

# National Centralized Repository for Alzheimer's Disease and Related Dementias (NCRAD) Updates

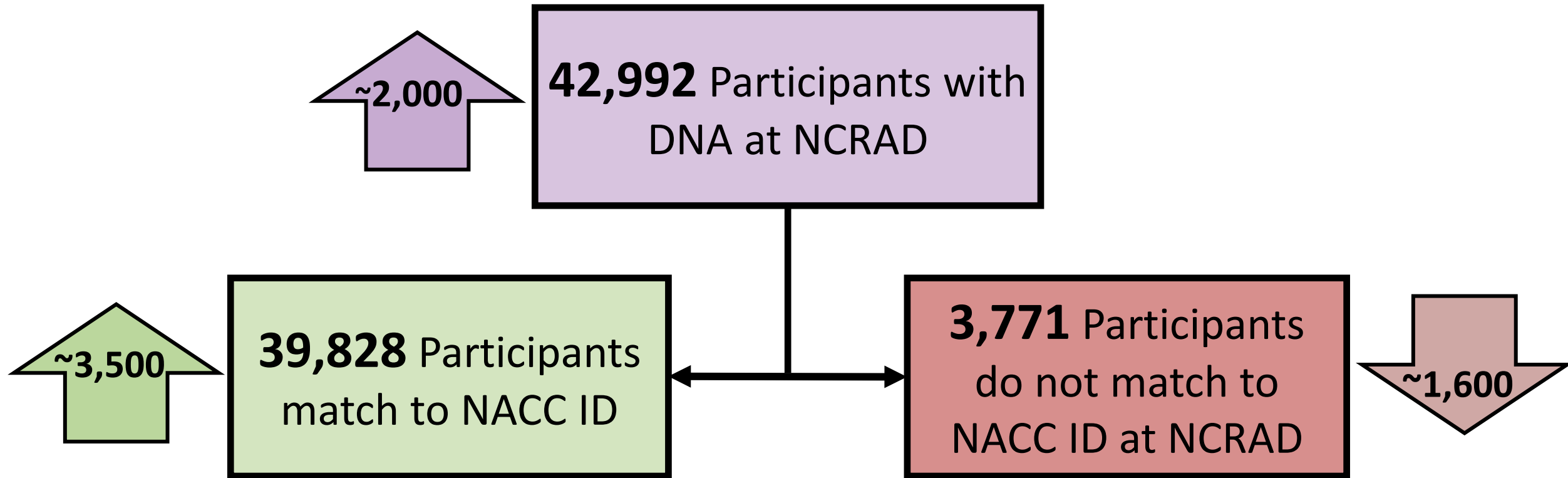


Support by: U24AG021886

# NCRAD Competitive Revision Funded

- Continuation of the NCRAD Biomarker Assay Laboratory for 3 more years
  - Increased capacity to run ~15,000 samples/year
- Funds to support sample banking and plasma biomarkers for studies recruiting diverse participants
  - Apply to bank samples at NCRAD [on our website](#)

# Update on the NCRAD and ADRC Collaboration



**DNA from more than 2,400 new ADRC participants received at NCRAD in 2023 alone!**

# Alzheimer Disease Center Fluid Biomarker Initiative (ADCFB)



Blood-only initiative from the well characterized ADRC participants

- DNA, RNA, plasma, serum, PBMCs

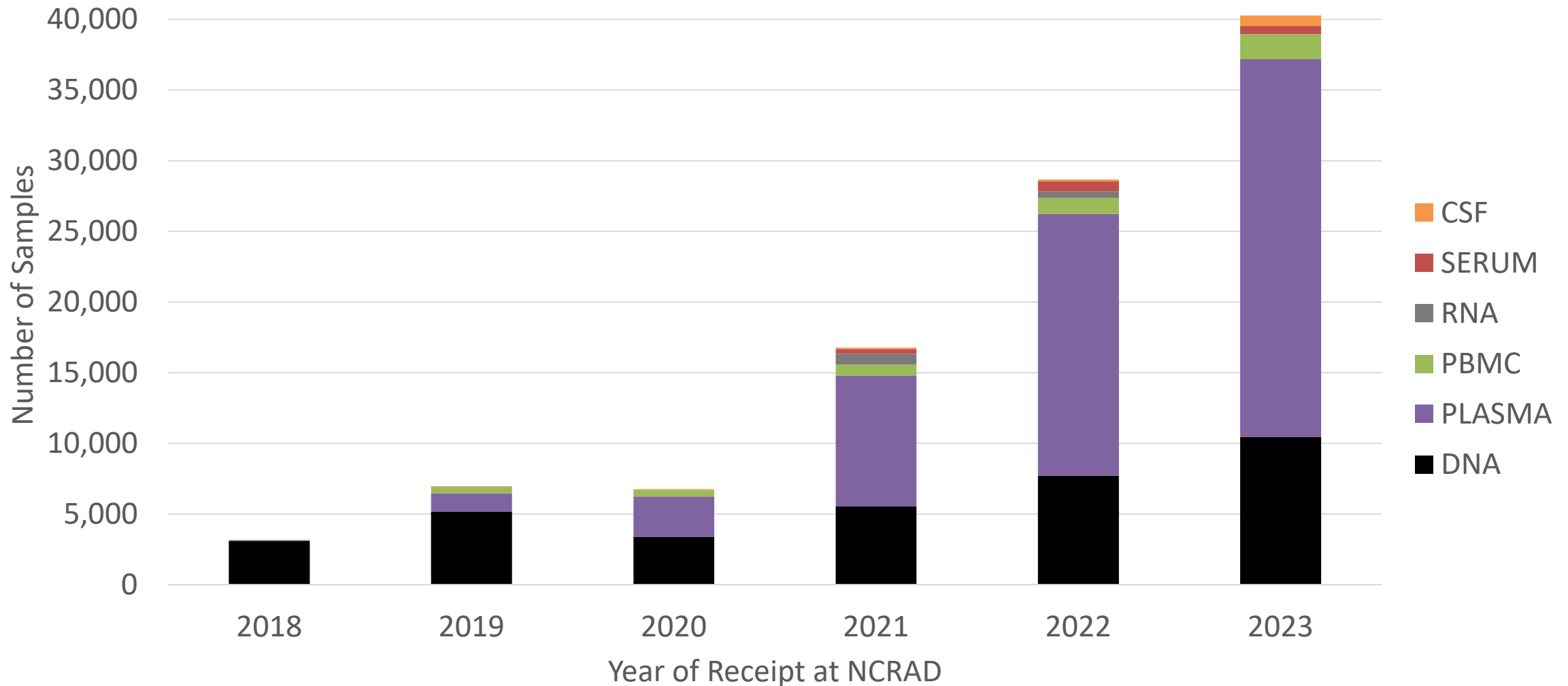


These samples support new research discoveries



All data generated from ADRC samples at NCRAD must be shared with the research community

# ADRC Samples Received at NCRAD 2018-2023



- **Since 1/1/2018:** 99 distributions to 31 unique investigators
  - ADCFB specifically: 16 unique investigators and 8,850 unique aliquots

# Count of Unique ADRC Participants with non-DNA Sample Type by Site<sup>1,2</sup>

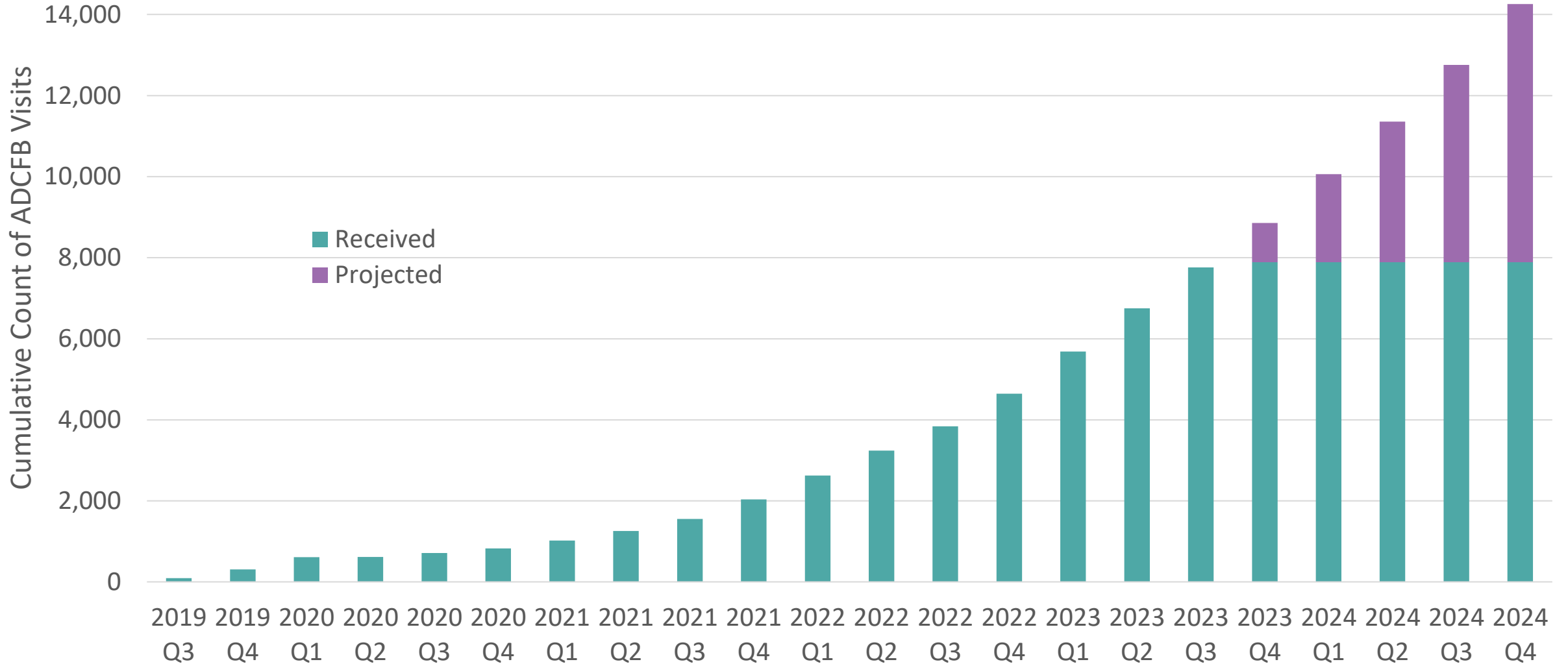
Study Site	CSF	PBMC	PLASMA	RNA	SERUM
Alabama	0	91	90	0	0
Arizona	75	164	970	168	173
Boston	0	276	252	75	76
Emory	0	0	65	0	0
Indiana	0	65	384	0	0
Kansas <sup>3</sup>	0	0	376	0	0
Mass Gen	0	10	176	0	0
Mayo <sup>3</sup>	0	38	153	0	0
Michigan	0	44	39	21	26
Nevada	0	0	98	0	0
New Mexico	0	0	64	0	0
New York	6	91	436	0	0
Oregon	0	115	102	41	41
Pittsburgh	0	44	501	59	60
South Texas <sup>3</sup>	6	0	317	0	0
UC Irvine <sup>3</sup>	0	91	36	0	0
UCSD	0	2	384	0	0
UCSF <sup>3</sup>	0	542	200	0	0
USC <sup>3</sup>	0	64	366	0	0
UTSW	0	47	50	47	48
Vanderbilt	0	153	149	0	0
Wake Forest <sup>3</sup>	0	4	869	3	4
Wash U	0	0	50	0	0
Washington <sup>3</sup>	0	0	177	0	0
Wisconsin	0	37	423	38	39
Yale	27	23	366	25	25
<b>Totals</b>	<b>114</b>	<b>1,901</b>	<b>7,093</b>	<b>477</b>	<b>492</b>

<sup>1</sup>Sample receipt through 10/10/23;

<sup>2</sup>Unless otherwise noted, samples are collected using the ADCFB protocol;

<sup>3</sup>A portion of these participants had samples collected outside of the ADCFB protocol

# ADCFB Sample Projections



By Q4 2024, NCRAD is projected to have plasma from ***over 14,000 ADRC visits!***

# NCRAD Biomarker Assay Laboratory (BAL)

- Lab offers qualified, commercially available assays
  - Internal qualifications
  - Strong QC procedures
    - Locally collected plasma reference pools
  - Lot-to-Lot bridging
    - Ensures comparability between studies and lots
- Equipment
  - Quanterix HD-X and Fujirebio Lumipulse
    - New Assays: ALZpath217
- Not limited to ADRCs
  - Can also run non-ADRC samples: [Request a quote](#) by completing the survey on the NCRAD website ([ncrad.org](http://ncrad.org))



Jeff Dage, PhD



Kristen Russ, PhD



# BAL Assays

2023 ADCFB Fall Return

Assay Kits	Biofluid	Platform	Biomarkers	Qualification Status
NF-Light Advantage Kit	Plasma	Quanterix Simoa HD-X	NfL	Complete
Neurology 2-Plex B (N2PB) Kit	Plasma	Quanterix Simoa HD-X	NfL, GFAP	Complete
Neurology 4-Plex E (N4PE) Kit	Plasma	Quanterix Simoa HD-X	NfL, GFAP, Abeta 40, Abeta 42	Complete
pTau 181 v2.1 Advantage Kit	Plasma	Quanterix Simoa HD-X	pTau 181	Complete
pTau 217 Alzpath Kit	Plasma	Quanterix Simoa HD-X	pTau 217	Complete
Lumipulse G $\beta$ -Amyloid 1-42 Kit	Plasma	Fujirebio Lumipulse	Abeta 42	Complete
Lumipulse G $\beta$ -Amyloid 1-40 Kit	Plasma	Fujirebio Lumipulse	Abeta 40	Complete
Lumipulse G pTau 181 Kit	Plasma	Fujirebio Lumipulse	pTau 181	Complete
Lumipulse G pTau217 Kit	Plasma	Fujirebio Lumipulse	pTau 217	Upcoming
Lumipulse G $\beta$ -Amyloid 1-42 Kit	CSF	Fujirebio Lumipulse	Abeta 42	Upcoming
Lumipulse G $\beta$ -Amyloid 1-40 Kit	CSF	Fujirebio Lumipulse	Abeta 40	Upcoming
Lumipulse G pTau 181 Kit	CSF	Fujirebio Lumipulse	pTau 181	Upcoming

**BAL annual capacity is 15,000 samples going forward!**

# ADCFB Plasma Biomarker Data Returns

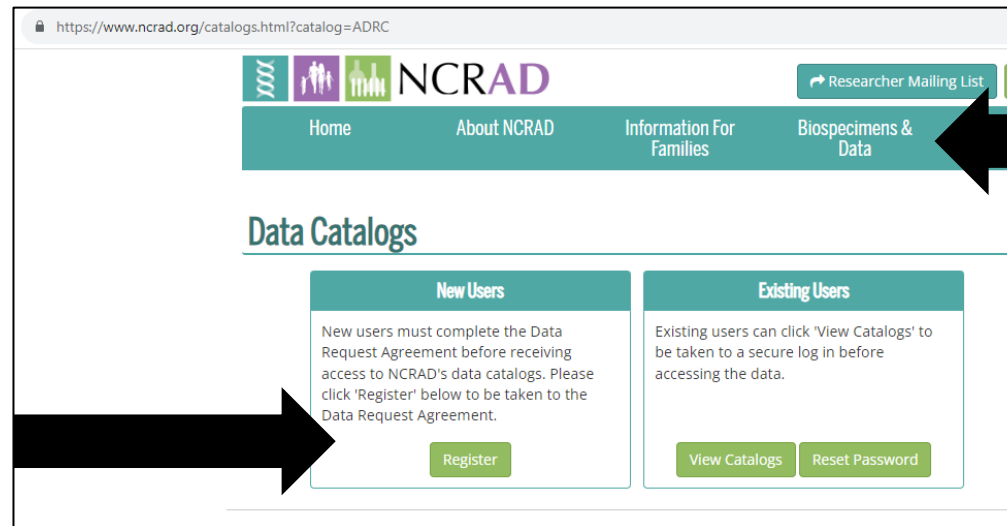
Return	Assays	Unique Participants	Unique Visits
1	<ul style="list-style-type: none"> <li>• Quanterix N4PE*</li> <li>• Ptau 181</li> </ul>	1,589	1,839
2	<ul style="list-style-type: none"> <li>• Quanterix N4PE*</li> <li>• Ptau 181</li> </ul>	932	1,023
3	<ul style="list-style-type: none"> <li>• Quanterix N4PE*</li> <li>• Ptau 181</li> </ul>	621	680
4	<ul style="list-style-type: none"> <li>• Quanterix N2PB*</li> <li>• Lumipulse A-betas</li> <li>• Ptau 217</li> </ul>	1,330	1,390
5	<ul style="list-style-type: none"> <li>• Quanterix N2PB*</li> <li>• Lumipulse A-betas</li> <li>• Ptau 217</li> </ul>	~1,000	~1,000

\*N4PE = NfL, GFAP, Abeta 40, Abeta 42

\*N2PB = NfL, GFAP

# Biomarker Data Now Available at NCRAD

- Biomarker data is returned to contributing site via NACC
- After 90 day data embargo, results are incorporated into NCRAD ADRC catalog to assist researchers in selecting samples for requests
  - Researchers requesting access to these data are vetted to check if they are for profit or not for profit investigators



New users must register to gain access through a username and password

Find catalog under Biospecimens & Data, Accessing Biospecimens & Data

- Full biomarker dataset will be available to request from NACC in future

# ADRC Catalog with Biomarker Data

ADRC Catalog														DICTIONARY	JOIN	CART	DOWNLOAD	HELP	Welcome Kelley Faber!	
SAMPLE...	NACCID	Visit	Specime...	Quantity	Quantity ...	Specime...	HD-X pT...	HD-X NFL	HD-X GF...	HD-X AB...	HD-X AB...	GDS_profit								
1607571	NACC874455	1	PLASMA	200	ul	31						for profit								
1642172	NACC456378	7	PLASMA	200	ul	22	2.94	16.47	198.09	159.05	3.46	for profit								
1642198	NACC967500	12	PLASMA	200	ul	34	2.34	17.04	131.43	116.84	4.91	for profit								
1642223.1	NACC666819	11	PLASMA	200	ul	62	4.05	19.33	218.51	124.37	7.46	for profit								
1642223.2	NACC666819	7	PLASMA	200	ul	62						for profit								
1642231	NACC088971	11	PLASMA	200	ul	35	3.47	11.24	70.42	111.36	5.88	for profit								
1642242	NACC244965	11	PLASMA	200	ul	36	6.9	39.51	340.99	274.9	9.01	for profit								
1642253	NACC629445	3	PLASMA	200	ul	24	2.38	8.91	75.87	73.95	4.07	for profit								
1642264	NACC460044	8	PLASMA	200	ul	36	2.41	15.61	172.02	119.53	4.15	for profit								
1642278.1	NACC977671	11	PLASMA	200	ul	42						for profit								
1642278.2	NACC977671	8	PLASMA	200	ul	42	9.49	25.33	220.44	85.04	4.83	for profit								
1642293	NACC686266	11	PLASMA	200	ul	30	4.05	16.24	157.55	142.47	8.38	for profit								
1642324	NACC766812	1	PLASMA	200	ul	34	2.01	4.93	34.42	101.84	4.53	for profit								
1642411	NACC233416	2	PLASMA	200	ul	22	2.15	6.75	78.13	119.18	6.53	for profit								
1642433	NACC033811	11	PLASMA	200	ul	32	4.77	16.8	102.76	109	4.76	for profit								
1642455	NACC034203	12	PLASMA	200	ul	33	4.95	21.63	125.06	124.91	3.11	for profit								
1642466.1	NACC441348	1	PLASMA	200	ul	48	8.45	11.74	83.76	52.95	3.63	for profit								
1642466.2	NACC441348	3	PLASMA	200	ul	48						for profit								
1642477	NACC786258	9	PLASMA	200	ul	33	5.63	36.3	155.66	133.38	6.6	for profit								
1642502	NACC904489	12	PLASMA	200	ul	26	9.63	15.58	116.25	142.15	7.8	for profit								
1642524	NACC601467	8	PLASMA	200	ul	20	2.12	21.92	354.75	87.89	5.33	for profit								
1642556	NACC663999	3	PLASMA	200	ul	32	6.78	25.11	273.33	139.03	8.56	for profit								
1642578	NACC351989	11	PLASMA	200	ul	32	2.91	17.52	145.8	128.89	8.4	for profit								
1642600	NACC025345	1	PLASMA	200	ul	37	3.6	19.35	200.43	93.01	3.14	for profit								
1642611	NACC547553	13	PLASMA	200	ul	28	3.89	30.85	213.89	152.58	7.68	for profit								

Added variables to the catalog. Also separated catalog out into two versions. One that allows for profit users and one that allows not for profit users only based on their GDS forms.

<https://www.ncrad.org/catalogs.html?catalog=ADRC>

# Questions...



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