina:
- Kaitlyn: Updated team website with report.
- Zach:

**Summary of Design Accomplishments:**

- Team presented design ideas
- Team team completed mid semester

**This Week's Goals/Individual Goals:**

**Kaitlyn:**

**Kadina:** My goal this week is to communicate our questions to Professor Merrins and assist with determining what components we want to order now.

**Zach:** BSAC did not meet this week due to design presentations.

**John:** My goal this week is to tell Kadina or Kaitlyn what to order and research the specific tube lense we need.

### **Project Difficulties:**

Found an affordable objective; however, it does not list the field number which is needed to determine the object size. Also need to find a way to test the LEDs.

### **Same Challenges:**

- Picking out a specific tube lens with proper focal lense.

### **New Challenges:**

- Address the problem of bleed through
- Automate the image processing.

### **Tasks Completed by Team Members:**

***Kaitlyn:*** Helped complete the preliminary report with the team.

***Kadina:*** Helped with all of the deliverables for the week.

***Zach:*** Zach continued examining the stand set-up. He wants to find industry parts with files for proper CAD modeling.

***John:*** John met with Professor Rogers and learned about OSLO. John also found a proper LED driver as well as an affordable camera.