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George Perkins. *Undergraduate Research based on R Through Excel.* Preliminary report.

The purpose of this talk is to present and demonstrate an efficient data analysis tool that combines the power of R, a language that has become a standard among statisticians, all over the world, for the development of statistical software, and Excel that provides a familiar interface with user friendly control mechanisms. By placing any R function inside the Excel spreadsheet automatic recalculation mode, the full power of R, one of the best programs for statistical analysis and graphical display of data, has been placed into a familiar user environment. In this presentation some elementary commands in R to do basic statistics at the undergraduate level will be presented. It will be shown that the R graphics which demonstrate the concepts of hypothesis testing, confidence intervals, regression analysis, ANOVA and several other important statistical calculations, which are the hallmark of most of the undergraduate research in many branches of statistics, mathematics, sciences and social sciences, can be controlled through Excel spreadsheets. The efficacy of R as compared to other point-and-click GUI based statistical software packages will be demonstrated. (Received February 15, 2011)