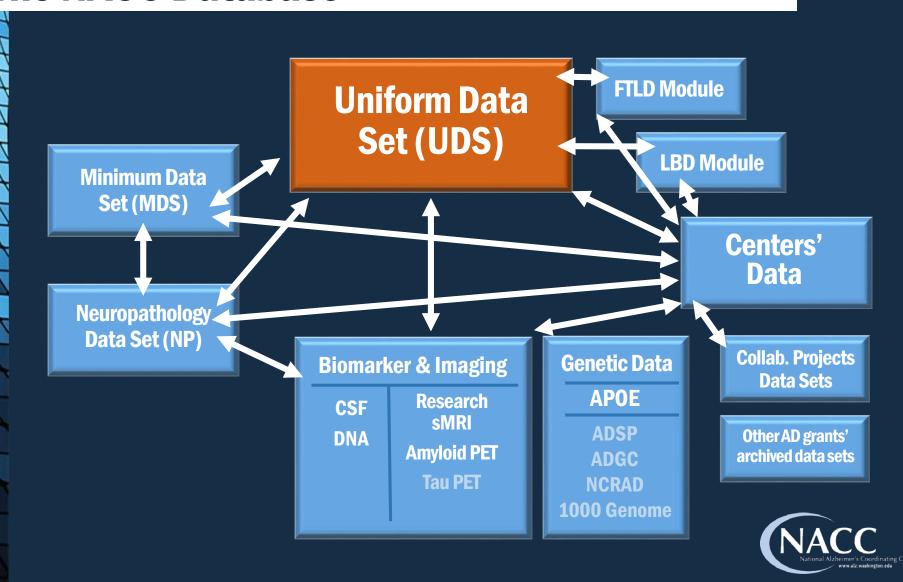


### **The NACC Database**



#### **NACC** Imaging submission NACC Q/C check and fix **Centers** NACC **Imaging Database NACC Imaging** Cleaned **DB** ready to **Scans** distribute **Clean and zip** scans **Dicom image files Clean Scans** Data Update and add requests and **Protocol File Upload file NACCID FTP** queries via website **Cloud** Storage Internet NACC **Imaging Database Internet Process into Temporary NACC Files Database RESEARCHER Update Status File**

### **Imaging Data Submission**

- Submission of images and related data through website
- Data-cleaning program written in SAS
- Submission systems tailored to Centers' needs:
  - FTP sites
  - Upload one file or many files in one zip file
  - Tailored programs to process images into database



## **NACC Imaging Quality Control**

- All Images are cleaned of PHI Data
- Randomized NACCID and NACCADC are added to images
- Images are checked manually at NACC after being cleaned of PHI data
- The above is done with a lot of interaction between NACC and the centers
- Some DICOM tag data is stored in indexed files for faster retrieval – Image type, Manufacturer, Model number etc.
- Images are NOT standardized or checked for quality. This could be done by imaging experts by easy access on cloud



### **NACC MRI User Interface**

### BIDSS

NACC Biomarker and Imaging Data Submission System

#### Research Structural MRI Data Submission System

**MRI Home** 

UPLOAD and PRE-PROCESS FILES

WEB DATA ENTRY

ERROR CHECK

FINALIZE DATA

REPORTS

DOWNLOAD DATA

FORMS AND DOCUMENTATION

HELP

#### Sample Center

#### Welcome to the Research Structural MRI Data Submission System

NACC's structural MRI data submission system is designed to capture and store the following data on UDS Clinical Core subjects:

- Quantitative measures from structural MRI, including intracranial, total brain, and hippocampal volumes, when available
- DICOM images, including 3DT1, FLAIR, and DTI, when available

Quantitative data may be entered into the system without associated DICOM files, and DICOM images may be uploaded to NACC without associated quantitative data. When both are available, MRI data and DICOM images are linked using subject ID and MRI acquisition date.

Please refer to the "FORMS AND DOCUMENTATION" menu on the left for help in navigating the system and uploading data. For more assistance, contact NACC at NACCmail@uw.edu, or (206) 543-8637.

#### Data submission timing

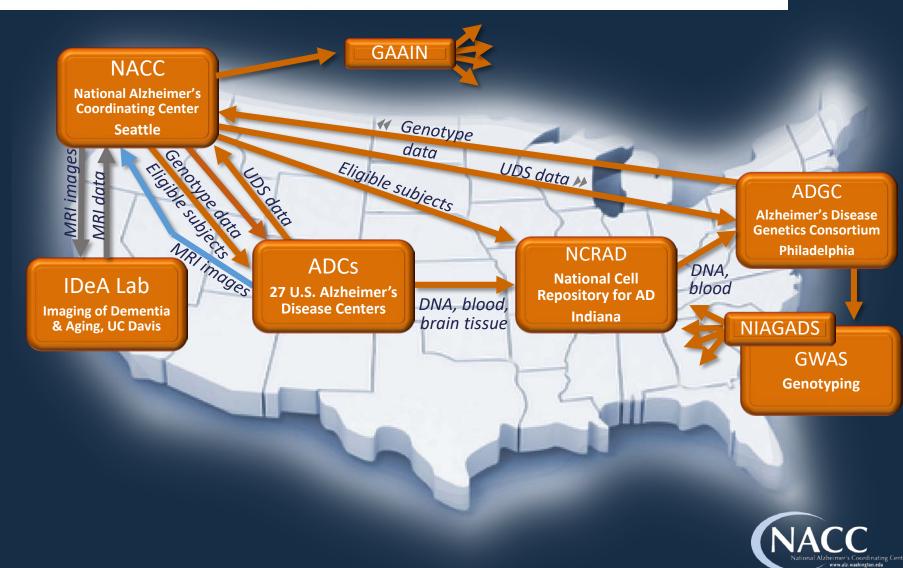
Submitting MRI data and DICOM files is optional for Centers but highly encouraged. We ask that all data available on UDS subjects be uploaded initially and that subsequent scan sessions be uploaded at least twice a year.

#### Viewing DICOM Images

Visualization software is required to view DICOM MRIs. Many software packages are available on the web as freeware or free trials, and can be located by doing a web-search for "DICOM viewer".



### **NACC** data connections



## **Scan Sessions by Diagnostic Category**

Normal - 1,978

**Demented - 1,703** 

MCI - 806

Impaired not MCI - 129



## Scan Sessions by NP data, GWAS, DNA, ADSP

NP Data - 522

ADGC, GWAS available – 1,950

DNA from NCRAD available - 3,508

ADSP sequencing - 342



## **Scan Sessions by Etiology**

# Primary suspected etiology at the most recent UDS visit for subjects with MCI or dementia

Alzheimer's disease	1820	73%
Lewy body disease	149	6%
Vascular brain injury 2 or stroke	137	5%
FTLD - with bvFTD	71	3%
FTLD - with PPA	41	2%
FTLD – Other	25	<1%
Traumatic brain injury	266	11%



### **The Future**

- More MRI's and Amyloid PET Scans coming in daily (Currently ~6,830 MRIs, ~400 Amyloid PET)
- Tau-PET
- More centers participating
- More Standardization
- Cloud so anyone can download and look at from anywhere

