

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



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# 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

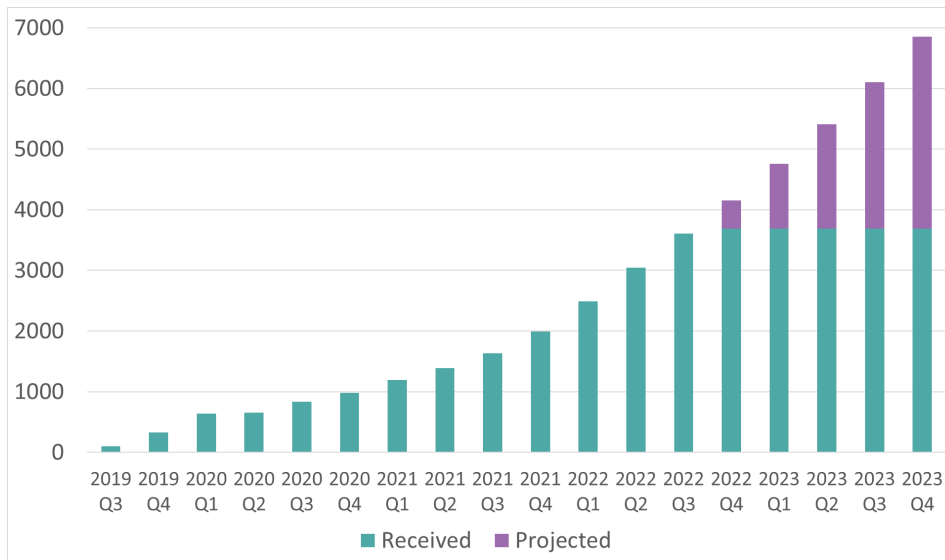
# Count of Subjects with each ADCFB Sample Type by Site<sup>1</sup>

| Study Site    | BUFFY COAT (DNA) | CSF <sup>2</sup> | PBMC       | PLASMA       | RNA        | SERUM      |
|---------------|------------------|------------------|------------|--------------|------------|------------|
| Alabama       | 18               | 0                | 25         | 18           | 0          | 0          |
| Arizona       | 383              | 38               | 164        | 383          | 168        | 169        |
| Boston        | 181              | 0                | 156        | 181          | 75         | 76         |
| Indiana       | 250              | 0                | 0          | 250          | 0          | 0          |
| Kansas        | 8                | 0                | 0          | 8            | 0          | 0          |
| Mass Gen      | 105              | 0                | 0          | 105          | 0          | 0          |
| Michigan      | 40               | 0                | 44         | 40           | 21         | 26         |
| Nevada        | 60               | 0                | 0          | 60           | 0          | 0          |
| New York      | 326              | 0                | 91         | 326          | 0          | 0          |
| Oregon        | 41               | 0                | 42         | 41           | 41         | 41         |
| Pittsburgh    | 390              | 0                | 44         | 390          | 59         | 60         |
| South Texas   | 16               | 0                | 0          | 16           | 0          | 0          |
| UCSD          | 304              | 0                | 0          | 304          | 0          | 0          |
| USC           | 0                | 0                | 4          | 0            | 0          | 0          |
| UTSW          | 51               | 0                | 47         | 51           | 47         | 48         |
| Vanderbilt    | 42               | 0                | 51         | 42           | 0          | 0          |
| Wake Forest   | 95               | 0                | 4          | 95           | 3          | 4          |
| Wash U        | 50               | 0                | 0          | 50           | 0          | 0          |
| Wisconsin     | 292              | 0                | 37         | 292          | 38         | 39         |
| Yale          | 271              | 16               | 23         | 271          | 25         | 25         |
| <b>Totals</b> | <b>2,923</b>     | <b>54</b>        | <b>732</b> | <b>2,923</b> | <b>477</b> | <b>488</b> |

ADCFB is a blood-based initiative. At a minimum, sites had to contribute DNA and plasma. They could also contribute PBMCs, RNA and Serum. <sup>1</sup>Data as of 10/07/22; <sup>2</sup>Two sites asked if they could also contribute CSF.

# ADCFB Sample Projections

Cumulative Sum of ADCFB Visits Received at NCRAD by Quarter Since Study Launch



- Teal bars indicate visit samples received at NCRAD
- Starting in Q4 2022, the purple bars indicate projected visits based on the trajectory of visits since Q3 2019

By Q4 2023, NCRAD is projected to have plasma from ***over 6,000 ADRC visits***

# NCRAD

## Biomarker Assay Laboratory (BAL)

- Lab offers qualified, commercially available assays
  - Internal qualifications
    - Evaluates precision, dilutional linearity, parallelism, and spike recovery
  - Lot-to-Lot bridging
    - Ensures comparability between studies and lots
- Equipment
  - Tecan Fluent
    - Automated liquid handling
  - Quanterix HD-X
    - Utilizes Quanterix Simoa HD-X kits



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# NCRAD BAL

## Fluid Biomarker Analysis

- Currently plasma biomarker assays have been run on 2,620 ADC participants
  - Assays run include Quanterix HD-X P-tau 181, Neurology 4-Plex E (GFAP/ NfL/ Abeta 40/ Abeta 42)
  - Data from first batch has been returned to the ADRCs via NACC
    - Samples will continue to be run on a quarterly basis
    - Data will be submitted to NACC for return

# Incentives for ADRCs to Bank DNA & Plasma at NCRAD

- Financial
  - NACC reimburses \$50/visit for a buffy coat submission
  - NACC reimburses \$50/visit for a plasma submission
- Genetic Data
  - GWAS
  - *APOE* genotyping
- Plasma Biomarker Data
  - NCRAD lab runs biomarker assays on ADRC plasma samples and returns the data to ADRCs
  - Current assays include: P-tau 181, Neurology 4-Plex E (GFAP/NfL/Abeta 40/Abeta 42)
  - Plan to validate P-tau 217 when kit becomes commercially available

# Questions...



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