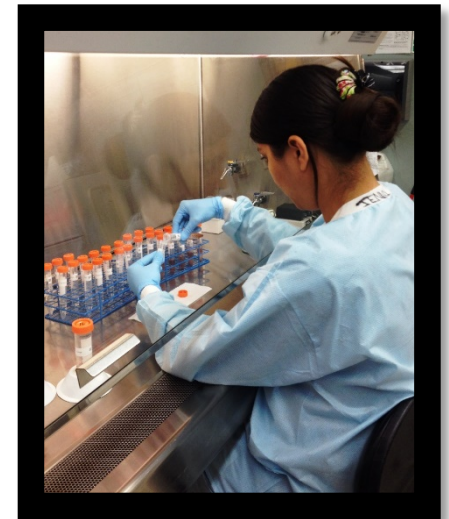


The National **Centralized** Repository for Alzheimer's **Disease and Related** **Dementias**

Tatiana Foroud, Ph.D., Principal Investigator
Indiana University School of Medicine
U24AG21886



2018 Headlines

IUSM Newsroom >

NIH funds major biobank expansion at IU School of Medicine to support Alzheimer's disease research

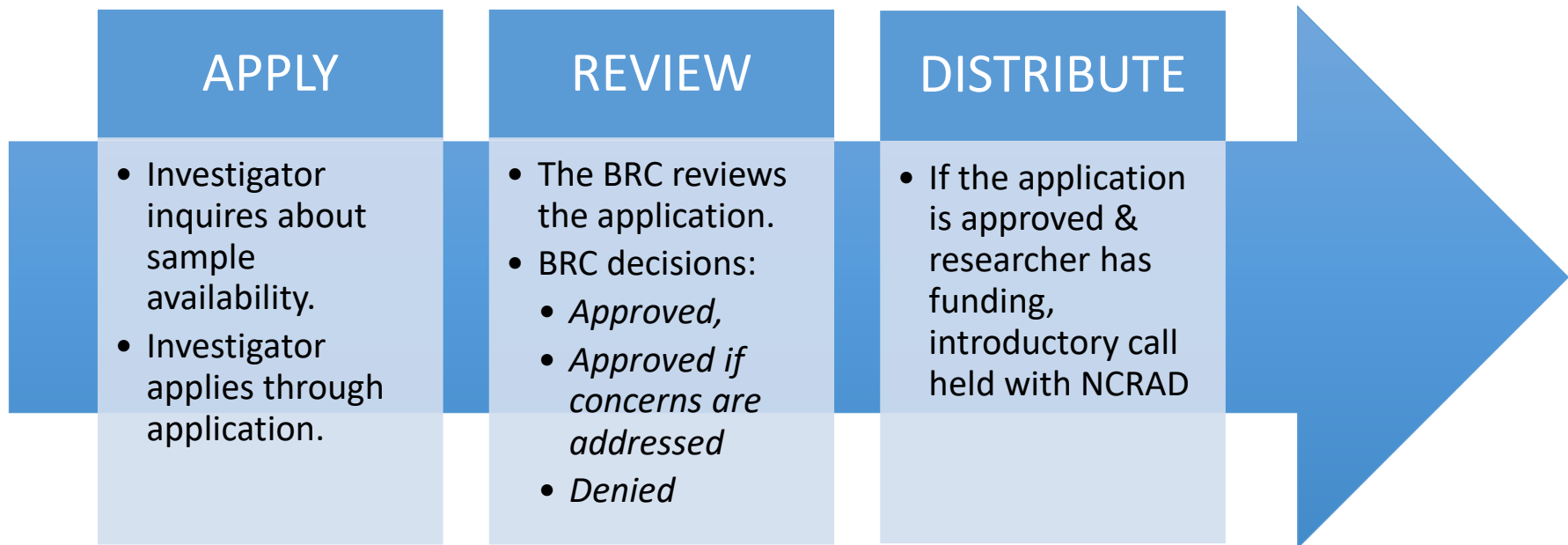
July 19, 2018

With a grant from the National Institute of Health's **National Institute on Aging**, **Indiana University School of Medicine** will dramatically increase the size and scope of the biobank that stores DNA and other biological samples used by researchers globally to better understand, treat and hopefully cure Alzheimer's disease.

Expansion of Alzheimer's disease biospecimens repository prompts name change

**New Initiatives
at NCRAD:
Biospecimen Review
Committee**

NCRAD Biospecimen Review Committee



Timeline from application to Review Decision

Last date of submission

Review

Notification of Result & Reviews

1 month

1-2 weeks

Want to learn more about NCRAD samples.....

FINAL AGENDA

NACC Data/Methods Meeting

1:30 – 3:15pm • Saturday, October 20, 2018 • Grand Ballroom A&B, Conference Level (4th Floor)

- | | |
|--------|---|
| 1:30pm | Welcome; NACC updates and future directions
George Thomas, MS <small>MANAGER OF COMPUTING (INTERIM), NACC</small> |
| 1:50 | Working with NACC data: Access and use in the scientific community
Merilee Teylan, MPH <small>SR. RESEARCH SCIENTIST, NACC</small> |
| 2:10 | NCRAD update: How can I find NCRAD samples linked to NACC data?
Tatiana Foroud, PhD <small>PI, NCRAD</small> |
| 2:30 | Recent statistical methodology publications using the NACC UDS database
Kwun Chuen Gary Chan, PhD <small>CO-INVESTIGATOR AND STATISTICIAN, NACC</small> |
| 2:50 | Example of addressing a research question using NACC data: Studies on primary age-related tauopathy (PART)
Charles Mock, MD, PhD <small>ASSOCIATE DIRECTOR AND EPIDEMIOLOGIST, NACC</small> |
| 3:15pm | Adjourn |

New Initiatives at NCRAD:

Induced Pluripotent Stem Cells
(iPSCs) and
Fibroblast Lines

Researchers Developing iPSC/Fibroblast Lines

- Researchers developing iPSC and fibroblast lines must share them with other researchers
 - Cost and time to expand lines for distributions
- NCRAD developed a new service to support distribution of fibroblasts and iPSCs

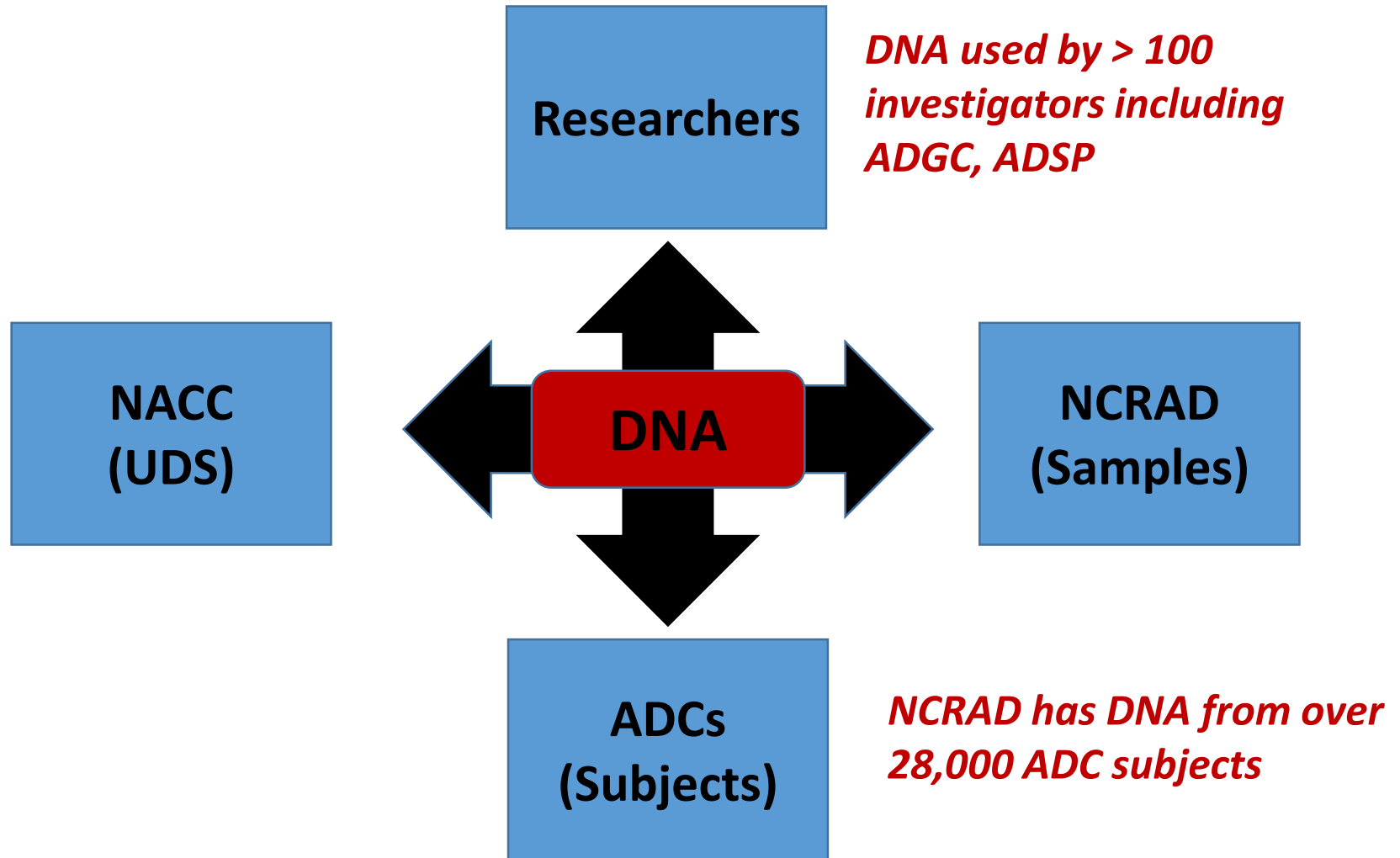
<https://is.gd/NCRADIPSC>

Requesting Samples

- Many lines are generated from ADC participants
 - NCRAD will maintain link to NACC data
 - Ability to select samples from individuals meeting specific clinical criteria
- NCRAD will utilize the same catalog system as for other biospecimens
 - Investigators can also pair molecular data (GWAS, WES, WGS) with samples to select subjects with particular mutations/variants
 - Investigators can download iPSC growth and expansion protocols

New Initiatives
at NCRAD:
Support Central Banking
for the ADCs

Leverage Successful Model Built for DNA

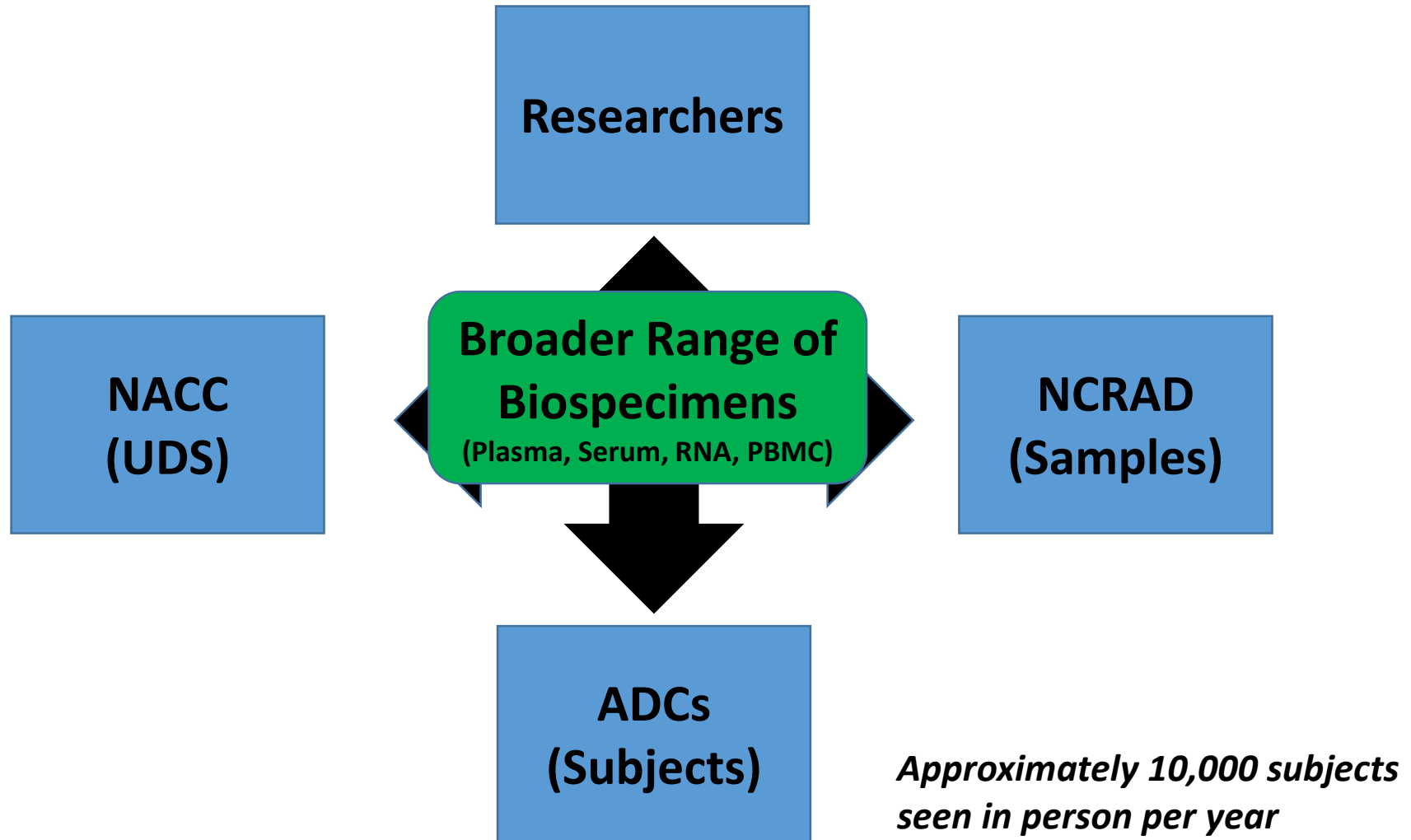


Data for ADC Contributed Samples at NCRAD

- **26,552** with APOE
- **15,966** with GWAS ADC 1-9
 - **3,758** more in ADC 10 including MCI and EOAD
- **13,490** with exome chip
- **3,260** with WES through the ADSP
- **1,183** with WGS through the ADSP
 - ~3,900 ADC ADSP Follow-up Study (FUS) samples sent
 - 14,000-16,000 total FUS samples planned for WGS

*all totals above include Phase 1 and Phase 2 subjects

Leverage Successful Model Built for DNA... to Develop New Biomarkers



What could be done with centralized samples from ADCs?

- Ability to do large scale studies with a wider range of specimens across the ADCs
 - For example, complete a particular assay in all plasma samples from individuals meeting criteria for AD or matched controls
- All biomarker data from ADC subject samples will be made available to researchers (including ADCs)
 - This approach has been very successful with DNA (return of APOE, GWAS)

Accelerating Biomarker Development: Planning For the First Year (Launch Jan 1)

ADC

Propose blood collection from 3,000 subjects



Volume	Product
2x10 ml	Buffy coat (DNA) + Plasma aliquots
2x10 ml	PBMCs
1x10 ml	Serum aliquots
1x2.5 ml	RNA

Uniformly collected & processed blood samples



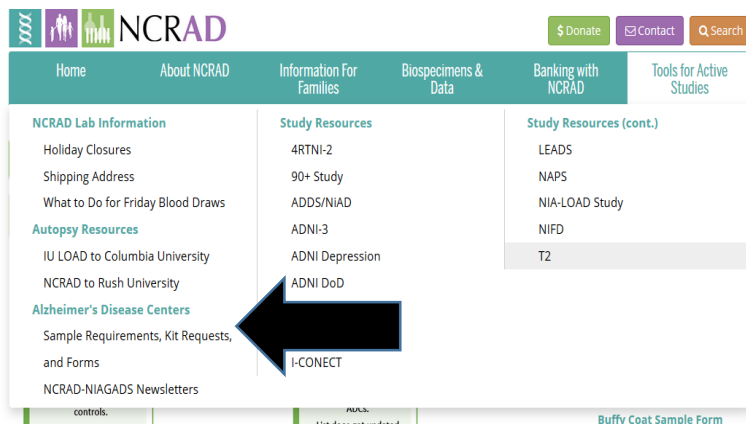
NCRAD **Buffy coat (DNA), plasma, serum aliquots; Blood for RNA, PBMCs**

What is the Advantage?

- Large numbers of samples, collected uniformly, available in a single place
 - ADCs receive from NCRAD all materials for sample collection, processing and aliquoting
 - ADCs receive funding for sample collection (up to \$100/subject)
 - Reduced ADC burden to store large numbers of samples
 - Single MTA used by a researcher receiving samples from NCRAD
- All data generated from the samples made available rapidly to the research community
 - Initially propose key assays in large numbers of samples
 - Data can now be used by the ADCs to address their research questions

Accelerating Biomarker Development: Planning For the First Year

- We want to identify ADCs interested in participating in 2019 as we launch this initiative
- ADC page of NCRAD website has a link to a RedCap survey where we will gather information from interested ADCs



ADC Page on NCRAD Website



RedCap link at top of page

www.ncrad.org

Accelerating Biomarker Development: Expand to all ADCs (U19)

ADC

10,000 in person study visits at the ADCs/year



Uniformly collected & processed blood samples

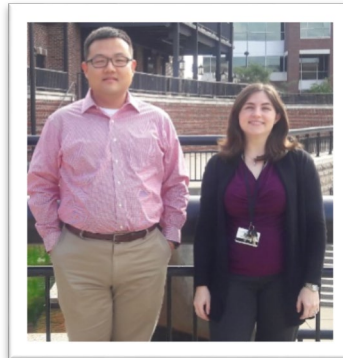


NCRAD

Buffy coat (DNA), plasma, serum aliquots; Blood for RNA, PBMCs; CSF aliquots

Acknowledgements

- NCRAD Executive Committee
- NCRAD Biospecimen Review Committee
- NIA
- ADCs
- NACC
- NIAGADS
- ADGC/ADSP
- Studies contributing samples to NCRAD



Questions/Contact: kelfaber@iu.edu
or alzstudy@iu.edu