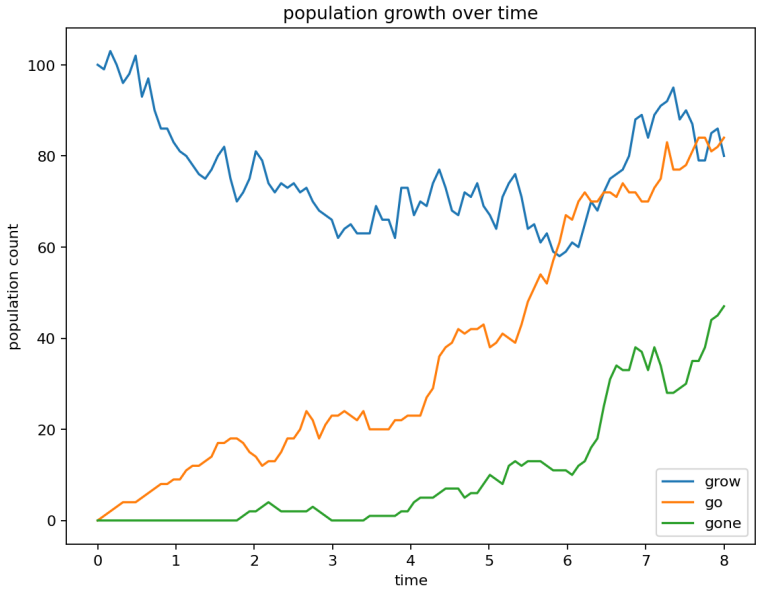
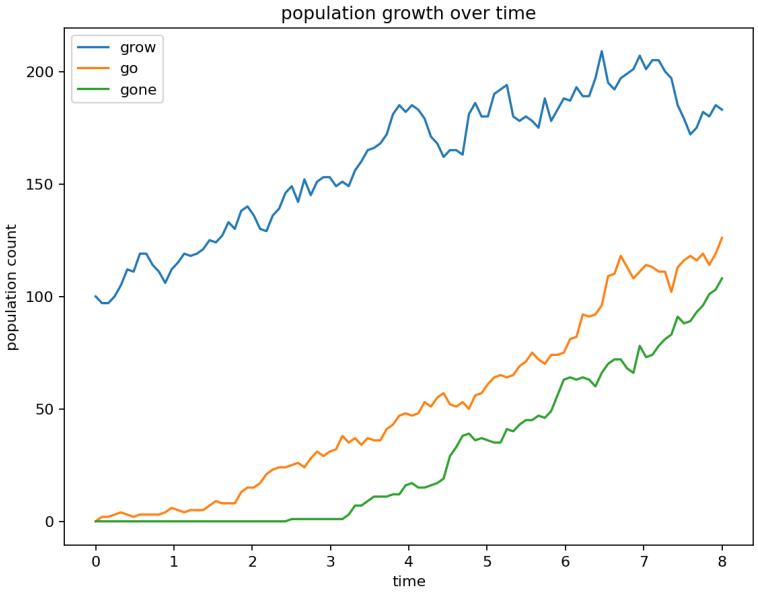
1 Initial model

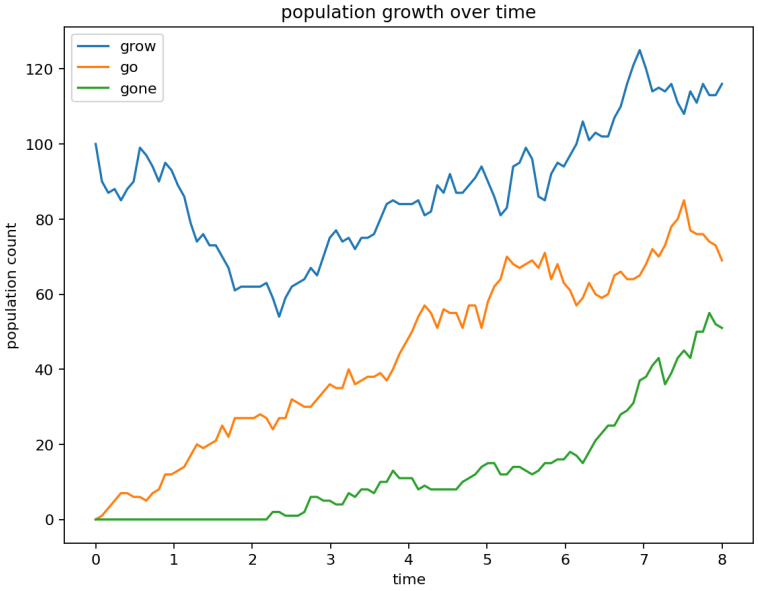
In this model, we have three populations: "go," "grow," and "gone." They each have the same birthrate and same deathrate. Additionally, go can change into grow, and grow and change into gone. The idea is to have two epithelial cell types (go and grow) and one endothelial cell type (gone). Perastalsis is not implemented in this model.

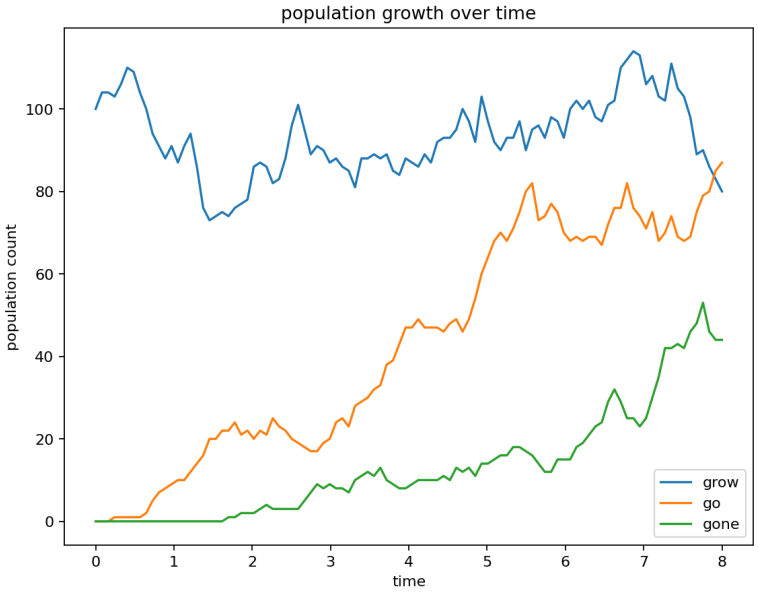
1.1 Semi-arbitrary parameter simulation

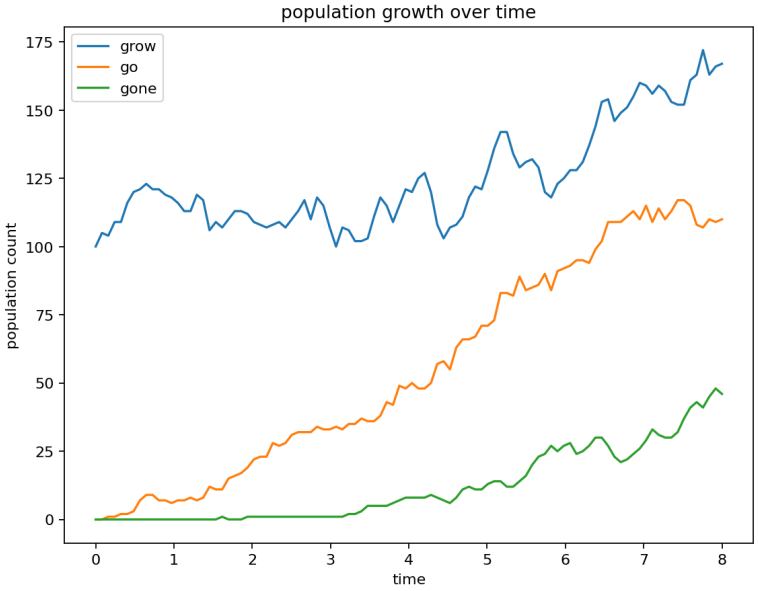
birthRate = 1.15
deathRate = 1
growToGoRate = 0.1
goToGoneRate = 0.1
startingGrow = 100
startingGo = 0
startingGone = 0
duration = 8
totalSimulations = 10000
dataPoints = 100

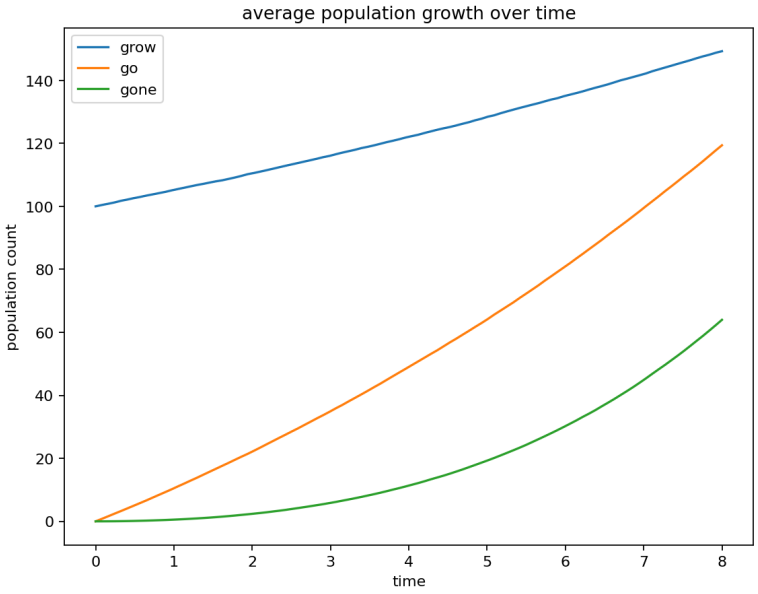


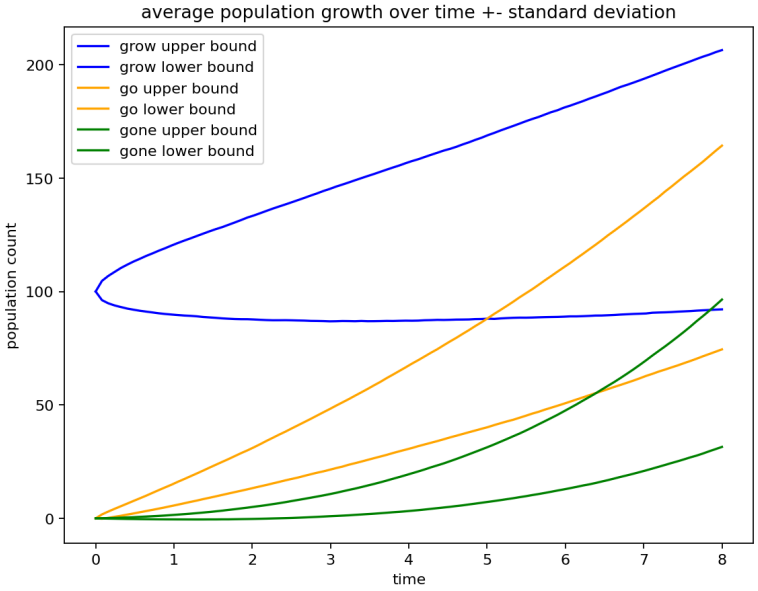

population growth over time
grow
go
gone
population count
time
0
50
100
150
200
0
1
2
3
4
5
6
7
8


population growth over time
grow
go
gone
population count
time
0
20
40
60
80
100
120
0
1
2
3
4
5
6
7
8


population growth over time
population count
time
grow
go
gone


population growth over time
population count
time
grow
go
gone


average population growth over time
grow
go
gone
population count
time
0
20
40
60
80
100
120
140
0
1
2
3
4
5
6
7
8


average population growth over time +- standard deviation
grow upper bound
grow lower bound
go upper bound
go lower bound
gone upper bound
gone lower bound
population count
time
0
50
100
150
200
0
1
2
3
4
5
6
7
8