- Statistical Model:
  - Response variable y: Phenotypic observations of trait of interest (Methane, Ketosis)
  - Predictor variables: $x_1, x_2, \ldots x_k$
  - Error / Residual: e
  - function $m(x_1, x_2, \ldots, x_k)$ with $\underline{x} = \begin{bmatrix} x_1 \\ x_2 \\ \vdots \\ x_k \end{bmatrix}$
    $\Leftrightarrow m(\underline{x})$
  - Function $m(\underline{x})$ is used to relate the predictor ($\underline{x}$) to the response y

- The simplest class of relationships between $\underline{x}$ and y is a linear relationship, for animal i:

$$y_i = m(\underline{x}_i) + e_i$$

- Example Dataset

Animal	Body Weight	Breast Circumference
1	471	176