

Final equations:

$$\frac{dN}{dt} = rN((\gamma_1 - \delta_1)(1 - (\frac{\frac{v_3}{a_3} - O_2(N, M)}{cp})) - p_3) \quad (1)$$

$$\frac{dM}{dt} = rM((\gamma_2 - \delta_2)(1 - (\frac{\frac{v_3}{a_3} - O_2(N, M)}{cp}))) + rN(2p_3 + p_2) - MsI \quad (2)$$

$$\frac{dI}{dt} = r_iM(1 - \frac{I}{I_H + \text{Recruit}MI}) \quad (3)$$

Driver Feedbacks to Cancer:

$$\delta_2 = \delta_2(\frac{1}{1 + \frac{d_i}{mut}}M\text{Feedback}_\delta) \quad (4)$$

$$\gamma_2 = \gamma_2 + \gamma_2(\frac{\text{MaxGammaAdd}}{1 + \frac{\frac{d_o}{mut}M}{\text{Feedback}_\gamma}}) \quad (5)$$

Driver Feedbacks to Immune system:

$$S = S\frac{1}{1 + M\text{Insensitive}} \quad (6)$$

$$\text{Recruit} = \text{Recruit}\frac{1}{1 + EM} \quad (7)$$