

ADNI Biostatistics Core Minutes,
2 March 2010

Present on call: Laurel Beckett, Danielle Harvey, Hao Zhang, Fred Immerman, David Shera, Mike Donohue, John Kornak, Yili Pritchett, Bill Billings,

The Biostatistics Core has submitted two papers for invited special issues. The first, to Neurobiology of Aging, was on normal controls, and used unsupervised clustering to identify groups with distinctive patterns on baseline CSF biomarkers and imaging summaries. A large group looked quite “normal”, with some divergence into another possible group, and a small group stood out fairly reproducibly as quite different (and in bad directions). The small group was found on subsequent analysis to decline significantly faster in ADAS-COG. A second paper has now been accepted by Alzheimer’s and Dementia (the notice arrived about 5 minutes after the end of the call.) That paper was an overview of change in biomarker, imaging and cognitive tests in the ADNI-1 data, by the biostatistics core as a group, following the preliminary results we submitted for the ADNI-2 proposal.

Mike Donohue reported that the first GO site should be approved soon and about ready to enroll patients. Other new data that may be coming in will be from the Biomarker Core; they said a while ago to expect something “soon”. Pitt sent an update on PiB data; still small numbers and not much 2 year data yet, as only done on 90 subjects. Danielle will send an email to Les and John to ask when to expect updates to biomarker data.

Mike Donohue and Anthony Gamst did some simulations looking at mixed models and time to conversion in MCI, and looking at amyloid burden. They just submitted this to Neurology. The simulations showed that mixed models were much more powerful than time to event analyses. Mike hopes to follow up with a methods paper. They simulated linear and mapped to time-to-event by threshold where hitting the threshold is the event. They are going to follow up.

Danielle had a paper accepted in Statistics and Probability Letters; it’s a central limit theorem for spatially correlated 3-dimensional data, such as voxel-level data. It is useful for analyses where there are not a lot of people. They also recommended a more applied illustration paper, which will go to Neuroimage, probably.

The industry Scientific Advisory Board has a biomarker group and they had a meeting earlier today. Most of the discussion was about combining the data from each company’s smaller studies. There is willingness to do this, but it is not yet settled who will do this and what will be the analytic plan. There is even some monkey and dog data. They are interested in variation in CSF markers. Laurel can check into whether there is anything going on in our vet school or primate center.

The next call will be Tuesday, April 6, at 10 AM Pacific time.