**Wednesday 5/21/2025**

Paper Discussion : Chevalier, V., Rakotondrafara, T., Jourdan, M., Heraud, J. M., Andriamanivo, H. R., Durand, B., ... & Rakotondravao, R. (2011). An unexpected recurrent transmission of Rift Valley fever virus in cattle in a temperate and mountainous area of Madagascar. *PLoS Neglected Tropical Diseases*, *5*(12), e1423.

1. What is the researcher’s research question? *C’est quoi la question de recherche ?* 
   1. What are the factors which influence the prevalence of antibodies against RVFV in cattle in Anjozorobe district? What factors predict the transmission of RVFV?
   2. Factors: age, location of night pen, minimum distance from pen to nearest water source and forest, nearest water point type, adding individuals to herd
   3. *Factors we would add* : vector abundance
2. What model did the researchers use? If you were to write this model in R code, how would you write it? *Quel modèle utilisent-ils les auteurs ? Si vous deviez écrire ce modèle dans R, comment l’écririez-vous ?*
   1. Hypothesis: The prevalence of antibodies against RVFV is influenced by age, distance, … etc.
      1. Smaller distance to water source is associated with higher RVFV seroprevalence.
   2. Response Variable: Individual Seropositivity for RVFV
   3. Predictor Variables: Age, Distance Night Pen to Water, Distance Night Pen to Forest, Type of Water Point, Herd Replacement, Breeder
   4. Distribution: Binomial
   5. Link: Logit
   6. R Code:
      1. glmer(individual\_status ~ age + distance\_water + distance\_forest + water\_type + replacement + (1 | breeder), family = “binomial”, link = “logit”, data = data)

***WHAT IF…***

* 1. Response Variable: Percent of herd that is seropositive for RVFV
  2. Predictor Variables: Age, Distance Night Pen to Water, Distance Night Pen to Forest, Type of Water Point, Herd Replacement, Breeder
  3. Distribution: Normal
  4. Link: Identity

***WHAT IF…***

1. Response Variable: Number of cows seropositive for RVFV
2. Predictor Variables: Age, Distance Night Pen to Water, Distance Night Pen to Forest, Type of Water Point, Herd Replacement, Breeder
3. Distribution: Poisson
4. Link: Log
5. What are the main findings of the paper? *Quelles sont les principales conclusions de l’article ?* 
   1. Seroprevalence was 28%.
   2. Seropositivity is significantly associated with age and minimum distance to water point. Seropositivity is negatively correlated with distance to water. Seropositivity is positively correlated with age.
   3. Water point type was not significantly associated with seropositivity.
   4. Minimum distance to the forest was not significantly associated with seropositivity.
   5. Replacement was significantly positively associated with seropositivity.
6. What does Figure 2 show? *Qu’est-ce que Figure 2 démontre ?* 
   1. X-axis = age (years)
   2. Y-axis (left) = number of individuals
   3. Y-axis (right) = seroprevalence
   4. Seroprevalence increases with age.