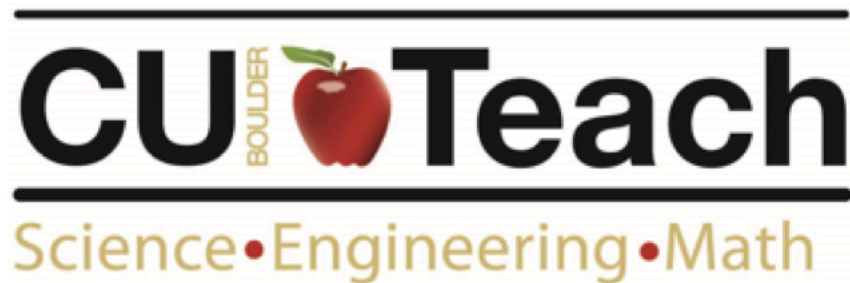


Want to explore teaching as a career?  
Interested in STEM Outreach?

*This **Spring 2018** Take...*

**Step 1: EDUC 2020 (1 credit)**

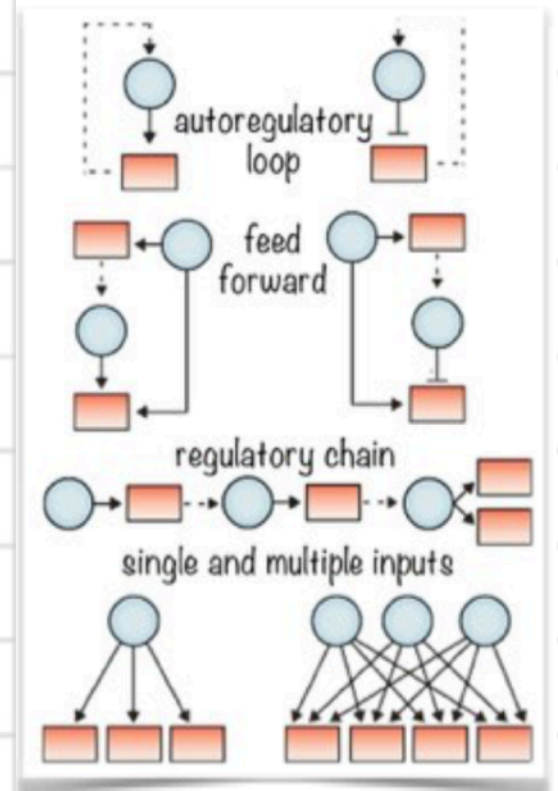
- Real experience teaching real kids, in Elementary school
- Registration priority for math, science, engineering & open option majors
- Scholarships, fellowships and internships available



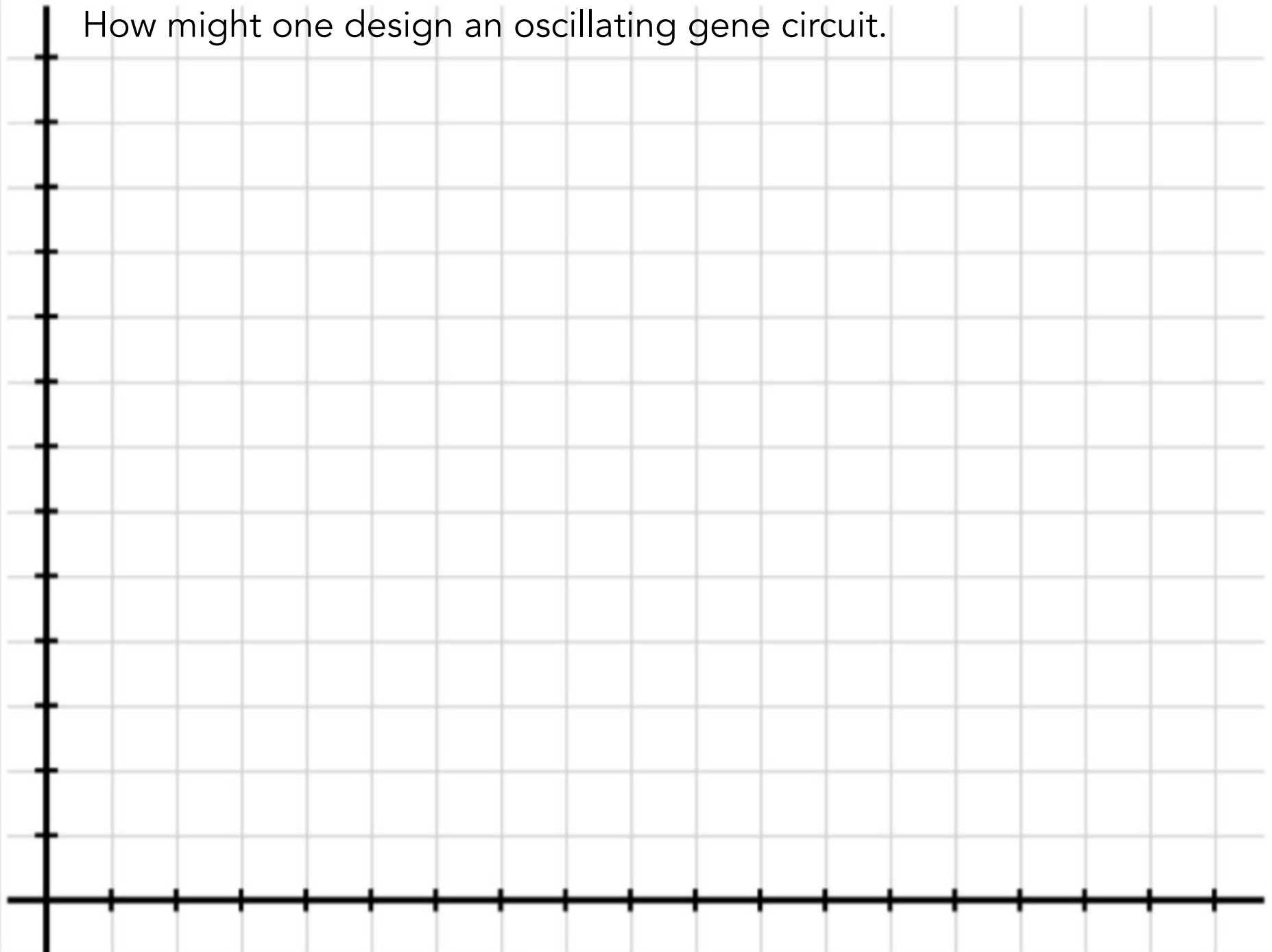
**[www.colorado.edu/cuteach](http://www.colorado.edu/cuteach)**



How would these circuits behave

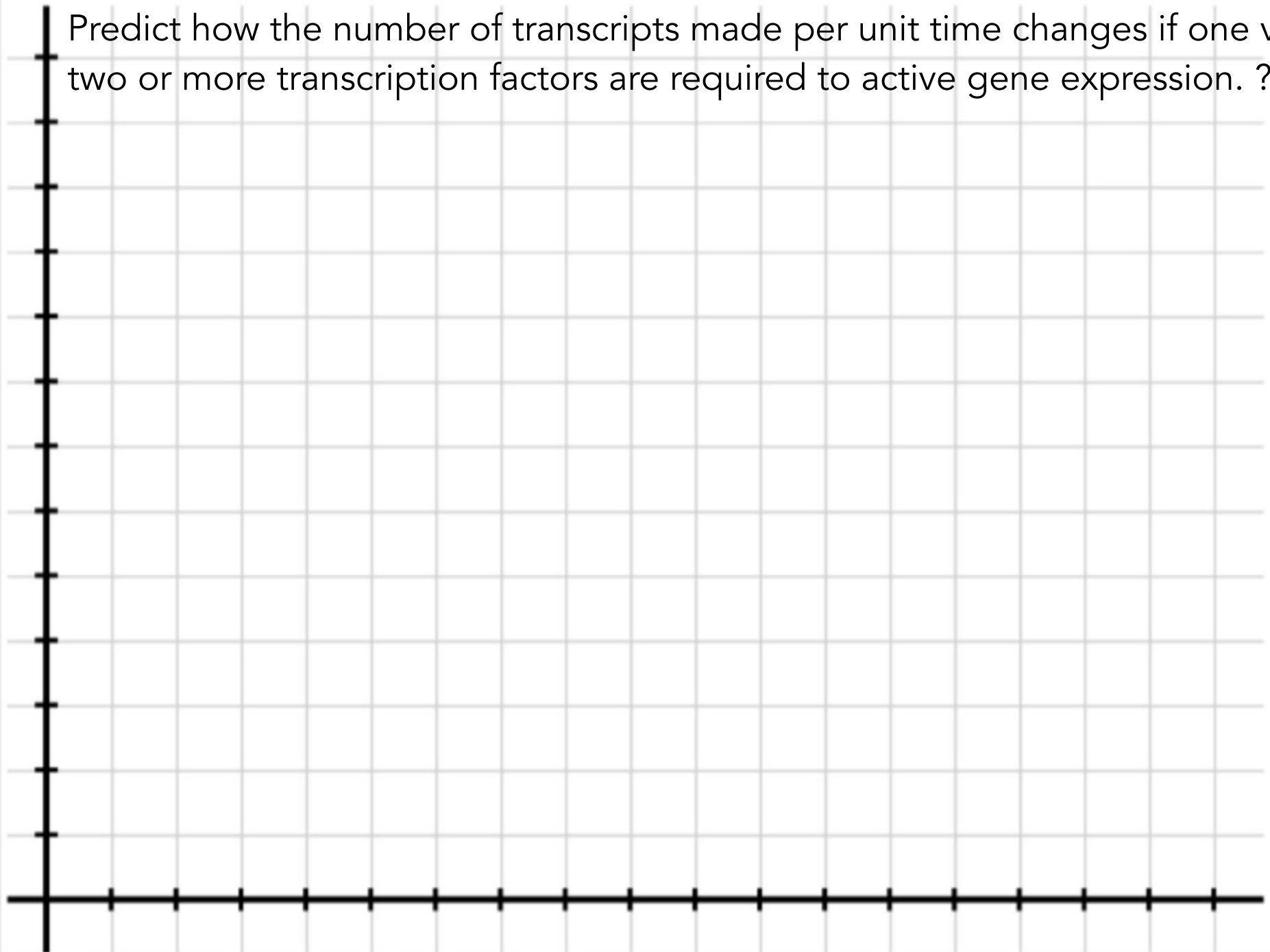


How might one design an oscillating gene circuit.





Predict how the number of transcripts made per unit time changes if one vs two or more transcription factors are required to activate gene expression. ?





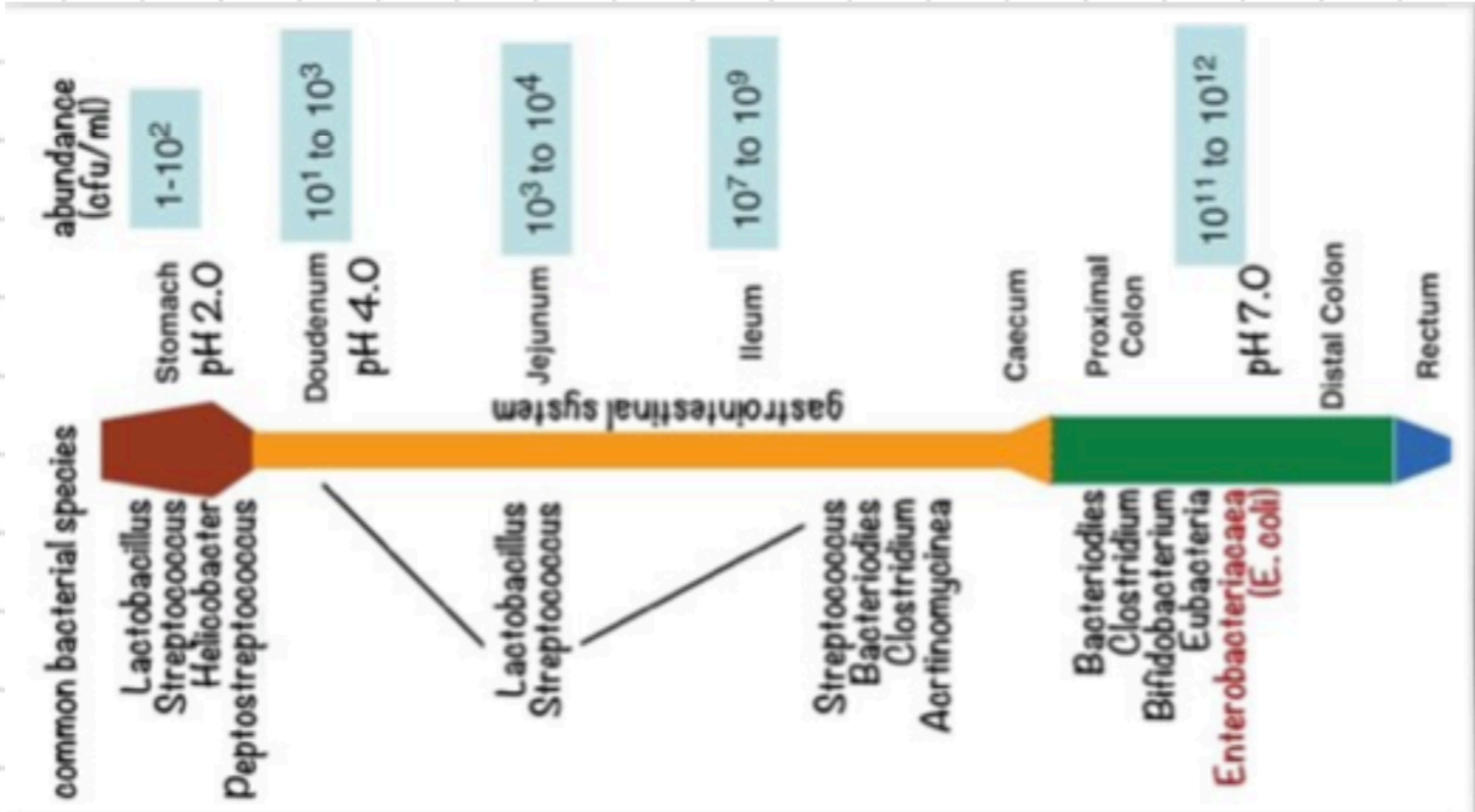
Describe the possible effects of mutations that alter i) the DNA-binding specificity of a transcription factor

ii) the DNA sequence normally recognized by that transcription factor

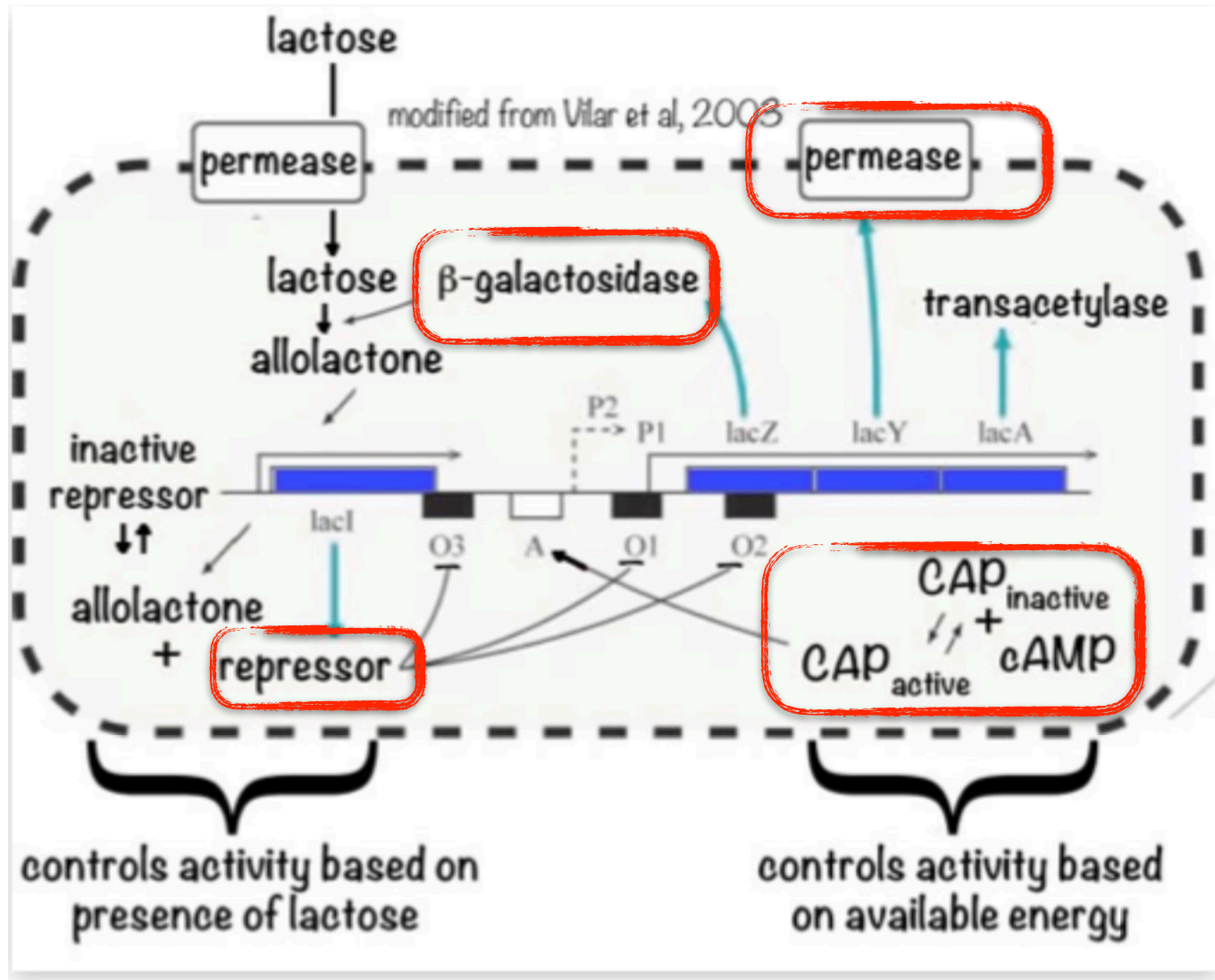
or iii) the level of transcription factor gene expression.

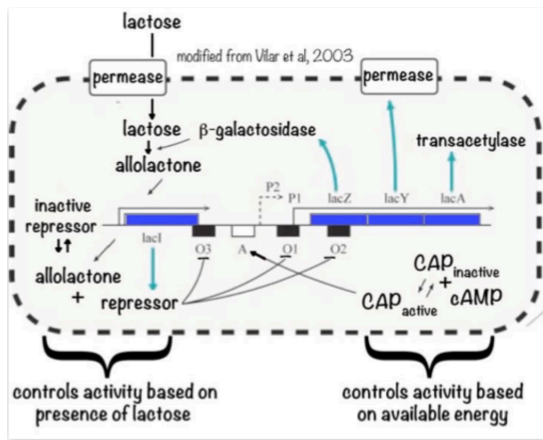


Consider the gut... estimate O<sub>2</sub> concentration as a function of position



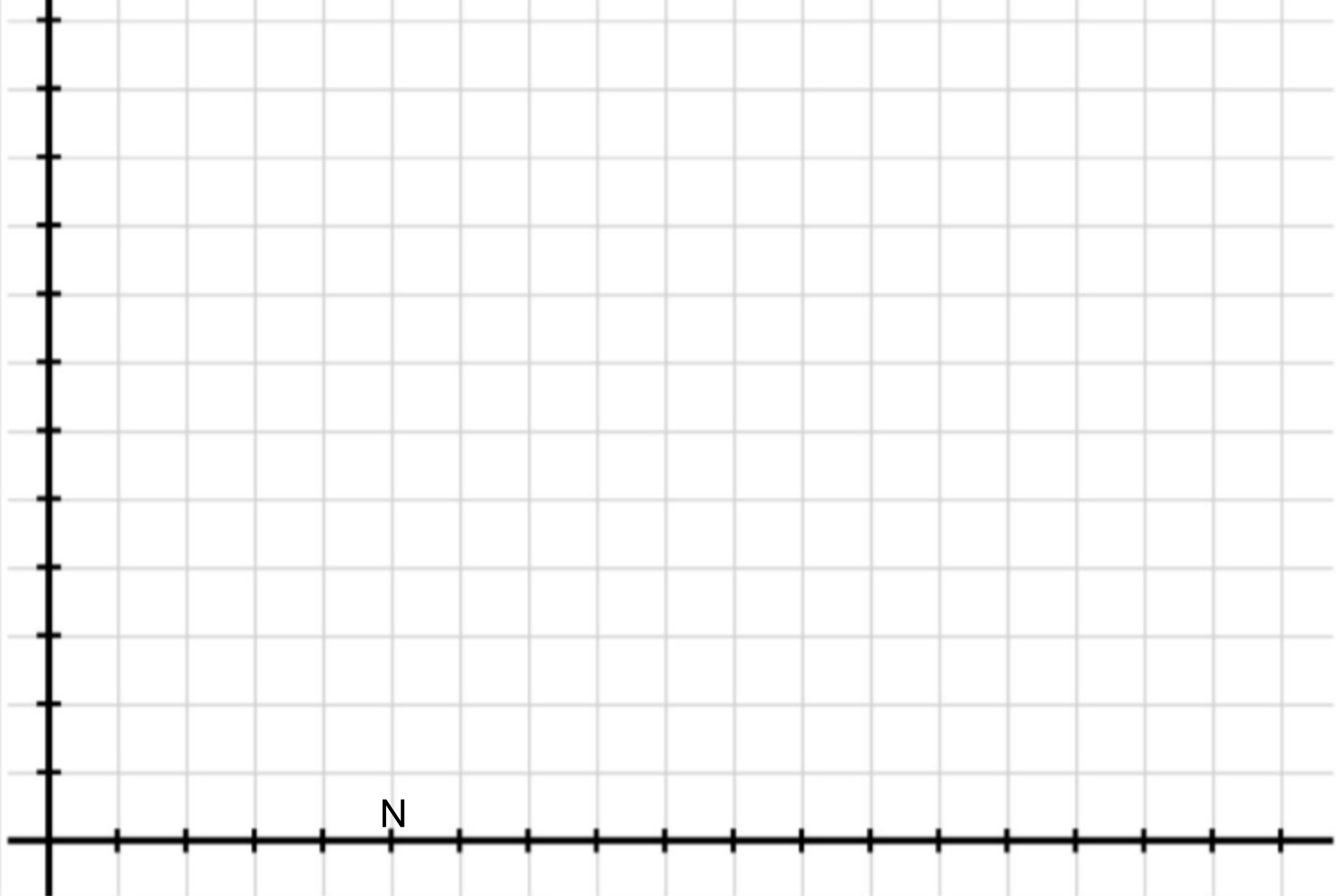
What will happen (and why) when these components are mutated? consider the presence or absence of lactose and the starvation conditions



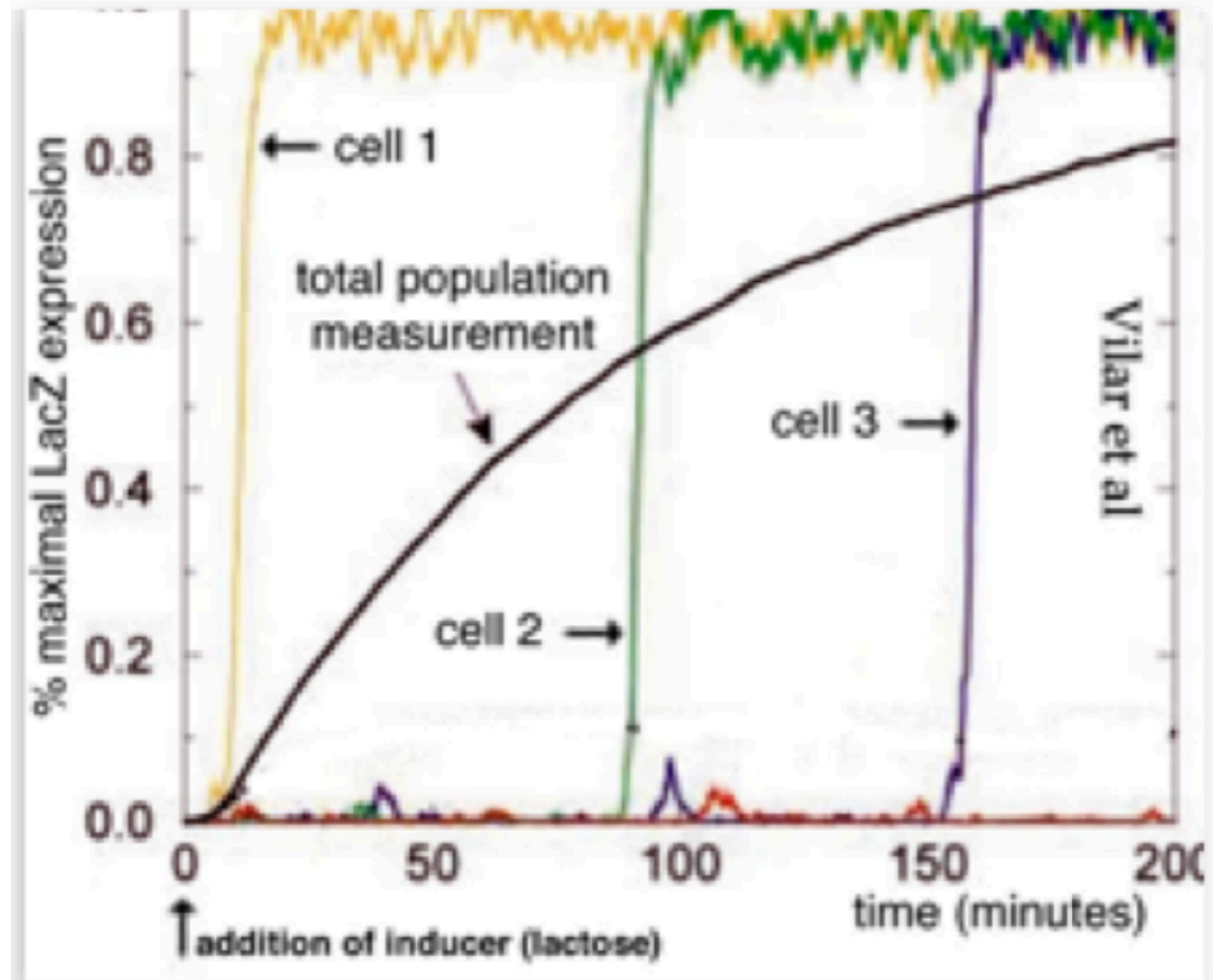


What happens (and why) when specific components are mutated? consider the presence or absence of lactose and the starvation conditions

how does the lac operon behave in the presence of lactose  
(lactose added at time N)



Why does the lac operon behave this way (in the presence of lactose)



# ExAC Browser (Beta)

## Exome Aggregation Consortium

What is a exom sequence (where does it come from?)  
What is a LoF (loss of function) allele / mutation?



What is synten?

start reading chapter 10 pp. 217-220