

# **“Readme” file for mpnr.zip, zip archive for “Massively parallel nonparametric regression, with an application to developmental brain mapping,” by Reiss et al.**

September 10, 2012

## **Contents of the archive**

This archive contains the following files:

1. `vows_0.2-0.tar.gz`, the current version of the `vows` package for R as of September 2012.
2. `mpnr-code.R`, R code to run the analyses of the paper.
3. `homotopic-dat.RData`, R data file containing the homotopic connectivity values for each of 193 individuals. The data are in the form of a 4-dimensional array `d4` of dimension  $35 \times 87 \times 58 \times 193$ , but `d4[x,y,z, ]` is populated only for the 71287 ordered triples  $(x,y,z)$  corresponding to locations within the brain.
4. `age.txt`, text file containing the 193 associated age values.
5. This file, `README.pdf`.

## **Installing vows**

To install `vows` from the file `vows_0.2-0.tar.gz` in this zip archive, the following R packages, on which `vows` depends, must first have been installed: `fda`, `gamm4`, `RLRsim`, `Rniftilib`, `rpanel`, `shape`, `stringr` and `tkrplot`. These “dependencies” are available from CRAN. In addition,

for Mac users, the `tcltk` package must be downloaded from <http://cran.r-project.org/bin/macosx/tools/> and installed. When installing `vows` from CRAN, the above dependencies can be included automatically. However, we cannot guarantee that the code in `mpnr-code.R` will work with future versions of `vows`.

Once the dependencies are installed, you can install `vows` from within the R console. If `vows_0.2-0.tar.gz` is located in the working directory, type

```
install.packages("vows_0.2-0.tar.gz", repos=NULL, type="source")
```

Otherwise, substitute "`FOLDERPATH/vows_0.2-0.tar.gz`" in the above. Upon successful installation, type `library(vows)` in the R Console to load the package, then type `library(help=vows)` for an index of commands.

## Running the analyses

Assuming `vows` has been installed successfully and the files `homotopic-dat.RData` and `age.txt` are located in the working directory, running the code in `mpnr-code.R` should produce outputs as shown in Figures 3, 4 and 5 of the paper. If you encounter problems, please contact the corresponding author at [phil.reiss@nyumc.org](mailto:phil.reiss@nyumc.org) for assistance.