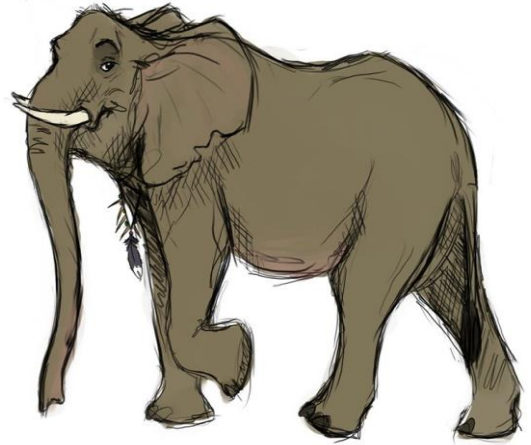


Exercise 8 – Linear Mixed Models Due March 6, 2024

In her last trip to Africa, a UCF researcher evaluated some allometric relationships in elephants. She collected data on body length and body mass for 10 elephants in 20 separate populations.



1. Use the `Exercise8_data.txt` script provided in the class website to generate a sample [elephants] following the description above (you only need to run it once and then keep the data as a fixed input for your analyses).
2. State *your* scientific hypothesis.
3. Inspect and plot your data (publication quality).
4. Select and justify a statistical model to test your hypothesis using the data.
5. Verify the assumptions of the model you selected using plots.
6. Plot your *predictive* model along with its 95% CI (publication quality).
7. Compare your results to those of at least one other student in the class.
8. Interpret your results.

Hint: start with a simpler model and as you add more complex parameterizations, justify why you think the changes are appropriate in this case, think back to what we did in this week's demo

NOTE 1: The variable 'Length' was standardized to avoid having a meaningless intercept

NOTE 2: Please submit your answers as a single document (PDF preferred) by emailing Michelle (Michelle.Bardales@ucf.edu). Remember to include the appropriate R file as well.