

# (A) density maintenance theory

$$\frac{S_A}{V} = \frac{\text{cytoplasm-membrane density ratio} \cdot \kappa \phi_{mem} \cdot \text{membrane proteome allocation}}{2(1 - \phi_{mem} - \phi_{peri} + \beta \phi_{rib})}$$

surface-to-volume ratio

periplasmic proteome allocation

RNA-protein ratio

uncertainty: 95%, 68%, median,  $\approx 1\sigma$ ,  $\approx 2\sigma$

