

### Homework #3

Due date: 3/14/2013

1. With the “deconv2.s” script used in the “JohnIndoorOutdoor” study as an example, explain ALL arguments, such as “input”, “plot”, “tout”, and “bucket”, for the AFNI program “3dDeconvolve” for block design. (10 points)

**For the following two exercises, you will need to create your own directory with your name under “training”. Perform the analysis under your directory and hand in the results and associated explanation. I will check your directory!**

**To transfer files from the CIRC server, you can install the free program called “WinSCP” and transfer the results to your local PC. You can also run “scp [login\\_name@circ.psy.msu.edu](mailto:login_name@circ.psy.msu.edu):/the\_path/the\_filename.” at the local Linux computer to transfer files from the server to your local Linux computer. Then copy your files to a USB drive.**

2. Under the directory that you created, test the AFNI command “waver”.  
(1) Run “waver -GAM -peak 1 -dt 1 -inline 1@1 | 1dplot -stdin”. Save the output as “hw3\_q2\_test1.jpg”. Explain the arguments (“GAM”, “peak”, “dt” and “inline”) and the output. (2) Modify the “peak” to 10. Run the “waver”. Save the output as “hw3\_q2\_test2.jpg”. Explain the change of output from (1). (3) Modify the “inline” to “inline 1@1 5@0 1@1” in the (1). Run the “waver”. Save the output as “hw3\_q2\_test3.jpg”. Explain the change of output from (1). (10 points)
3. You have done the lab exercise with the dataset called “henderson\_E10702.tar.gz”. We often find that a subject can lose attention in some of the fMRI runs. I need you to re-run the fMRI analysis with only fMRI time series 1, 2 and 4. You can modify the existing scripts to accomplish this task. You can get helps from your classmates, but you must present your own work. You will need to create your own directory with your name under “training” if you have not done already. Perform the analysis under your directory and hand in the result in the form of an activation map following. Please save a brain picture in a name of “hw3\_q3.jpg” in jpg format with the activation map of “Indoor-Outdoor” showing the PPA activation (p value threshold at  $1 \times 10^{-4}$  or indicate the p value threshold that you use and explain the choice, red or orange = Indoor more active than Outdoor, blue = Outdoor more active than Indoor.) Please submit this brain picture. Please submit your modified scripts. (30 points)