$$[\boldsymbol{\lambda}, \alpha, \beta|\mathbf{y}] \propto \prod_{i=1}^{n} \text{Poisson}\,(y_i|\lambda_i)\,\text{gamma}\,(\lambda_i|\alpha,\beta)\,\text{gamma}\,(\beta|.001,.001)\,\text{gamma}\,(\alpha|.001,.001)$$

Writing the full-conditional distribution for β:

$$[\beta|.] \propto \prod_{i=1}^{n} \text{gamma}\,(\lambda_i|\alpha,\beta)\,\text{gamma}\,(\beta|.001,.001)$$