**Bio111 Week 4**

Before you come to lab

1) Skim the [JAMA paper](http://www.bio.davidson.edu/people/macampbell/111/weekly_Labs/Samore.pdf).

3) Answer each of these four questions in two sentences or less.

A) What is the take home message of the JAMA paper? (evolution)

B) What is a serial dilution? (evolution)

C) How is fluorescence of red fluorescent protein (RFP) measured? (information)

D) How is a spectrophotometer used to measure cell density in a population of *E. coli*? (information)

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**NOTE:** At 4 pm on the Wednesday before your lab, one person from each lab group MUST COME TO Dr. C’s research lab (Dana room 220). Please be on time. We need to start cells growing so we can test them for RFP levels. See page 2 for details.

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**Week 4 (Sept 15th)**

Before you come to lab

Read JAMA paper and answer the 4 Questions.

One person from each group must come to my lab Wednesday at 4 pm to start cells growing.

Evolution In Lab

1) Into a sterile 1.5 mL tube, put 150 µL of sterile glycerol and mix 850 µL of bacteria from the overnight growth. We will freeze this at -80º C for an archive of your starting strain of bacteria.

2) Search the internet to find a reasonable concentration for your antibiotic.

3) Write out a protocol for finding MIC for the combination of bacteria and antibiotic you have chosen. You want to do a series of 4 dilutions with your antibiotic, 1 positive control and 1 negative control. Six tubes per group.

4) Perform the experiment to empirically determine the MIC for your group’s choice of bacterium and antibiotic. Add 2 µL of cells to your tubes. Do you want to grow them at room temperature or at 37º C?

5) The tubes will be refrigerated for you until next week.

Information In Lab

1) Take a photo of your plates and the tubes of your overnight cultures of bacteria. You can use your own phone/camera or the lab’s. Upload low resolution version to your part’s wiki page.

3) Measure fluorescence and cell density. Calculate fluorescence as a function of cell density.

4) Spot out your experimental cells on a fresh LB + Amp plate to save them.

5) Generate an Excel graph to communicate your findings.

6) Post results on wiki page for your part number.

7) Prepare for presentation next week. Generate the graphics using Excel and PPT.