ENERGETICS OF CELL SHAPE

DEFORMATION ENERGY
(LEAFLETS OF EQUAL AREA)

$$E = (\kappa_{BEND}/2) \int (C_1 + C_2)^2 \, dA \quad + \quad \text{GAUSSIAN TERM}$$
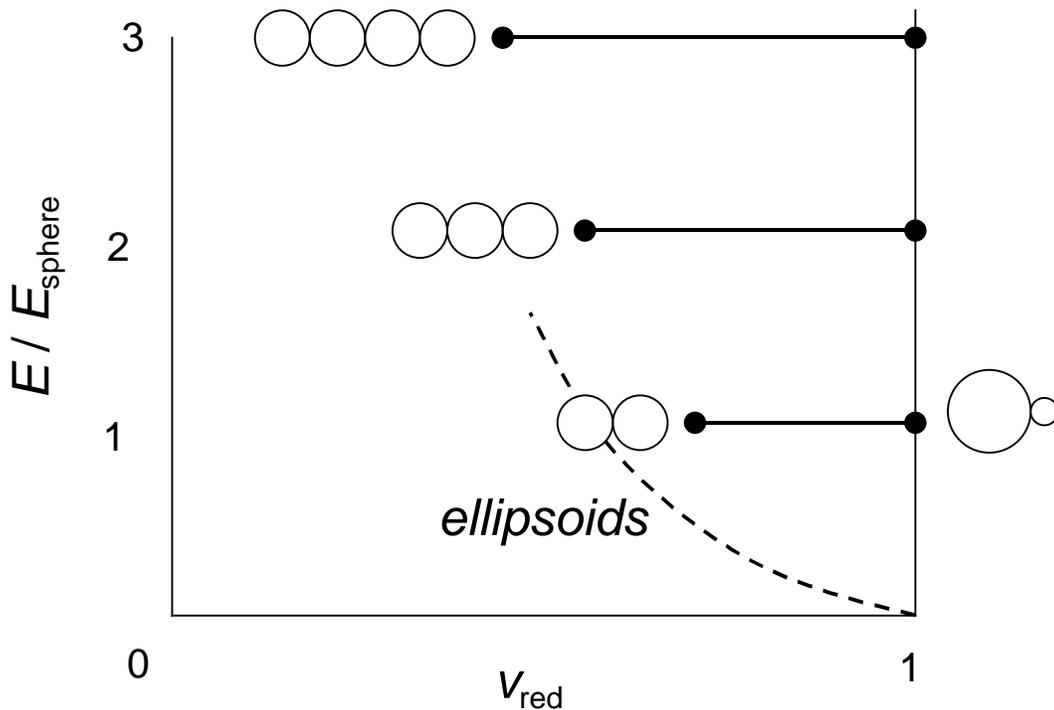
$$v_{RED} = \text{REDUCED VOLUME} = 6 \quad V / A^{3/2}$$

$$v_{RED} = 0.71 \quad \text{FOR 2 SPHERES}$$

DEFORMATION ENERGIES CHANGE IF
BILAYER HAS SPONTANEOUS CURVATURE C_O

$$E = (\kappa_{BEND}/2) \int (C_1 + C_2 - C_O)^2 \, dA \quad + \quad \text{GAUSSIAN TERM}$$

EXAMPLE: ADD EXTRA LIPID TO OUTER LEAFLET