ADNI Biostatistics Core
Conference call, 12 April 2005

Present on call: Laurel Beckett, Danielle Harvey, John Kornak, Devon Gessert, Youyan Xu, Rob Croop (Bristol Meyers), Brandon Whitcher (GSK)

Absent on call: Mike Weiner.

Prep phase:

Danielle reports that Qian has accessed the demographic data from the ADCS website without any problems and has looked at the distributions of the demographic data (age, MMSE, education). It appears that the range checks that ADCS has implemented have been working (no obvious outliers in these variables). Qian used this as a chance to get familiar with the ADCS website, the iQuery tool that they have, and accessing the data. The process seems very straightforward and works very well. The ADCS crew has done a great job in creating a user-friendly environment that will enable us to get the data that we need easily…now we are just waiting on the numeric summaries from the labs so that the analyses for the May 8 meeting can be done.

Danielle also updated everyone on the status of the analyses for the Prep phase. 2 of the Aims (Aim 2, 3) are high priority and will definitely need to be done before May 8. Aims 5 and 6 will be done if there is time (the various sites are processing the images for Aims 2, 3 first and if there is time, they will get to those for Aim 5, 6). We will do what we can based on the data that comes in (but definitely will analyze Aims 2, 3). Aims 4 and 7 will be left until after the May 8 meeting, as will Aim 1 (although it's not clear how much formal analysis for Aim 1 can be done due to the fact that they have just recently worked out the kinks in the GE images and have reached a final set of parameters, but won't have time to access many images at this final setting). So, the hope is that summaries, at least from Norbert and Nick Fox will start appearing in the next week, so that we can start the analysis of Aims 2, 3.

Brandon Whitcher asked about access to the raw data and results from the Prep Phase. This was a very good question and the group did not have the exact answer. We know that the goal is to make everything available at some point (most likely through LONI website), but we want to make sure that the data are clean and results are accurate before making it accessible. This topic will be brought up with Mike and Cliff.

Devon reported that the data uploader appears to be working now. They have a test data set from Norbert's lab that they will use for testing this week to make sure that there are no more problems. There has still been limited communication with Nick Fox' and Anders' labs to make sure that those summaries can be entered into the database as well. Devon and Sarah will be working hard this week to get the communication going with these labs so that the data can be made available to us.

John reported that given the limited amount of time left before May 8, the voxel-based group may not have a lot of the analyses done…particularly not a comparison of VBM to TBM or a comparison of Colin's and Paul's analyses. He said Colin would likely not have much time to produce anything, Paul will do what he can, and Gene will try to have something generated. But, overall, the voxel-based group is not going to have a lot of time, due to the added processing time to generate their summary maps.

Devon said she would make the test data for hippocampal volumes available to us this week for testing our analytic programs, so that when the actual data comes in, we can be ready for it.

Laurel will start putting together skeleton tables and a draft report to circulate and get feedback on presentation, so that it's just a matter of filling in numbers once we have the data. If we get some data soon, we will enter preliminary results into the tables. We just want to get a sense of what we want to report and the best way to report it.

Devon also reported that UCLA has finished their scans for the prep phase (for the Siemens Avanto 1.5T system). They will be passing out the necessary accounts to UCLA folks so that that data may be entered into the ADCS website…we should start seeing information from this site soon.

Execution phase:

Danielle sent out a draft summary of what is being collected and when as well as a description of the analytic strategies and power calculations. Laurel mentioned that Table 2 was confusing and suggested some changes, which Danielle will incorporate and then send out to everyone again. If anyone else has comments or suggestions on the document, please either send them as tracked changes to Danielle or send an email with suggestions. This document is meant to highlight the major parts of the Execution Phase and to give a broad overview. If something is missing or isn't clear, please let us know!

There was much discussion on the major goals of the study and what our primary focus should be. The dataset will be extremely rich and the analyses are not meant to be exhaustive. We will be looking at testing the hypotheses that were laid out in the original ADNI proposal and will be doing some developmental work that will enable us to address such hypotheses. Laurel mentioned that a big focus of the study is to determine if the information obtained from the images or biomarkers are less noisy and capture change in a shorter amount of time than cognitive function measures. John mentioned that there are a lot of interesting questions that could be answered and investigated from a methodological standpoint, so we will have to focus on those most relevant to the direct goals of the study (leave the others for add-on studies or further grants). From the voxel-based methods standpoint, there is a need to develop ways to compare TBM to VBM, determine if it is better to use some combination of the two, and how to best utilize these methods to discriminate between subjects. Is there an informative summary that can come out of these methods that may then be used in analyses more similar to those proposed for the numerical summary measures, to see if there is benefit in doing the

added step of voxel-based methods? Maybe these methods will capture very different information than the standard one-number summaries like volume.

We also discussed the importance of making sure that our mathematics links up nicely with the clinical picture, so that the results have meaning and relevance to the science. We feel that given all of the people involved in the project, both from academia and from industry, we will have lots of input on whether things are making sense, how best to present information, etc.

The next conference call will be held at 10AM on April 26 and will focus on a preliminary view of the presentation for the May 8 meeting.