

BIOL 2345 Summer 2018 – Fluorescence Project Tentative Schedule

Date	Week	Schedule	Before lab	Due in lab
16-May	Week 1	Safety talk, combined – 60 min	Read University of Leicester. "Biologists Discover Gene Behind 'Plant Sex Mystery'." ScienceDaily. ScienceDaily, 23 October 2008. (Note: This is not a peer-reviewed scientific paper)	Lab notebook first entry (write and post during lab)
		Micropipette demo – 10 min	Read Howard Hughes Medical Institute. "Cells Don Festive Holiday Colors." ScienceDaily. ScienceDaily, 13 January 2005. (Note: This is not a peer-reviewed scientific paper)	Video1-Pipetting (make and upload during lab)
		Micropipette exercise and worksheet – 60 min How to read a scientific paper Set up your lab notebook online Record your pipettor video and upload to your notebook.	Bring laptops	
23-May	Week 2	Lab Meeting	Read Shaner et al 2004 Nature Biotech	Writing: Goal, Research question, and Experimental design (gene, strain, number of samples, steps in experiment), Predicted outcome
		Plasmid DNA extraction – 60 min Nanodrop quantification – 15 min Mutagenic PCR – 15 min [Few hours to complete]	Complete Pre-Lab	
30-May	Week 3	PCR clean up kit – 30 min	Read Randall et al 2016 Nature Communications	Writing: Bullet point outline the methodology and say what each protocol achieves toward the project goal.
		Nanodrop quantification – 15 min Double enzymatic digestion set up – 15 min Writing Workshop [3 hrs and 5 days incubation]	Complete Pre-Lab	
6-Jun	Week 4	Gel Electrophoresis (PCR product, undigested and digested plasmids) Load gels – 20 min Run gels – 60 min (free time) View gels print picture – 20 min		Writing: Introduction and Literature Cited. Cite 3 peer reviewed papers in your introduction.
		PCR clean up of digests – 30 min Nanodrop quantification – 15 min Ligation set up – 20 min [12 hrs incubation]		
13-Jun	Week 5	Transformations – 60 min Plating cells – 15 min [Plates incubate for 1 week at room temperature]	Complete Pre-Lab	Writing: Methods (to date, bullet point of upcoming techniques) Video2-Pipetting (make and upload during lab) Transformations worksheet
20-Jun	Week 6	Assay and photograph colonies under UV – 20 min Colony PCR set up – 45 min [Few hours for protocol to run] Streak target colonies – 20 min [Plates incubate for 1 week at room temperature] Fluorescence assay [Prep lab reads fluorescence after lab]	Complete Pre-Lab	Video3-Streaking colonies with aseptic technique (make and upload during lab)
27-Jun	Week 7	Gel Electrophoresis (PCR product) Load gels – 20 min Run gels – 60 min Interpret data from Fluorescence assay View gels print picture – 20 min Send products out for sequencing [One to two days for results from GeneWiz]	Complete Pre-Lab	Writing: Methods Video4-Loading a gel (make and upload during lab)
4-Jul	Week 8	HOLIDAY - Lab does not meet		
11-Jul	Week 9	Analyze PCR results – 1 hr Pair PCR results with fluorescence assay results and enter data in class spreadsheet. Writing workshop	Complete Pre-Lab	Writing: Results and figure for fluorescence assay
18-Jul	Week 10	Writing Workshop Peer-review One-on-one feedback with TA Working session	Complete Pre-Lab	Writing: Results, Figures, and Discussion Video5-Pipetting (make and upload during lab)
19-Jul	-	Lab Notebook due by midnight on bio2345 website		
25-Jul	-	Lab Report due by midnight on Canvas		