

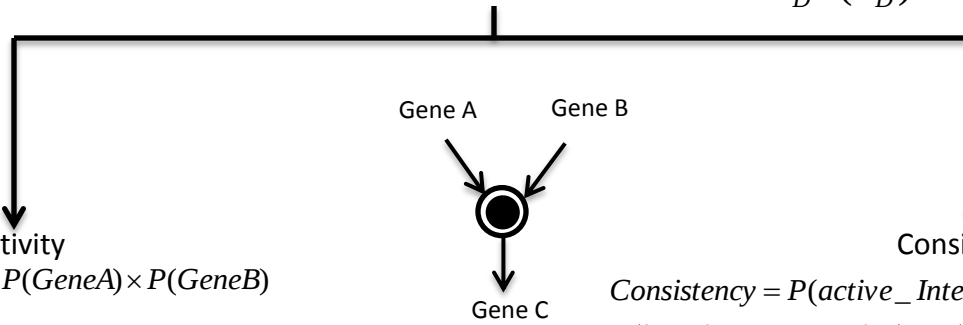
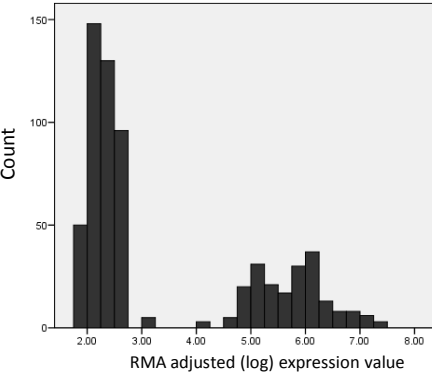
RMA Expression levels



Up Down Probabilities are calculated from the RMA levels

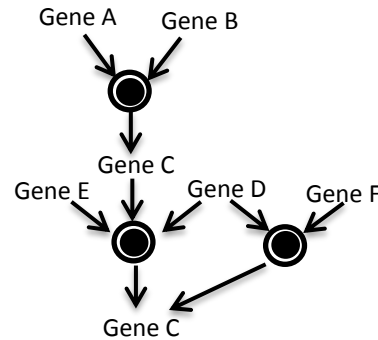
$$p(x, Up) = p(Up) \times f(x | a_U, b_U) = \frac{N_U}{N} \times \frac{1}{b_U \Gamma(a_U)} X^{a_U-1} e^{-\frac{x}{b_U}}$$

$$p(x, Down) = p(Down) \times f(x | a_D, b_D) = \frac{N_D}{N} \times \frac{1}{b_D \Gamma(a_D)} X^{a_D-1} e^{-\frac{x}{b_D}}$$



$$Interaction_Activity = P(GeneA) \times P(GeneB)$$

$$Consistency = P(active_Interaction) \times P("Up"_output_gene) + P(inactive_Interaction) \times P("Down"_output_gene)$$



$$Pathway_Activity = Average(InteractionA + \dots + InteractionN)$$

$$Pathway_Consistency = Average(InteractionA + \dots + InteractionN)$$