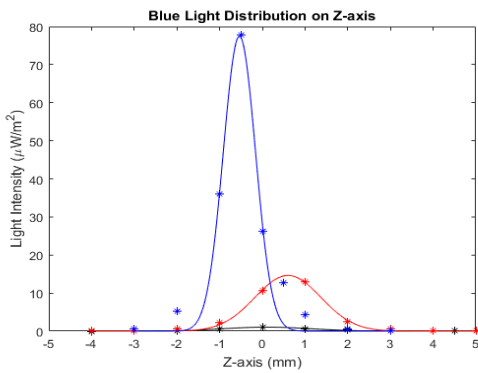# iGEM Paris Bettencourt 2017

Agar 1% (with LB)

Blue laser 450nm

Distribution I(x)=a1*exp(-((x-b1)/c1)^2)
 Coefficients (with 95% confidence bounds):
34 mm:
a1 =   1.055 (0.8754, 1.234)
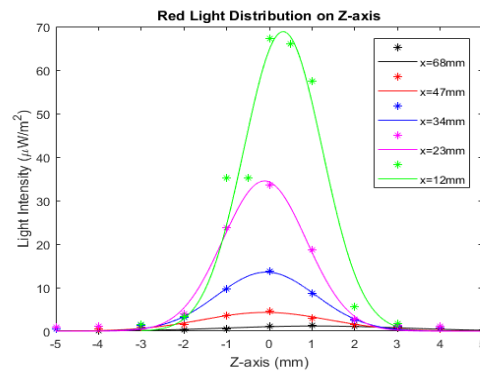b1 =   0.1072 (-0.09537, 0.3097)
c1 =   1.455 (1.17, 1.74)
23mm:
 a1 =   14.63 (13.62, 15.63)
 b1 =   0.5993 (0.5433, 0.6554)
 c1 =   1.093 (1.001, 1.184)
12mm:
 a1 =   77.46 (64.42, 90.51)
 b1 =   -0.5366 (-0.6175, -0.4557)
 c1 =   0.535 (0.434, 0.6359)

Red Laser 635nm

Distribution I(x)=a1*exp(-((x-b1)/c1)^2)
 Coefficients (with 95% confidence bounds):
68mm:
 a1 =   1.178 (1.001, 1.355)
 b1 =   1.075 (0.7068, 1.443)
 c1 =   2.957 (2.406, 3.507)
47mm:
a1 =   4.304 (3.694, 4.914)
b1 =   -0.09108 (-0.3336, 0.1514)
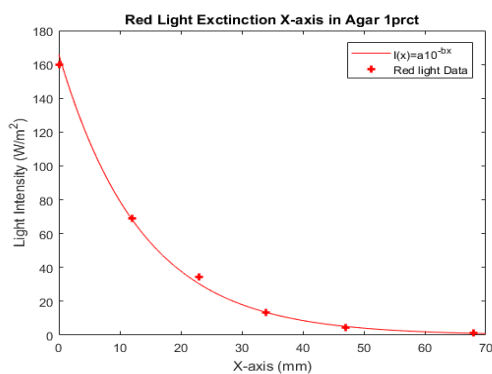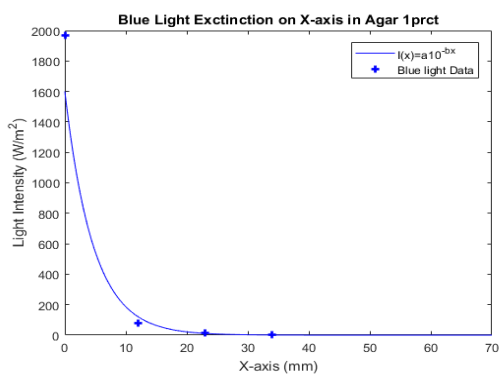c1 =   2.095 (1.752, 2.438)
34mm:
 a1 =   13.56 (12.46, 14.67)
b1 =   -0.06945 (-0.1787, 0.03978)
c1 =   1.639 (1.485, 1.794)
23mm:
a1 =   34.51 (32.78, 36.23)
b1 =   -0.1118 (-0.1686, -0.055)
c1 =   1.384 (1.304, 1.463)
12mm:
a1 =   68.83 (56.22, 81.43)
b1 =   0.323 (0.09763, 0.5483)
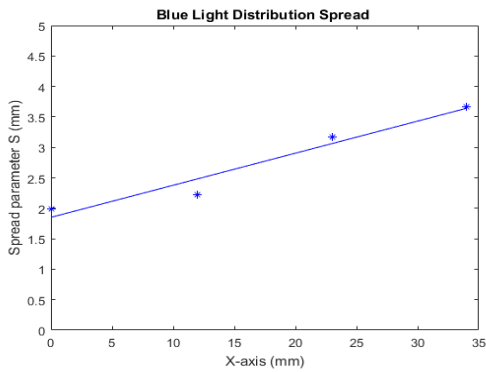c1 =   1.301 (0.9548, 1.648)

I(x)=10^(p1x)*10^(p2)
   Coefficients (with 95% confidence bounds):
 p1 =   -0.09341 (-0.1224, -0.06445)
 p2 =   3.204 (2.585, 3.823)
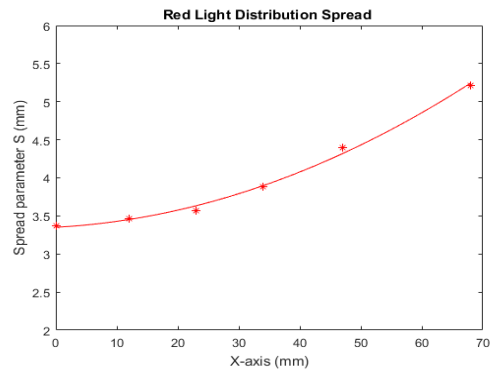
I(x)=10^(p1x)*10^(p2)
   Coefficients (with 95% confidence bounds):
 p1 =   -0.03208 (-0.03469, -0.02948)
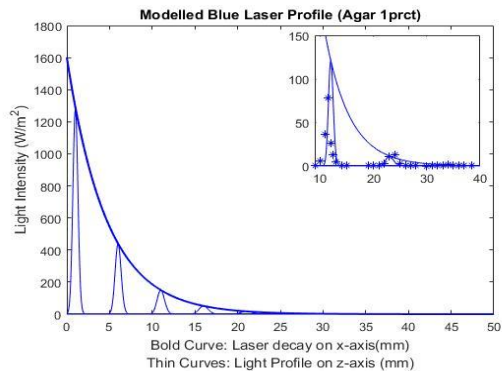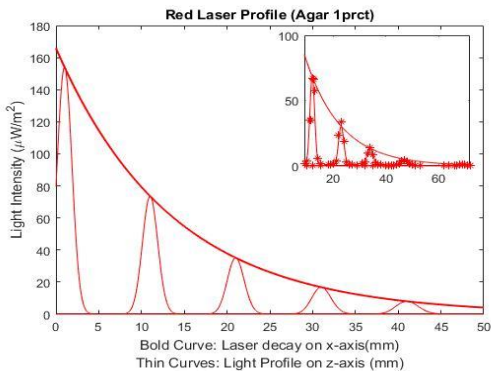 p2 =   2.22 (2.121, 2.319)
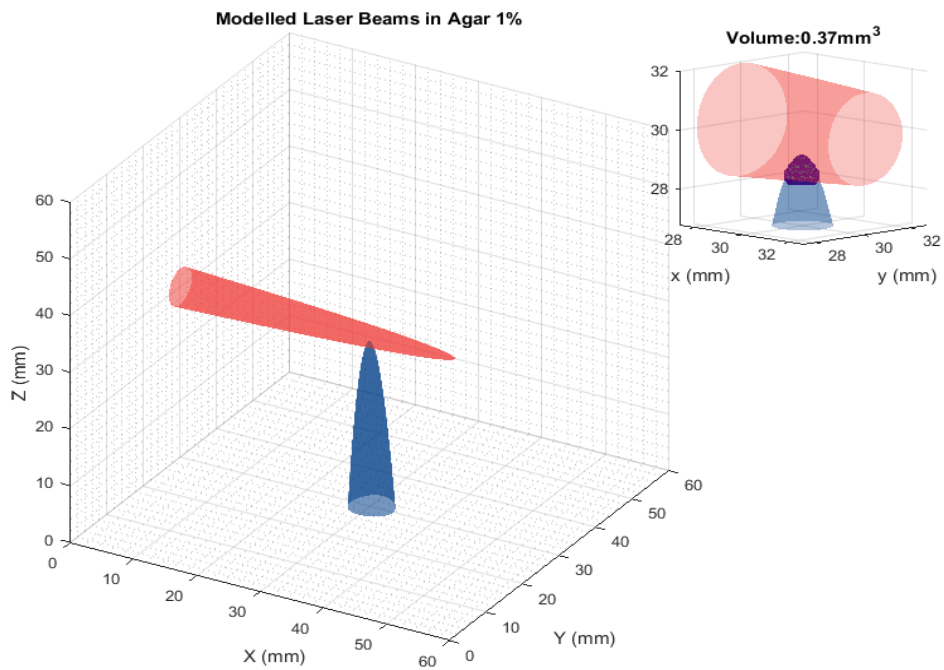

S(x)=ax+b
 a= 0.0527
 b=   1.8516

S(x)=ax^2+bx+c
a=0.0003
b= 0.0043
c= 3.3511

Model summary: intensity decay and light distributions (inset shows raw data points)

Modelled lasers' shapes and intesection volume
(inset shows predicted volume where bacteria will be activated)