ADNI Alzheimer's Disease Neuroimaging Initiative

# University of Utah

## Center for Alzheimer's Care, Imaging and Research

## PET Data Description

The focus of The University of Utah component of the PET Imaging Core is on the individual image analysis and processing of molecular imaging data using 3-dimensional stereotactic surface projections (3D-SSP) computed by Neurostat, developed by Satoshi Minoshima [Minoshima et al., J Nucl Med 1995; 36:1238-48].

We have uploaded baseline ADNI1 FDG-PET images warped into Talairach space in dicom format.

We have provided a document with 3D-SSP images of AD subjects showing a pattern of glucose hypometabolism that is consistent with frontotemporal dementia. **LINK?**

We submit 6 numeric summary values that encapsulate information on the spatial extent and the severity of hypometabolism from FDG-PET and amyloid uptake values from amyloid-PET scans. We compute the averaged uptake values in 18F-FDG, 18F-AV45 and 11C-PIB images, for regions that are typically relevant to Alzheimer's Disease: the frontal and association cortices. We also compute the differences of subjects compared to a control group by pixel-wise computation of Z-scores in Talairach space. For FDG scans, we submit the number of pixels significantly hypometabolic compared to a group of elderly normal subjects. These are normalized to pons. For amyloid scans, we submit the number of pixels with significant increased uptake compared to a group of amyloid negative subjects. These are normalized to cerebellum and total white matter. Our numeric summary value reporting the spatial extent of significant change counts the significant Z-scores. The numeric summary value that reports the of the severity of the deviations with spatial extent, sums the significant Z-scores. For FDG scans, these values report the extent of hypometabolism, and for the amyloid scans, these values report the increase in tracer uptake.