Model Statement: NRES 746 Final Project

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\begin{aligned}
&\textbf{Data Model} \\
&\qquad \mathbf{y} \sim \text{Bernoulli}(\phi) \\
&\textbf{Process Model} \\
&\qquad \text{Logit}(\phi) = \beta_0 + \beta_1 \text{size} + \epsilon \\
&\textbf{Prior Model} \\
&\qquad \boldsymbol{\beta} \sim \text{Normal}(0, 1) \\
&\qquad \epsilon \sim \text{Normal}(0, \sigma^2) \\
&\qquad \sigma^2 \sim \text{Inverse Gamma}(0.01, 0.01)
\end{aligned}
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- y is the response variable
- $\boldsymbol{\phi}$ is the probability of an event occurring
- $\boldsymbol{\beta}$ is a vector of values describing our regression parameters
- ϵ is the error associated with the deterministic regression statement describing ϕ
- σ^2 is the variance describing the normal distribution for ϵ