

# The gregmisc package: something for everyone

by Gregory R. Warnes

The gregmisc package is a repository for functions that I find myself needing but that don't seem to be available somewhere else. In contrast to many packages, it is not organized thematically, rather it contains a hodge-podge of different routines that make my life a little easier.

I've taken the time to bundle these functions up as a package for three reasons, first to share my efforts with others, second to get feedback (particularly bug reports and feature enhancements), and third to force myself to properly document and test the code.

The function in the gregmisc library fall into six general areas: permutations and combinations, tools for linear models, plots, data manipulation, fixed or extended versions of existing functions, and other.

## 1. permutation and combinations

**combinations** Enumerate the combinations of the elements of a vector

**permutations** Enumerate the permutations of the elements of a vector

**factorial** Compute the factorial function

## 2. tools for linear models

**ci** Compute confidence intervals

**contrast.lm** Compute (and test) arbitrary single-term contrasts for regression objects

**estimable** Compute and test estimable linear functions of the fitted coefficients (including contrasts) of regression objects

**glh.test** Test a general linear hypothesis for regression objects

## 3. plots

**boxplot.n** Produce a boxplot annotated with the number of observations

**plotCI** Plot error bars

**plotmeans** Plot group means and confidence intervals

**wapply** Compute the value of a function over a local region of an x-y plot

**space** Deterministically space points in an x-y plot so they don't overlap.

**hist2d** Create and Plot a 2-dimensional histogram.

**bandplot** Plot x-y points with locally smoothed mean and standard deviation

## 4. data manipulation

**combine** Combine R objects (such as dataframes) and add an additional column labeling the source

**rename.vars** Rename variables in a dataframe

## 5. fixed or extended versions of current functions

**lowess** Extend built-in lowess function to handle model formulae

**plot.lm** Extend the built-in plot.lm function:

- residual plots: add rug, zero line, mean and 1-sigma smooths
- residual quantile plots: add qqline
- add plots of each predictor against the residuals.

## 6. other

**running** Apply a function over adjacent subsets of a vector

I welcome comments and contributions. The current package includes code by Ben Bolker, Bendix Carstensen, Don MacQueen, and William Venables.

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