Using R for teaching statistics to nonmajors: Comparing experiences of 2.5 different approaches

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**Approaches**

- Based on guided code generation
  - RCommander and extensions
  - Temple University has a course based on this approach
- Based on exploring existing code
  - RPad
  - University of Vienna has a course based on this approach
- Based on spreadsheet interaction
  - RExcel
  - University of Vienna has lab classes based on this approach
Approach allows students to use a tool they already know and embed advanced statistical methods in the spreadsheet paradigm.

At the same time, prior spreadsheet experience can help with data manipulation and graphics creation.
Temple University currently teaches an introductory statistics course based on RCommander and RExcel.

Statistics with Excel always needs an addin. We use R, the best possible addin.

We use the RExcel interface to get data from Excel into R and to get tabular results back from R.

RCommander provides a clickable menu interface to R.

In the R GUI, enter library(Rcmdr.HH)

This starts the Rcmdr window with the HH menu.

Highlight and right click a region in Excel

Send the region to Rcmdr.
Click the “Statistics/Fit Models/Best Subsets Regression” menu
Fill in the model specification box

- The model specification box
  a. Generates R script
  b. Executes R script
  c. Displays graph
  d. Identifies model with the largest adjusted $R^2$

- We return the regression coefficients from the selected model back to the Excel spreadsheet.
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■ Our addin to RCommander is currently available as an R package at http://astro.ocis.temple.edu/~rmh/Rcmdr.HH

■ Some of our additions will be included in the next release of RCommander.

■ We thank John Fox, the developer of RCommander, for help in designing our addins to his package.