Photo-Actuation: Determining the Effect of Blue Light on the Actuation of Micro-Beads by *Serratia marcescens*

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What is a MicroBioRobot?

• A MicroBioRobot can be thought of as two pieces:

  1: a Microscopic Device  
     (fluorescent polystyrene micro-beads, 3μm diameter)

  2: Flagellated Bacteria  
     (in our case, *Serratia marcescens*)

http://www.polymicrospheres.com/  
How Do Flagellated Bacteria Move?

http://openi.nlm.nih.gov/detailedresult.php?img=3000427_pcbi.1001004.g001&req=4
Why Create a MicroBioRobot?

- The small scale
- No external power source
- *Serratia marcescens* are fairly harmless bacteria
Blue Light Results

• Blue light causes *Serratia marcescens* to tumble more frequently
• As a result, the MicroBioRobots moved significantly less when illuminated by blue light