NCRAD

September 2016

Genomic Data Sharing Policy Documentation

A huge THANK YOU to those who have already completed this updated Genomic Data Sharing (GDS) Institutional Certification form!

In order for your Centers' samples to be included in sequencing projects going forward, the NIH Genomic Data Sharing Policy (https://gds.nih.gov/index.html) documentation must be completed. This document certifies that the samples you have provided to NCRAD are allowed to be shared and how they can be shared.

NCRAD has been working with every ADC to update the required paperwork for the Genomic Data Sharing Policy to ensure ADC samples can be included. Please note, that this document was updated in the fall of 2015. If you completed the documentation in the spring of 2015 or earlier, the form will need to be updated to the latest version. If you are unsure if you have completed this or not, please contact Kelley Faber at kelfaber@iu.edu.

ADSP Progress

The Follow-Up Phase of the Alzheimer's Disease Sequencing Project (ADSP) has begun. As part of this Follow-Up project, over 1,200 ADC cases and controls have been included. Whole genome sequencing (WGS) is being performed for these samples at the Large Scale Sequencing Centers at Washington University in St. Louis and at the Broad Institute of MIT and Harvard.

Only samples that had their GDS Institutional Certification document in place at NCRAD at the time of sample selection, were eligible for this phase of sequencing.

Sample Banking at NCRAD

NCRAD banks biospecimens from over 25 different studies focusing on Alzheimer disease, frontotemporal dementia, and most recently Down syndrome.

NCRAD works with investigators during grant preparation to provide a quote for kits and sample processing. Once funded, NCRAD prepares a biospecimen collection manual, provides training for site coordinators, and all biospecimen kits.

ADC Samples to NCRAD

NCRAD continues to accept samples from all subjects with an MDS or UDS at NACC. While fresh whole blood samples are preferred, NCRAD also accepts frozen buffy coats, transferred DNA and brain tissue samples. Our goal is to have a DNA sample banked and available from all MDS and UDS subjects. When sending blood, NCRAD will cover the cost of shipping, provide a blood kit, and return 25ug of DNA for free. In addition, APOE genotyping is done on all samples submitted once they match to the NACC lists. More details about sample requirements, kit requests, and forms for submitting samples to NCRAD can be found on our NCRAD website here: https://www.ncrad.org/sample_requirements.html.

Please continue to send samples for this very valuable project!

A Central Repository with DNA available to match the rich dataset collected for all subjects seen in the ADCs is a very valuable resource for the field of AD research. We hope you will continue to support this effort!

Please contact us with any questions or concerns about NCRAD at 800-526-2839/317-274-7360, by email at kelfaber@iu.edu or visit our web-site: www.ncrad.org Thanks!!

ADSP Sample Providers

You may request access to sequencing data on your own subjects through dbGaP using a special, expedited process. Complete instructions are found on the ADSP website. Contact Rebecca Cweibel rcweibel@mail.med.upenn.edu with questions about submitting a request.

New Datasets Available

NG00047: Indianapolis African American GWAS

The African American participants that were included in this study (173 cases, 1002 controls) were part of the community-based longitudinal comparative epidemiological study of African Americans in Indianapolis, and Yoruba Nigerians living in the city of Ibadan.

NG00048: ADGC Age at Onset Summary Statistics

A study to investigate the effects of known Alzheimer disease risk loci in modifying age-at-onset, and to estimate their cumulative effect on age-at-onset variation, using data from genome-wide association studies in the Alzheimer's Disease Genetics Consortium (ADGC). Available in this dataset are the summary statistics described in Naj et al.

NG00049: CSF Summary Statistics

Summary statistics of genome-wide association study for established biomarkers (Cerebrospinal fluid (CSF) tau, tau phosphorylated at threonine 181 (ptau), and $A\beta_{42}$) for Alzhemier's disease. This is the largest genome-wide association study for cerebrospinal fluid (CSF) tau/ptau levels published to date (n= 1,269). Imputed data consists of 5,815,690 SNPS using HapMap release 22 CEU (build 36) as a reference panel.

NG00050: GWAS of CLU, A potential endophenotype for Alzheimer's disease

Genome wide association study to understand the role of Clusterin (CLU - Endophenotype for AD) in Alzheimer's Disease. Imputed data consists of 6,015,512 SNPS using 1000 Genomes data (June 2011 release) CEU (build 37) as a reference. This study involves 673 individuals (400 ADRC, 273 ADNI). We provide access to 400 ADRC subjects, remaining data for 273 ADNI subjects can be obtained at adni.loni.usc.edu.

NG00052: CLU, A potential endophenotype for AD: Summary Statistics

Summary statistics of genome-wide association to understand the role of Clusterin (CLU - Endophenotype for AD) in Alzheimer's Disease. GWAS data can be accessed at NG00050.

NG00053: IGAP Summary Statistics, ADGC subset

The International Genomics of Alzheimer's Project (IGAP) released summary results data from the 2013 meta-analysis of Genome-wide Association data in Alzheimer's disease. The summary results available in this dataset are from the Alzheimer's Disease Genetics Consortium (ADGC) only.

NIAGADS The National Institute on Aging Genetics of Alzheimer's Disease Data Storage Site

NIAGADS GenomicsDB 2.1 is now available

An enhanced version (2.0) of the NIAGADS GenomicsDB was released to the public in April 2016. Improvements to the site included a new, intuitive search interface and improved presentation of gene and SNP information that together make it easier to identify AD-relevant variants. Other new features, such as pathway and Gene Ontology (GO)-based functional enrichment analyses and co-location searches allow users to upload, mine, and integrate their own datasets with search results.

With a mini-release (2.1) in September 2016, the GenomicsDB now provides a web-resource that allows users to search or browse 35 publicly available NIAGADS GWAS summary statistics datasets, including the following new additions:

- **NG00040**: summary statistics from a multi-ethnic exome array study to identify low-frequency coding variants that affect susceptibility to Alzheimer's disease (AD), frontotemporal dementia (FTD), and progressive supranuclear palsy (PSP)
- **NG00041**: summary statistics from a GWAS study of known genetic risk loci for Alzheimer's disease and related dementias using neuropathologic data from 4,914 brain autopsies.
- **NG00045**: summary statistics from a two-stage analysis for identifying risk for progressive supranuclear palsy (PSP)
- **NG00048**: summary statistics from a study investigating the effects of known Alzheimer disease risk loci in modifying age-at-onset and estimating their cumulative effect on age-at-onset variation, using data from genome-wide association studies in the Alzheimer's Disease Genetics Consortium (ADGC).
- **NG00049**: summary statistics from a GWAS study for established Cerebrospinal fluid (CSF) biomarkers for Alzheimer's disease

In addition, added functional genomics datasets from ENCODE and FANTOM5 for selected brain-relevant tissues can be searched directly or compared to the summary statistics datasets.

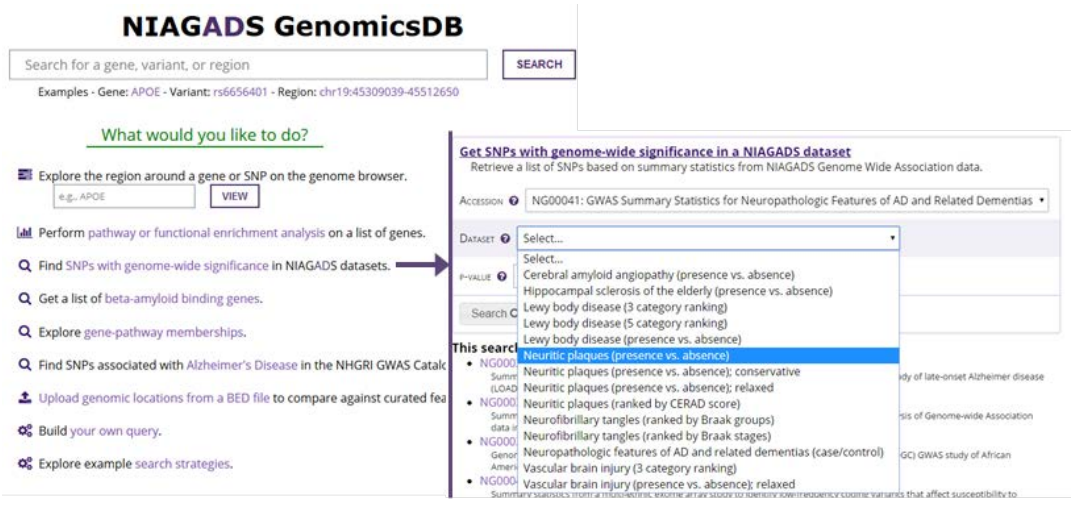

Figure: The NIAGADS GenomicsDB 2.1:Explore what is known about a SNP (including genome-wide significance in NIAGADS datasets) using the home-page search or by exploring the surrounding region on the NIAGADS genome browser. Alternatively, use the search-strategies interface to find all genes with genome-wide significance for AD or related neuropathologies.

Visit the NIAGADS website at http://www.niagads.org.
Contact us with questions at niagads@upenn.edu.