Multimodality Neuroimaging in the Stanford ADRC

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ADRC Participant Appreciation Day
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Stanford ADRC Imaging Core
Positron Emission Tomography (PET)

- Specific target in brain (amyloid plaques, tau tangle)

Magnetic Resonance Imaging (MRI)

- Different tissue types (brain function and structure)
PET & MRI measures multiple targets

Amyloid → Tau → Brain Function → Brain Structure

Future...
Lewy Bodies? TDP-43?
Amyloid PET

Amyloid Plaques

Thal 2002
Tau PET

Tau Tangles

Amyloid Scan

Focal to Widespread

AD Subtypes

Braak & Braak 1997

Ossenkoppele et al., 2016

A Posterior cortical atrophy

B Logopenic variant PPA
Ultra-low-dose Tau PET Imaging (Zaharchuk)
7T MRI (Poston & Zeineh)

Substantia Nigra volume in Parkinson’s

Poston & Zeineh 2020
Imaging Goals

- Combine PET and MRI markers
  - Risk profiles
  - Heterogeneity in trajectories
  - Validate blood markers

- Integrate advanced imaging modalities and methodology
  - Reduce barriers to imaging
  - Improve sensitivity
Thank you!

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