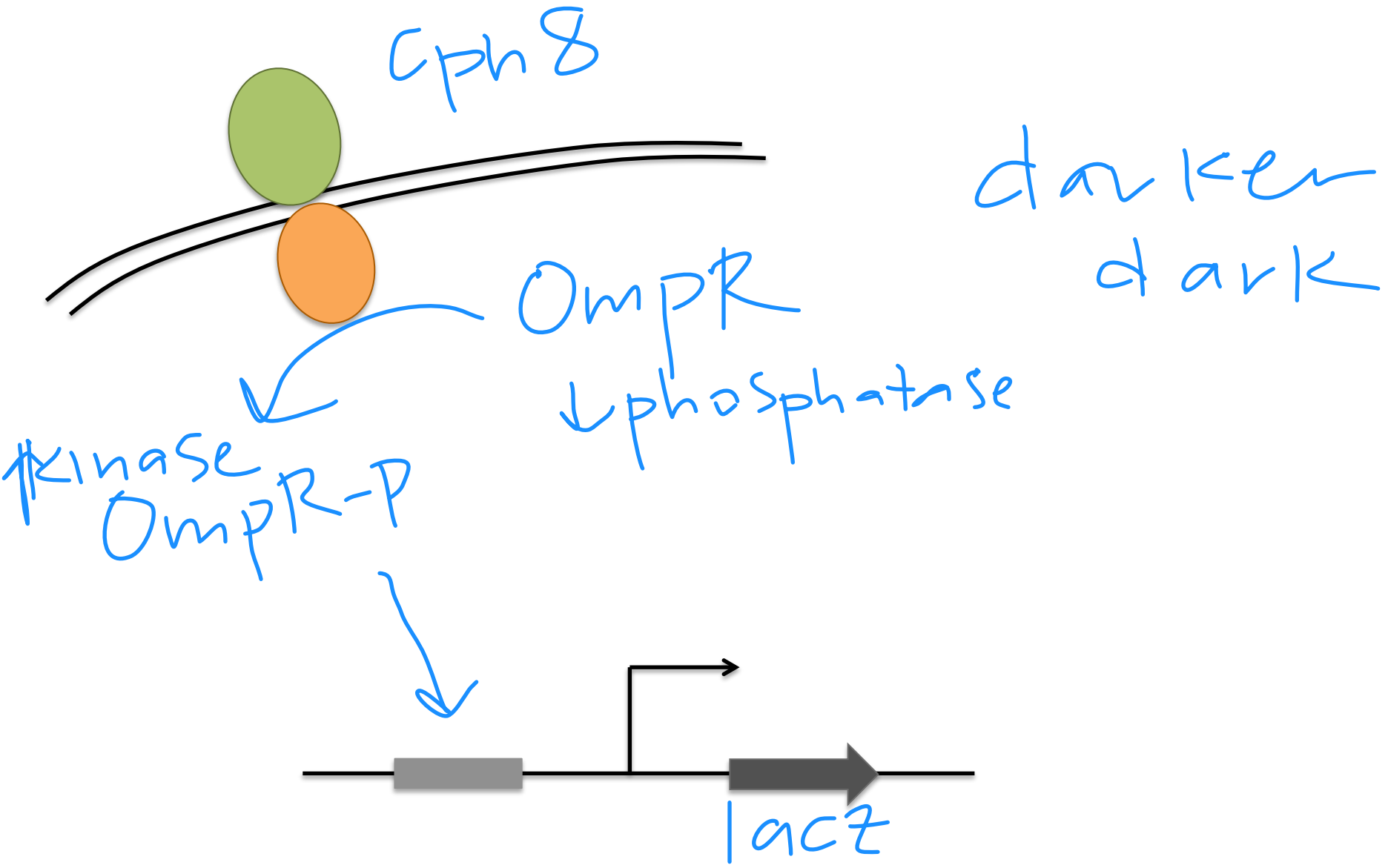
M2D3:
Tools for system engineering

10/16/14

Lab business

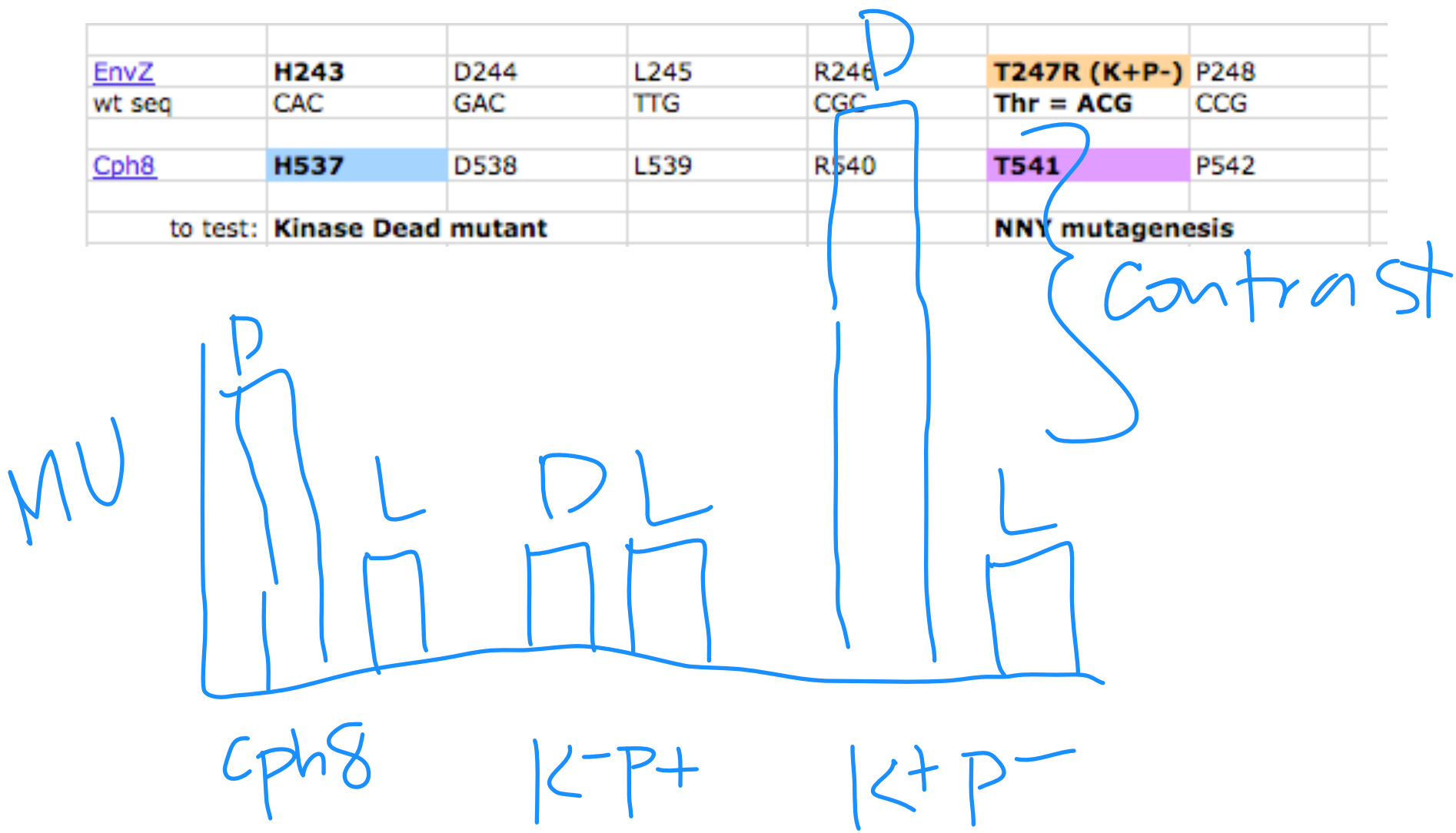
- Journal club presentations…
  - Sign up for papers!
  - Upload slides for M2D4 presentations on Stellar
  - Extra Office Hours
    - Shannon: Sunday, October 19 3-5p in Simmons 528
    - Noreen: Monday, October 20 10-12p in 16-429b
- For next week…
  - Prepare an outline for the research article that you will write for this module
  - Extra credit available for visiting the BE writing lab and summarizing the feedback
- Module 2 report due Wednesday, November 12 at 12p

How can we enhance contrast?



Altering Cph8 kinase/phosphatase activity

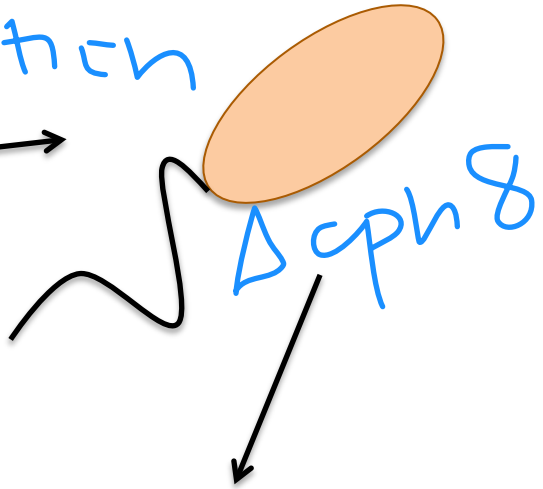
EnvZ	**H243**	D244	L245	R246	**T247R (K+P-)**	P248
wt seq	CAC	GAC	TTG	CGC	**Thr = ACG**	CCG
Cph8	**H537**	D538	L539	R540	**T541**	P542
to test:	**Kinase Dead mutant**				**NNY mutagenesis**	



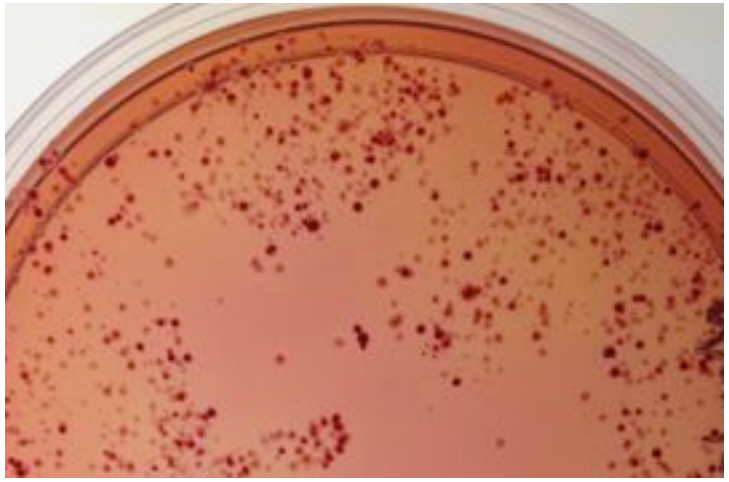
Mutant library screen

Constructed mutant library

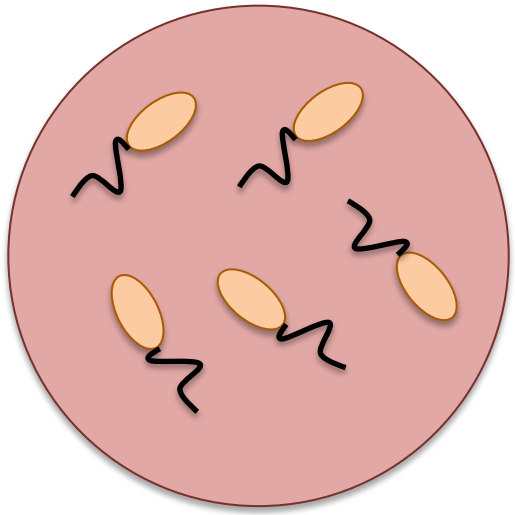
electroporation



MacConkey MUG Agar

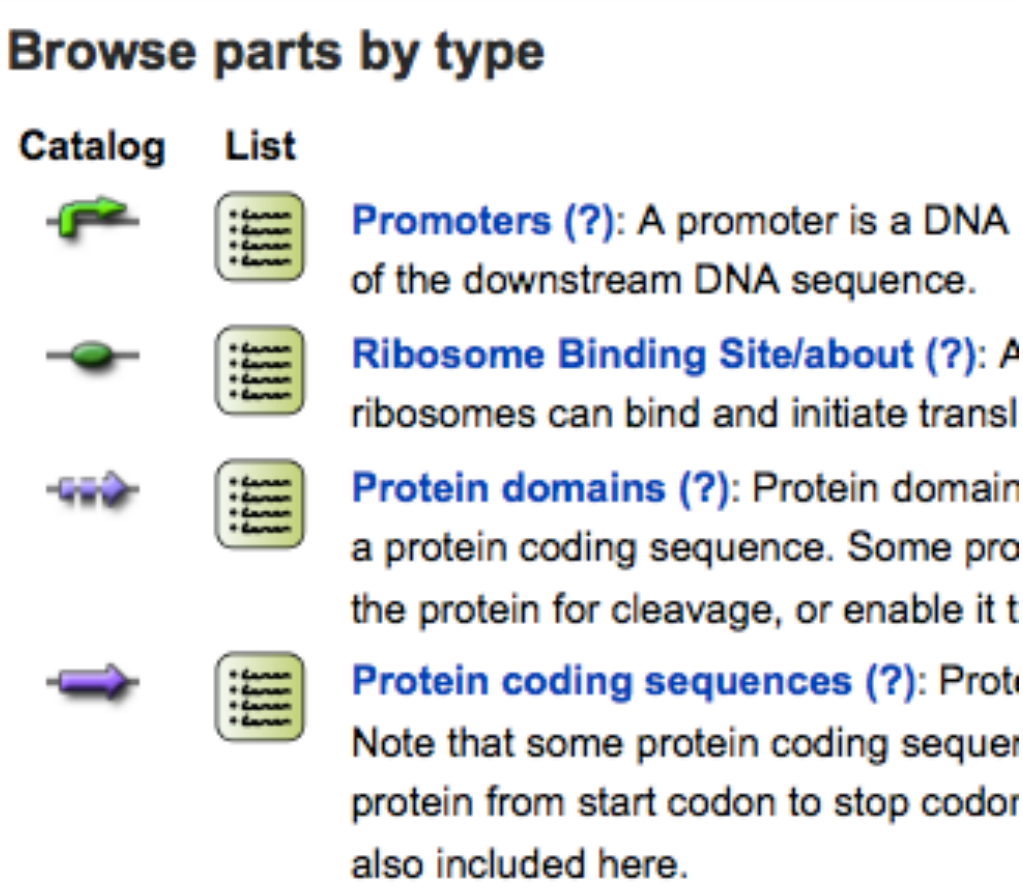


neutral red
lactose



Registry of standard biological parts

- Build a protein generating device for *E. coli*



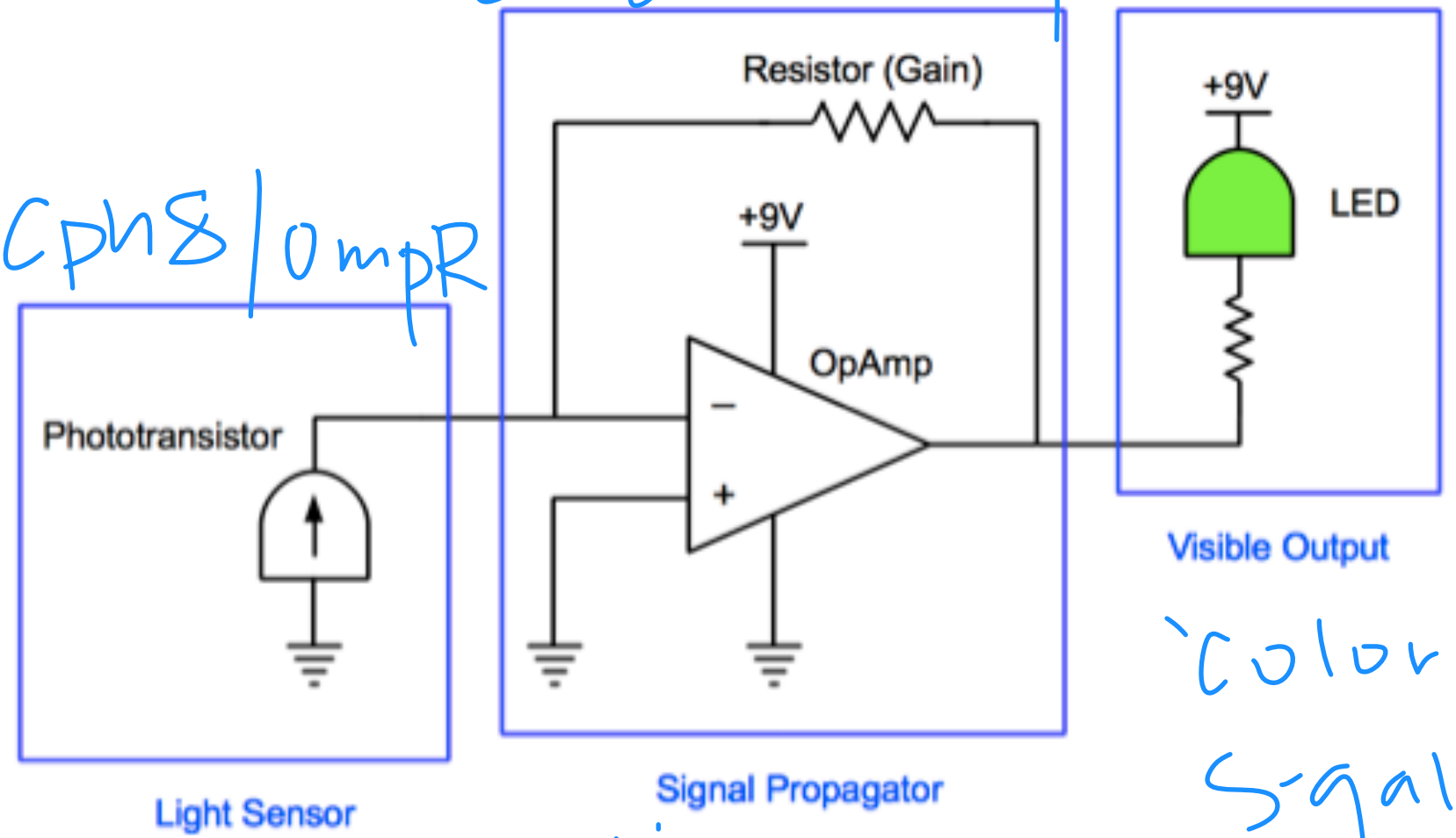
chassis

promoter

ORF

RBS

Circuits to study biological reactions



Today

- From last time…
  1. Examine/document your ‘coliroid’
  2. Finish Tinkercell simulations
  3. Share β-galactosidase assay data with class
- Today…
  1. Begin mutant screen
  2. Use registry of standard biological parts to build protein generating system
  3. Build bacterial photography system using circuit

Bacterial photography performance

Team	'Light' MU	'Dark' MU
PURPLE	48.4	1570.8
Cherries	227.2	765.2
green	365.2	618.4
mustard	327.8	913.0
Tiger	424	1224
Pink	457	1163
blue	295	962