

Research program - Aliza Wingo, MD, MSc, Professor of Psychiatry and Albert Holmes Rowe Endowed Chair of Genetics I, University of California, Davis School of Medicine (wingolab.org)

My research program aims to uncover the brain proteins that drive major psychiatric disorders (such as major depression, PTSD, alcohol use disorder, and Alzheimer's dementia) using genome-wide association studies (GWAS) and cutting-edge multi-omics approaches (microRNAs, transcriptomes, and proteomes). By identifying and characterizing these proteins, we gain powerful insights into disease mechanisms and open new avenues for therapeutic discovery. Our current projects bring together genetics, neurobiology, and clinical data to ask pressing questions with the overarching goal of transforming patient care and outcomes:

1. Connections between psychiatric illness and dementia – Investigating how early- and mid-life psychiatric disorders connect with late-life dementia at genetic and brain protein levels, with the goal of advancing early prevention and precision therapeutics.
2. Characterizing the functions of causal proteins in iPSC-derived brain organoids to accelerate development of innovative treatment strategies.
3. Harnessing large-scale electronic health records (VA, UC Davis Health, UK Biobank) for drug repurposing and pharmacogenetics research.

Our team is highly collaborative, interdisciplinary, and dynamic. I have presented our work at 35 national and international seminars and conferences, including as a **Plenary Speaker at the 2023 World Congress of Psychiatric Genetics**. I was honored to receive the **U.S. Presidential Early Career Award for Scientists and Engineers (PECASE)**, the nation's highest recognition for early-career scientists who show exceptional potential for leadership early in their research careers.

We have exciting opportunities for motivated individuals who want to bridge neuroscience, genetics, precision medicine, and clinical care and contribute to research to transform patient outcomes.

Publications: [Aliza Wingo PubMed link](#) Below are some highlighted publications

1. **Wingo AP**, ..., Ressler KJ. DICER1 and microRNA regulation in post-traumatic stress disorder with comorbid depression. *Nature Communications* **2015**: Dec 3. PMID: [26632874](#)
2. **Wingo AP**, Almli LM, ... Ressler KJ. Genome-wide association study of positive emotion identifies a genetic variant and a role for microRNAs. *Molecular Psychiatry* **2017**:22(5):774-783 PMID: [27595594](#)
3. **Wingo AP**[§], ..., Levey AI, Wingo TS[§]. Integrating human brain proteomes with genome-wide association data implicates new proteins in Alzheimer's disease pathogenesis. *Nature Genetics* **2021**:53(2):143-146 PMID: 33510477
4. Wingo TS[§],..., Seyfried NT, Levey AI, **Wingo AP**[§]. Brain proteome-wide association study implicates novel proteins in depression pathogenesis. *Nature Neuroscience* **2021**: 810-817 PMID: [33846625](#)
5. Wingo TS, ..., **Wingo AP**. Alzheimer's disease genetic burden is associated with mid-life depression among persons with normal cognition. *Alzheimer's & Dementia* **2022**: PMID: [35727298](#)
6. Wingo TS, Gerasimov E,..., **Wingo AP**. Integrating human brain proteomes with genome-wide association data implicates novel proteins in post-traumatic stress disorder. *Molecular Psychiatry* **2022**:27(7):3075-3084 PMID: [35449297](#)
7. Harerimana NV, ..., Levey AI, Seyfried NT, Wingo TS, **Wingo AP**. Genetic Evidence Supporting a Causal Role of Depression in Alzheimer's Disease. *Biological Psychiatry* **2022**: 25-33 PMID: [35177243](#)
8. Wingo TS, ..., Seyfried NT, Levey AI, **Wingo AP**. Shared mechanisms across the major psychiatric and neurodegenerative diseases. *Nature Communications* **2022**:13(1):4314 PMID: [35882878](#)
9. **Wingo AP**[§], Liu Y, ..., Levey AI, Seyfried NT, Wingo TS[§]. Sex differences in brain protein expression and disease. *Nature Medicine* **2023**: 2224-2232; Epub 2023 Aug 31. PMID: 37653343.
10. Vattathil SM, ..., Wingo TS[§], **Wingo AP**. Mapping the microRNA landscape in the older adult brain and its genetic contribution to neuropsychiatric conditions. *Nature Aging*, **2024**, Dec 6. PMID: 39643657.
11. **Wingo AP**[§], Liu Y, ..., Seyfried NT, Wingo TS[§]. Multi-ancestry brain pQTL fine-mapping and integration with GWAS of 21 neurologic and psychiatric conditions. *Nature Genetics*, 2025, in press.
12. Howard N...Wingo TS, **Wingo AP**. Life purpose lowers risk for cognitive impairment in a U.S. population-based cohort. *American Journal of Geriatric Psychiatry*, 2025 June 5:S1064-7481. PMID: 40555597