



BIRN

BIOMEDICAL INFORMATICS RESEARCH NETWORK

Multi-Site Alzheimer's Disease Project a.k.a. "MAD"

MAD Update

■ Aims:

- Establish ability to pool legacy MRI data for analysis by replicating and extending single site established results (e.g. hpc shrinks with age)
- Use the BIRN infrastructure to mine multi-site clinical MRI studies of AD. (UCSD, MGH/BWH, Wash U, UCI)
- BIRN tools (Freesurfer subcortical segmentation +/- 3D Slicer, +/- XNAT for data management) applied to T1-weighted MR data
- Demographic and neuropsychological data for correlative studies

- ## ■ Attendees: Bruce Rosen, Randy Gollub, Randy Buckner, Gus Alva, Jessica Turner, Michelle Perry, Christine Fennema Notestine, Steve Potkin, Polina Golland, Michael Miller.

Completed items:

1. Confirmed data sharing from all four sites, UCI will use only data collected locally at this point, will continue to explore using data from other Novartis sites
2. Confirmed contact people for all sites, defined roles for initial implementation
3. Christine, Randy G and Brad Dickerson are project leaders
4. Confirmed initial data sharing plan: derived and associated meta data (not the raw data) to be available to the scientific community as soon as study is completed, raw images available now (UCSD) or soon to follow per site needs
5. Confirmed plan for minimal dataset in shared analysis: diagnosis (how was dx generated), inclusion/exclusion criteria, AGE, EDUC, SEX, MMSE, CDR where available, method for administration and scoring, # data pts for longitudinal studies

To be decided NOW:

1. Define Authorship list. Current status is:
 - a. UCSD- Christine Fennema-Notestine, Terry Jernigan & Leon Thal on all projects, David Salmon and Greg Brown on a by-project basis
 - b. BWH/MGH- Brad Dickerson, Deborah Blacker, Marilyn Albert, & Ron Killiany on all projects
 - c. Washington University- Randy Buckner,
 - d. UCI- Steve Potkin, Jessica Turner, Gus Alva
 - e. M-BIRN- Randy Gollub
2. Defining QA process for data.
 - What can be used from Slicer and XNAT for review subcortical data? Steve Pieper, Nicole, Bruce Rosen, Dan Marcus, Sean Murphy, Mike Mendis, Heidi Schmidt
3. When Wash U completes uploading de-identified raw data should it be used for benchmark testing of the BIRN/FreeSurfer pipeline?

Action plans post-meeting: At MGH 3/9-11

1. Check with Bruce Fischl:
 - a. What is the atlas used and is it the same for all? Is it the Wash U set with YNC, MNC, ENC, AD?
 - b. Finalize methods for estimating intracranial vault
2. Define QA processes for data
 - a. Data quality & image processing minimal requirements
 - b. Brad/Christine rules for segmentation QA to be circulated to MAD group for final verification
3. Brad's input on neuropsychological data
4. Finalize statistical analysis plans

Action plans: ~6 weeks

1. Complete plan for extracting comparable neuropsychological data across sites.
 - CFN to lead effort in consultation with David Salmon at UCSD ADRC.
2. Finish update of Excel file with critical study information
 - Provide UCI and WashU data with real BIRNIDs and confirm UCSD and MGH IDs are appropriate
4. Write up methods section information for group description, demographics, and diagnosis

Action plans: by Oct 2005 AHM

1. Complete data acquisition/extraction
2. Initial analysis of cross site control group data to replicate single site findings completed*
3. Exploratory analysis of cross site patient data started
4. Have preliminary assessment of possibility and utility of Polina's shape analysis methods for this data set so we can define additional hypotheses to test

*TBD in final after consultation with Brad