



$$H_{ij} \sim \text{Binomial}(\theta_{ij}^H, s)$$

$$Fa_{ij} \sim \text{Binomial}(\theta_{ij}^F, s)$$

$$\theta_{ij}^H \leftarrow \phi(\frac{1}{2}D_{ij} - C_{ij})$$

$$\theta_{ij}^F \leftarrow \phi(-\frac{1}{2}D_{ij} - C_{ij})$$

$$D_{ij} \sim \text{Gaussian}(\mu_{ij}^D, \lambda_{ij}^D)$$

$$C_{ij} \sim \text{Gaussian}(\mu_{ij}^C, \lambda_{ij}^C)$$

$$\mu_j^C, \mu_j^D \sim \text{Gaussian}(0, 0.001)$$

$$\lambda_j^C, \lambda_j^D \sim \text{Gamma}(.001, .001)$$

$$\delta_i \leftarrow \mu_1^D - \mu_2^D$$