January 2021

NCRAD GWAS Plan

In October 2020 we shipped out samples from UDS subjects that do not meet ADGC criteria for GWAS. This shipment included samples from nearly 5,000 UDS subjects! Just like the samples genotyped by the ADGC, these were sent to the Center for Applied Genomics (CAG) at the Children's Hospital of Philadelphia (CHOP). Annually, we will continue to send samples for GWAS from UDS subjects not meeting ADGC criteria. Our goal is to have GWAS data on all UDS subjects with a DNA sample at NCRAD. GWAS data will be returned to the contributing ADRC and will be made available to all researchers through NIAGADS.

Globally Unique Identifiers (GUIDs)

Some ADRCs have begun generating and sending Globally Unique Identifiers (GUIDs) to NCRAD. GUIDs are generated by the Biomedical Research Informatics Computing System (BRICS) platform's centralized NIA/NINDS portal. The same GUID will be assigned to subjects that participate in both NIA and NINDS studies, allowing for data to be associated with a particular subject without exposing any protected health information (PHI). This reduces redundant analyses and maximizes the amount of information that can be gathered. We encourage all ADRCs to begin generating and sending GUIDs to NCRAD.

Annual Call Update

Historically, we have scheduled an annual thirty-minute call with center members to review the previous year's samples received, distributions, and new initiatives taking place at your site. Because Covid has significantly impacted Centers this past year and in the interest of reducing Zoom meetings, we have replaced the annual call with a detailed email that will include the Sample Distribution Report, as well as our typical updates. If your Center would prefer to hold a call with NCRAD, please feel free to reach out to Kaci Lacy (lacy@iu.edu) to schedule a time.

Annual Sample Distribution Reports

Our annual Sample Distribution Reports are designed to help your Center easily document your contributions to central sample banking efforts encouraged by NIA. Reports are sent out every January to the Center Director. Please contact Kaci Lacy (lacy@iu.edu) if you would like a copy sent directly to others as well.

An example report is provided on the next page. To provide the most comprehensive summary of the wide range of samples we are receiving from the ADRCs, the Sample Distribution Report summarizes the number of subjects with each sample type provided by your site as part of initiatives banking samples at NCRAD. This summary encompasses 2020 and overall. For example, a Center may send samples as part of the ADC, ADNI, and AGMP initiatives. The report would show the number of subjects with DNA, plasma, serum, stool, RNA and PBMC samples in each study. Note that the number of subjects shown on the report is a count of unique individuals with each sample type within a study. Many studies collect longitudinal samples and these will show as a single subject, not number of visit.

The annual report also summarizes how many samples contributed by your site are requested by researchers. The report shows the total number of aliquots distributed to researchers from samples contributed by your center. We report aliquots for both 2020 and overall. This is a total count of aliquots distributed and is not restricted to unique subjects. Samples from the same subject may be requested by more than one investigator. Please note, this count does not reflect the samples that were returned to the contributing site as their one free aliquot.

Our summary report also provides the number of unique investigators that have requested samples contributed by your center. We provide this information for 2020 and also in a cumulative form across all years. Finally, all NIH grants that were supported by the samples contributed by your site are listed. Those grants in blue font supported 2020 distributions.

Please contact Kaci Lacy (lacy@iu.edu) for a custom report with specific date ranges.

NCRAD

Page 1

NCRAD Sample Distribution Report

Example University

Date Range: 1/1/2020 to 12/31/2020

Unique Subjects Received (Date Range/Overall)

Study	Buffy Coat	Cell Line	DNA	PBMC	Plasma	RBC	RNA	Stool	WBLD
ADC	0/132	0/0	1/1858	0/0	0/0	0/0	0/0	0/0	0/0
ADCFB	89/89	0/0	0/0	90/101	96/96	0/0	0/0	0/0	0/0
ADNI	0/4	0/8	0/6	0/0	0/0	0/0	0/4	0/0	0/0
ADNI-3	6/11	0/9	0/11	0/9	0/0	0/11	6/11	0/0	0/0
AGMP	0/0	0/0	0/0	0/0	0/0	0/0	0/0	3/3	3/3
Total	**95/236**	**0/17**	**1/1875**	**90/110**	**96/96**	**0/11**	**6/15**	**3/3**	**3/3**

Aliquots Distributed (Date Range/Overall)

Study	Cell Line	DNA	Plasma	WBLD RNA
ADC	0/0	184/1906	0/0	0/0
ADCFB	0/0	0/0	4/4	0/0
ADNI	0/1	0/61	0/0	0/1
Total	**0/1**	**184/1967**	**4/4**	**0/1**

Investigators Receiving Samples (Date Range/Overall): 2/25

Number of NIH Grants Supported (Date Range/Overall): 3/17

Page 2

NCRAD Sample Distribution Report

Example University

Date Range: 1/1/2020 to 12/31/2020

NIH Grants Supported*

R01-AG016208
R01-AG027224
R01-AG039700
R01-AG044546
R41-AG066328
R43-AG063589
RC2-AG036528
RC2-AG036535
U01-AG006781
U01-AG024904
U01-AG032984
U01-AG049508
U01-AG057659
U01-AG062943
U19-AG024904
U24-AG021882
U24-AG021886

*Blue indicates grant is associated with a distribution within date range.

Please contact us with any questions or concerns about NCRAD at 800-526-2839, by email at alzstudy@iu.edu or visit our website: www.ncrad.org. Thanks!!

ASHG 2020 Virtual Meeting

On October 27-30, data analyst Heather Issen and web developer Conor Klamann each presented their NIAGADS posters to the American Society of Human Genetics (ASHG) 2020 Virtual Meeting.

Heather Issen held a poster session on the NIA Genetics of Alzheimer's Disease Data Storage Site (NIAGADS), a rich resource for AD researchers to promote Alzheimer's genetics research advancements. NIAGADS enables AD researchers to achieve their research objectives more effectively through housing datasets from many projects and institutions.

Conor Klamann presented his poster on the NIAGADS Alzheimer's Genomics Database (GenomicsDB), an interactive knowledge base for AD genetics and related neuropathologies that provides unrestricted access to genome-wide association studies (GWAS) deposited at NIAGADS. These data are curated along with variant and gene annotations and AD-relevant functional genomics datasets, allowing AD researchers to quickly identify and interpret interesting genomic regions via interactive search strategies and the NIAGADS genome browser. \

In addition to the poster presentations, the ASHG virtual conference included a full schedule of plenary sessions, CoLabs, and invited sessions.

"The ASHG virtual conference provided a wonderful opportunity to share our work with other researchers in the field while learning about the work of other labs undertaking similar projects," said PNGC's Conor Klamann. "The virtual poster format turned out to be very efficient, and I was able to quickly find out a lot about the methods and technologies being used around the world." Those who registered for the ASHG virtual conference may find all these presentations and more through ASHG's website until October 2021.

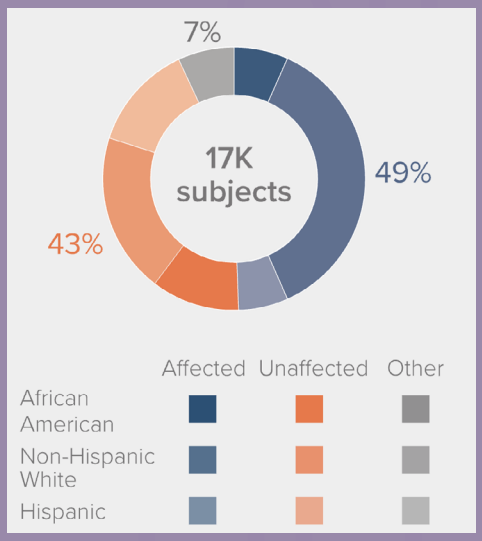
New Datasets available at https://www.niagads.org/datasets

NG00099 - Results of gene - based weighted burden analyses using SCOREASSOC and GENEVARASSOC and multivariate analyses of variants near APOE applied to the ADSP Discovery Case - Control Based Extension Study.

NG00102 - Genomic and multi-tissue proteomic integration for understanding the biology of disease and other complex traits

Future Datasets

17K whole-genomes



GCAD is currently processing an additional 13,000 whole-genomes to be joint-called with the first whole-genome dataset, totaling about 17,000 whole-genomes. Joint calling of this dataset will begin in March 2020. traits

74	90,743	12
DATASETS	SAMPLES	DATA TYPES