# Animal Model:

- Predicted breeding values for all animals
- Model : $y = Xb + Zu + e$ $\longrightarrow$ $u = \begin{bmatrix} u_1 \\ u_2 \\ u_3 \\ u_4 \\ \vdots \\ u_8 \end{bmatrix}$
- $D = var(u) = \begin{bmatrix} var(u_1) & cov(u_1, u_2) \cdots \\ cov(u_2, u_1) & var(u_2) \cdots \end{bmatrix}$

$$D = A \cdot \underbrace{\sigma_u^2}$$

genetic - additive variance, often specified $h^2 = \sigma_u^2 / \sigma_p^2$

$\sigma_p^2 = \sigma_u^2 + \sigma_e^2$

$\Rightarrow \lambda = \sigma_e^2 / \sigma_u^2$