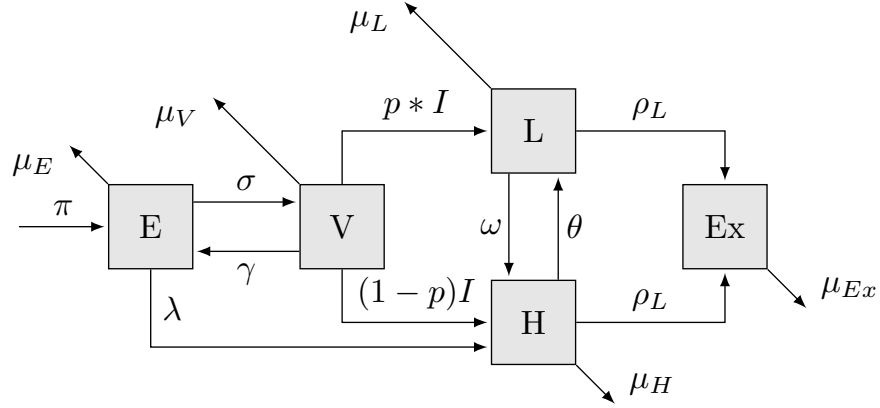# October 22, Model Write Up

Charles Marks

1 The Model

$$\frac{dE}{dt} = \pi + \gamma - \sigma - \lambda - \mu_E$$

$$\frac{dV}{dt} = \sigma - \gamma - I - \mu_V$$

$$I = c\beta \frac{L + \eta H}{E + V + L + H + Ex}$$

$$\frac{dL}{dt} = pI + \theta - \omega - \rho_L - \mu_L$$

$$\frac{dH}{dt} = (1 - p)I - \theta + \omega + \lambda - \rho_H - \mu_H$$

$$\frac{dEx}{dt} = \rho_L + \rho_H - \mu_E x$$