

*SCS 2017: Longitudinal and Nested Data*

Day 1 – Part 1

# The Fundamental 2 x 2 Table of Statistics

*– or when Statistics seem to lie they are  
usually just answering a different question*

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Day 1 – Part 2

# Statistical Reasoning with Ellipses: The Data Ellipse

Simple regression, the regression paradox,  
the anatomy of outliers: fit vs. leverage,  
significance at a glance

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Day 1 – Part 3

# Statistical Reasoning with Ellipses: The Beta Ellipse

Simpson's Paradox, Confounders and Mediators,  
Variance Inflation, Perils of Statistical Model Selection,  
Added Variable Plots

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Day 1 – Part 4

# Getting Started with R and R Studio

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# Mixed Models with R: Hierarchical Models to Mixed Models

*– two equivalent views of nested data that reveal different and important features*

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# Mixed Models with R: Longitudinal Data Analysis

*– the special roles of time*

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# Mixed Models with R: Non-linear Models – Asymptotic Functions of Time