

You-Rim Lee¹, Xuemei Zeng¹, Marissa F. Farinas¹, Madelyn K. Pierce¹, Nya Nicholson¹, Ann D. Cohen², Oscar L. Lopez³, Thomas K. Karikari^{1*}

¹Department of Psychiatry, School of Medicine, University of Pittsburgh, Pittsburgh, PA, USA, ²University of Pittsburgh Alzheimer's Disease Research Center (ADRC), Pittsburgh, PA, USA, ³University of Pittsburgh School of Medicine, Pittsburgh, PA, USA

Highlights: Systematically optimized DPS workflow for AD biomarker detection (127 targets), **Sample concentration step:** detected proteins increased from 71% → 85% across 127 targets, **Blood volume optimization:** 70 µL optimal for consistent measurement, **Ambient temperature stability:** validated for 7 days for 6 key AD proteins, **Establishes key preanalytical parameters for evidence-based DPS application in AD research**

