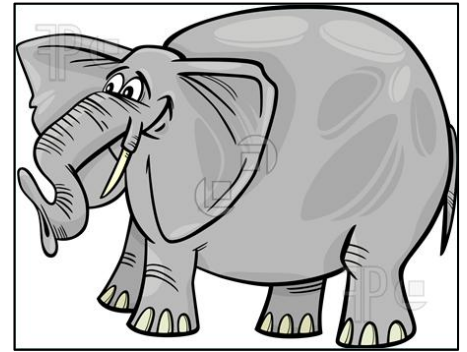


# Methods in Experimental Ecology II (PCB 6468)

## Exercise 6 – Linear Mixed Models

### Due March 4, 2016



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

1. Use the `Exercise6_data.R` 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*** predicted model with 95% CI (publication quality).
7. Compare ***your*** results to, at least, another student in 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 demonstration.*

**NOTE 1:** Length was standardized to avoid having a meaningless intercept.

**NOTE 2:** Please submit your paper as a single word document. Remember to include your raw data and all the appropriate R code as appendices at the end.