

**ADNI Biostatistics Conference Call
Minutes 14 December 2004**

Present on call: Danielle Harvey, John Kornak, Mike Weiner, Cliff Jack, Karen Crawford.
Absent: Laurel Beckett, Ron Thomas, Rema Raman

Cliff mentioned that Karen Crawford will join the call to discuss organization of the LONI database.

There is an extreme need for the ADCS database to be organized and built. Scans will be coming in later this week or early next week, so numerical summaries will start being generated very soon. The database needs to be ready to receive these data. There also needs to be a tracking system in place, similar to that at LONI. Danielle will email Ron to find out the status of the ADCS database and to stress the extreme urgent need for the database to be in place.

Cliff updated the group on the MR core's concerns regarding how they would know which scans to obtain from LONI for the different aims. Most of the work should be done at LONI, in the organization of the database, to make it easiest for the individual labs to know exactly which scans they need to get. He also mentioned that Friday morning, a test run of the process for obtaining images from LONI will be done during the MR core conference call. Karen will also be on that call and will walk everyone through the process. Test scans were done on a volunteer last night, so files will be saved using the naming conventions that we plan to use for ADNI and will be placed at LONI so that actual images will exist in the database to work with during the trial run.

Karen will look over the imaging summary document carefully, paying particular attention to the sections on cross-sectional analyses and longitudinal analyses this afternoon and will email Danielle and Cliff any questions about the document as well as a proposal for how to organize the database and set up the web so that the individual labs know when images are available for which aims. Cliff suggested that for each aim, there will need to be a list of patient ID numbers and dates of the scans, at a minimum, so that labs can go in and access those images. We are asking the labs to do a lot of processing/analyzing, so the easier we can make things for them on the database side, the better. They should not have to figure out which images need to be processed and for which aim...it should be outlined for them as clearly as possible at LONI, similar to what is described in the imaging summary document.

Danielle reported that the patient-ID system is in place at LONI. The ADCS site codes will be used in addition to an S (for subject) and a four digit random number generated by the sites. She and John will both be on the MR conference call on Friday morning, so we should have a very good understanding of the organization of the LONI database and the ID systems after that.

Danielle and Laurel still need to write up the analytic plan for the numerical summaries so that it can be appended to the Imaging Summary document. In addition, John will write up a section for the meta-analysis of the voxel based methods. He is still waiting to hear back from the various labs that will be generating the summary maps. Paul Thompson has provided a lot of information. Colin Studholme is not sure how much of the processing that he will be able to do,

given his limited availability, but he will do as much as he can. Gene Alexander has been quiet, although John will try to get more feedback from him (he has already emailed him again and is waiting for a response.)

Based on the information that John has received about the summary maps, possible numerical summaries include peak height, spatial extent (number of voxels above a certain threshold), or a maximal statistic. He expressed concern with spatial extent because it is more a measure of the extent of a significant region rather than the extent of the effect. He thought that we might end up going back to the parameter estimates and standard errors to obtain a possible summary.

Once John has more information from the individual labs, he will write up a section outlining the process for the meta-analysis that will compare the different morphometry methods (mainly a comparison of Paul and Gene's methods for Aim 4b). He and Paul Thompson like the idea of having a common template that will be used for each of the labs doing voxel-based methods, which will make meta-analyses more feasible, but little feedback has come in from the other labs. John mentioned that whether this is done for the preliminary phase or not, it is something that would be good to work out for the Execution phase. He suggested that in mid-January, it would be useful to have a call with Colin, Gene, Paul, and Danielle to discuss the voxel-based methods in more detail.

The thought is still that the voxel-based methods will generate a summary map that may show differences between sequences, but that may also include conflicting results (some regions may be better for one sequence while other regions may be better for another sequence.) The issue is how to look at that summary image and determine which sequence is best. He thought we might be able to look at peak height and see the total peak height in one direction and compare that to the total peak height in the other direction to get a sense of which sequence is best. However, for the prelim phase, we will most likely end up looking at the summary images (or having experts look at the summary image and determine which is the best approach to use). He will know more once he finds out what will be done for each of the voxel-based methods and will keep us updated.

John also emphasized that at LONI it will be important to have information stored about the summary maps, so that we know which method was used, the template used, the registration matrix, whether it is a control/AD map, time1/time 2 map, or back-to-back map, as well as specific information on the model and thresholds used to generate the maps.

Action items:

1. E-mail to Ron about UCSD database (Danielle)
2. Draft of analytic methods for global summaries (Laurel, Danielle)
3. Inquiries about steps taken to obtain voxel-based maps (John)
4. Draft of plans to more formally analyze the summary maps, if possible (John)