

Use of Imaging Data in the Alzheimer's Disease Centers Program

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Background of ADC Neuroimaging Working Group

- Formed in April, 2011 for the purpose of exploring creation of combined imaging database
- Questionnaire developed June, 2011
 - Submitted to sites in August
 - Finally tally March, 2012

ADC Centers Program Imaging Committee

- ADC Center Members
 - Charles DeCarli—Chair
 - Cliff Jack
 - Howie Rosen
 - Andy Saykin
 - Bud Kukull—NACC
- Program Representatives
 - Nina Silverberg—NIA
 - Creighton Phelps—NIA

Rationale

- NACC has extensive uniform data set
 - Broadly representative of AD and associated disorders
 - Substantial follow-up
 - Host of novel associated data
 - Neuropathology
- Imaging Biomarkers are recognized as important research tools

Objective

- Develop a system that will give broader research access to available imaging data
- Associate this data with other extensive data available on the participants in order to augment scientific research

Currently Available Digital Imaging

Image type	Number of subjects (unique)
Digital MRI (any)	9,559
Digital PET (any)	1,547

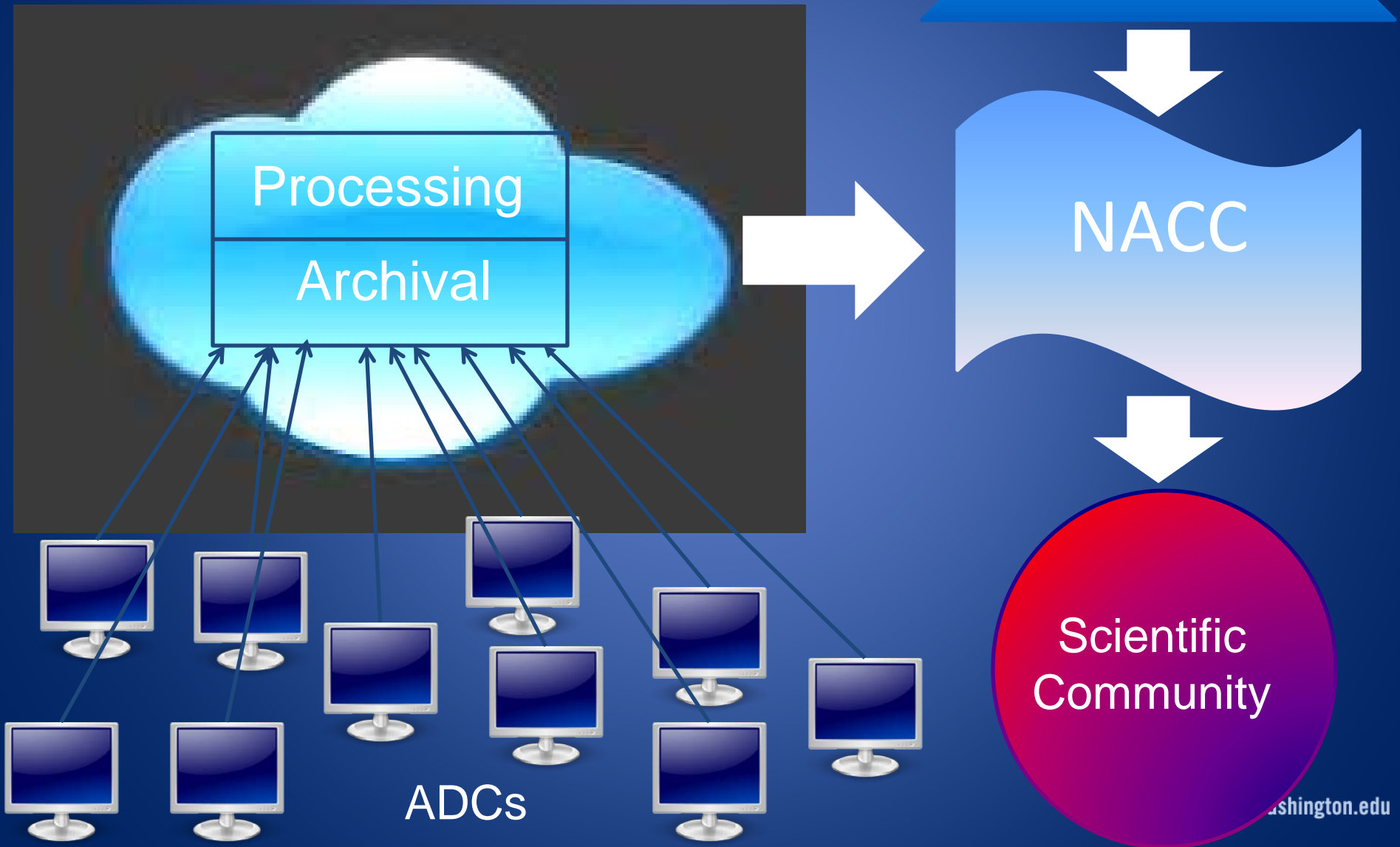
Results of Survey

- Interest? 18 yes, 5 maybe
- Store MRI data? 18 yes
- Interested in sharing? 16 yes, 5 maybe
- Harmonized with ADNI? 11 yes

Potential Barriers

- 29 Diverse Sites
 - Inconsistent Image Sequences
 - Inconsistent Image Formats
- No quality control
- No standardized analytical pipeline
- No linkage with NACC and affiliated datasets limiting access and impact of extensive additional data

Potential Solution



Challenges

- Local imaging archives not uniform
 - Varying formats
 - Varying sequences
- Local IT abilities variable
- No central processing
- No linkage to central databases
- Security
- Tracking

Potential Benefits

- Study biomarker hypothesis
- MRI genetics association studies
- *In vivo* pathological studies

Current Agenda

- Explore infrastructure development for image archive
 - GAAIN/others
- Explore potential funding mechanisms to support image archiving
- Establish goals for core analyses and incorporation of various methods
- Linkage of summary data to existing databases

QUESTIONS?