NACS642 Group Project

For the group project, the class will be divided into three groups, each of which will implement an experiment in one of three methodologies (EEG, MEG, and fMRI), and collect and analyze the data from the same 3-4 subjects. The goal is to give you hands-on experience with a cognitive neuroscience technique and to think about how the results of different techniques relate to each other.

One part of the experiment will be the same across groups. This will consist of a simple visual word presentation paradigm in which the response to words will be contrasted with the response to non-words, which should take less than 10 minutes. All of the materials for this paradigm will be given to you.

The other part of the experiment will be designed by the students, and can vary across groups. You are free to design whatever kind of paradigm you wish. However, if your group does not want to spend the time and energy to develop your own stimulus presentation scripts and materials, you may choose to design a paradigm that involves the visual presentation of text. In this case, you will be able to use the same stimulus presentation script from the word/non-word task above, with your own set of materials. Your own part of the paradigm should ideally be no longer than about 30 minutes.

You will run volunteers from among yourselves, and we are not planning to publish the data or otherwise use it for science, so IRB approval is not needed for data collection. However, participants in the MRI will need to fill out a safety screening form that requests some aspects of your medical history (for example, prior surgery).

Francisco is available to provide guidance throughout the project, so please take advantage of him!
GROUP PROJECT OVERVIEW

Group project proposals  
Due 3/14
The project proposal does not need to be long, but it should include a definition of the problem to be examined, a literature review section, a materials section, a procedure section, and an analysis section. I suggest dividing the literature review across the whole group, so that everyone is responsible for summarizing one or two papers.

Scheduling participants  
Due 3/24
Since all the facilities can be difficult to book, make sure requests are submitted by 3/24.

Presentation scripts and materials  
A pre-test version of your scripts and materials is due 3/30; finalized (tested) version is due 4/4. Tested means tested in the facility (or mock facility)!

Data collection  
At the latest, should happen between 4/8 and 4/17. Raw data is due by 4/18.

Data analysis  
Two class periods are set aside for this, but you may need to allocate more.

Class presentations  
Due 5/13
Should include all of the same sections as the proposal, plus results and commentary on the strengths and weaknesses of this method for answering your questions of interest.

At the end of the semester, you will each be asked to evaluate your own contributions to the project and the contributions of the other members of your group.