

# Stump the Statistician

Miscellaneous Design, SAS  
questions

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- Stratified main effects instead? (May require different error terms.)

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  - “redo” of ANOVA on  $|r_i|$  (or  $r_i^2$ ).
  - If there are problems, points to a solution.

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- Removal based on test results as a final resort.

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  - Interpretation of outliers.
- Address normality first, constant variance 2<sup>nd</sup>.
- Don't believe what you learned in school.
  - E.G., re: arcsine square root transformation.

# Sample size calculation

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  - Tools include Russ Lenth's applets.

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- Transform if necessary.
- Nonlinear tools (e.g., GAM)

# Changing your ANOVA model

7. On a multiple factor test I run the anova with the block and all interaction terms, all of which turn out to be non-significant. The main effects are not quite significant at  $p < 0.05$ . Is it kosher to run the anova again without the block and interaction terms in the model (thereby increasing the error d.f. and increasing the chance of a significant main treatment effect)?

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– Why did you block in first place?

- Opportunity to correct stupid mistakes?

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  - Scheffe is only method for which  $F \leftrightarrow post\ hoc$

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  - Newer methods: more flexible but misunderstood.

# Non-classical analysis

10. Are we too "uncreative" because of our traditional training with "aggie statistics" to be able to come up with or readily use other means for analyzing systems or phenomena that we are interested in? How do we best learn more creative approaches to doing our analytical work?



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  - Follow new developments in S-plus or R (or SAS, for that matter).