ADNI Conference Call
22 May 2007

Present: Danielle Harvey, Qian Weng, John Kornak, Yevgen Tymofyeyev

Danielle filled in for Laurel on today's call. She reported on the dissertation projects of Qian Weng and Hao Zhang, two statistics graduate students working on methods related to imaging data. Both methods will be applicable to ADNI data. Qian is developing transition models in the presence of error, and is working in the context of modeling the development and progression of white matter hyperintensities. Hao is studying the impact of error on voxel based morphometry (VBM) and tensor based morphometry (TBM). He is using images from the ADNI prep phase to investigate the distribution of "errors" (defined as differences in images obtained 2 weeks apart on normal subjects) and will later carry out simulations to determine how much error would lead one to believe that there is actual change going on when there truly is none and when there is too much error to show no change when there really is change. He will also develop models that characterize the relationship between VBM and TBM.

Qian has created a summary report on the baseline demographics (age, education, MMSE, gender) of the entire ADNI sample, each diagnostic group, each study arm (1.5T only, 1.5T + PET, 1.5T + 3T), and diagnostic group within study arm. The MRI Core has since sent us a list of subjects for whom their 1.5T scan is unusable, so we will modify the report removing those subjects from the overall summary and from the 1.5T only summary tables. This report will be circulated to the group once it is finished.

Yevgen said that he had received positive feedback on the analytic plan from members of industry. Everyone is patiently waiting for data. We still think it will be at least 2 months before we start to see imaging summaries. Yevgen also mentioned that the xml files that come with the images are very useful for people who want to do their own analyses using the images. He mentioned that he had downloaded the clinical data from LONI, but had not had a chance to look at all of the files in detail. Danielle reported that ADCS will be generating at least one additional variable to include in the clinical data available through LONI (the ADAS Cog total score), so that individual groups won't have to generate these values themselves. Yevgen also asked about strategies for interim analyses. John and Danielle agreed that there was not a set strategy in place and that preliminary analyses were being done. Groups are not waiting until data collection is complete.

John reported that voxel-based analyses are back on the regular agenda for the MRI calls. The challenge is getting Paul, Gene, and Colin all on the call at the same time (or at least Paul and Gene). Gene was the only person able to make the last call, but hopefully Paul and Gene will both be able to be on the next MRI call. The goal for the voxel-based discussions is to come up with a uniform point of view about the ROI analyses to then discuss with the PET core. At one point, there had been some consensus between the MRI and PET voxel-based groups, but they have since diverged. It is not clear if there will be much overlap between the regions used by the MR and PET groups. The MR group will be focusing on a priori anatomically defined regions for some of their regional voxel-based analyses, while the PET group may not end up using anatomically defined regions and focus more on functional regions. There has been discussion about an in-person meeting between members of the MRI, PET, and Biostat Cores possibly in November.

Next call: June 5, 2007