

# Stanford

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## Andy Tsai

Postdoctoral Scholar, Neurology and Neurological Sciences

### Bio

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#### HONORS AND AWARDS

- AGE 2026 Early Career Scholar, American Aging Association (2026)
- ADRC REC Scholar, Stanford ADRC (2025-2027)
- 2026 New Vision Research Cohort, The Charleston Conferences on Alzheimer's Disease (2025-2026)
- ATP Scholar, CNS Metabolism, University of Kentucky (2025)
- Associate Editor, *Frontier in aging neuroscience* (2025)
- Advancement, Community, and Engagement Committee, Departments of Neurosurgery and Neurology, Stanford University School of Medicine (2024)
- Editorial Board Member, *Translational Neuroscience* (2024)
- Postdoc Champion: Community Impact Award, Stanford University Office of Postdoctoral Affairs (2024)
- Communications Chair, Immunity and Neurodegeneration Professional Interest Areas, Alzheimer's Association (2024-2026)
- Larry L. Hillblom Fellowship Grant, Larry L. Hillblom Foundation (2023-2026)
- Linda & Jack Gill Graduate Student Award, Gill Center for Bimolecular Science (2022)
- Larry Kays Fellowship, Stark Neurosciences Research Institute (2022)
- ISTAART Ambassador, Alzheimer's Association (2022-2023)
- NIH Outstanding Scholars in Neuroscience Award Program, National Institutes of Health (2021)
- Trainee Professional Development Award, Society for Neuroscience (2021)
- Scientific Program Committee, AAIC Neuroscience Next, Alzheimer's Association (2021)
- Eli Lilly-Stark Research Fellowship in Neurodegeneration, Indiana Clinical and Translational Science Institute (2021-2022)
- Cagiantas Scholar, Indiana University School of Medicine (2020)
- IUPUI Elite 50, Indiana University (2020)
- Paul & Carole Stark Fellowship, Stark Neurosciences Research Institute (2018)

#### STANFORD ADVISORS

- Tony Wyss-Coray, Postdoctoral Faculty Sponsor

### Publications

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#### PUBLICATIONS

- **Mitochondrial Quality Control as a Central Pharmacological Target in Aging.** *Pharmacological research*

Tsui, K. H., Cheng, S. H., Wang, B., Lin, P. H., Raj, E. N., Lin, L. T., Chang, R., Wen, Z. H., Tsai, A. P., Li, C. J.  
2026; 108188

- **Toward actionable interventions in human aging (12th ARDD meeting, 2025).** *Aging*  
Dekan, A., Lore, S., Yoon, Y. E., Sjöholm, A., Tyshkovskiy, A., Terskikh, A., Cuervo, A. M., Georgievskaya, A., Heinz, A., Seluanov, A., Adams, A., Tsai, A. P., Murray, et al  
2026; 18 (1): 282-302
- **PLCG2 signaling and genetic resilience in Alzheimer's disease.** *Molecular neurodegeneration*  
Tsai, A. P., Martin, A. K., Mi, A., Yeh, A. E., Ramirez Lopez, E., Wyss-Coray, T.  
2026; 21 (1)
- **Simultaneous spatial transcriptomics and morphology profiling as tools to explore how microglia change with age.** *Nature aging*  
Henze, D. E., Tsai, A. P., Wyss-Coray, T., Quake, S. R.  
2026
- **Spatially gated oxidative killing: mitoxyperilysis redefines how ROS cause lytic cell death.** *Apoptosis : an international journal on programmed cell death*  
Wu, M. Y., Tsai, A. P., Yong, S. B., Li, C. J.  
2026; 31 (3)
- **Targeting immune cells in the aged brain reveals that engineered cytokine IL-10 enhances neurogenesis and improves cognition.** *Immunity*  
Navarro Negredo, P., You, J., Hauptschein, M., Schroer, A. B., Richard, D. J., Abhiraman, G. C., Tsai, A. P., Sun, E. D., Notarangelo, G., Ramirez-Matias, J., Zhou, O. Y., Buckley, M. T., Malacon, et al  
2026
- **Basic Science and Pathogenesis.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*  
Messenger, E. J., Baar, S., Bedford, L. M., Tsai, A. P., Lin, P. B., Xu, G., Wallace, A., Landreth, G. E., Lamb, B. T., Bissel, S. J.  
2025; 21 Suppl 1: e104521
- **Spatial and single-cell transcriptomics reveal the reorganization of cerebellar microglia with aging.** *Cell reports*  
Tsai, A. P., Henze, D. E., Ramirez Lopez, E., Haberberger, J., Dong, C., Lu, N., Atkins, M., Costa, E. K., Farinas, A., Oh, H. S., Moran-Losada, P., Le Guen, Y., Isakova, et al  
2025; 44 (12): 116624
- **Color-neutral and reversible tissue transparency enables longitudinal deep-tissue imaging in live mice.** *Proceedings of the National Academy of Sciences of the United States of America*  
Keck, C. H., Schmidt, E. L., Roth, R. H., Floyd, B. M., Tsai, A. P., Garcia, H. B., Cui, M., Chen, X., Wang, C., Park, A., Zhao, S., Liao, P. A., Casey, et al  
2025; 122 (35): e2504264122
- **Disruption of the cerebrospinal fluid-plasma protein balance in cognitive impairment and aging.** *Nature medicine*  
Farinas, A., Rutledge, J., Bot, V. A., Western, D., Ying, K., Lawrence, K. A., Oh, H. S., Yoon, S., Ding, D. Y., Tsai, A. P., Moran-Losada, P., Timsina, J., Le Guen, et al  
2025
- **PLCG2 modulates TREM2 expression and signaling in response to Alzheimer's disease pathology.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*  
Messenger, E. J., Baar, S. A., Bedford, L. M., Tsai, A. P., Lin, P. B., Ferguson, C. A., Xu, G., Wallace, A., Landreth, G. E., Lamb, B. T., Bissel, S. J.  
2025; 21 (5): e70231
- **A high-throughput assay platform to discover small molecule activators of the phospholipase PLC-γ2 to treat Alzheimer's disease.** *The Journal of biological chemistry*  
Carr, A. J., Hajicek, N., Tsai, A. P., Acharya, P. P., Hardy, P. B., Meyer, E., Wyss-Coray, T., Pearce, K. H., Sondek, J., Zhang, Q.  
2025: 108356
- **Advancements in Immunity and Dementia Research: Highlights from the 2023 AAIC Advancements: Immunity Conference.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*  
Kloske, C. M., Mahinrad, S., Barnum, C. J., Batista, A. F., Bradshaw, E. M., Butts, B., Carrillo, M. C., Chakrabarty, P., Chen, X., Craft, S., Da Mesquita, S., Dabin, L. C., Devanand, et al  
2024

- **Mitigating mitochondrial dysfunction and neuroinflammation by hematoma aspiration in a new surgical model for severe intracerebral hemorrhage.** *Experimental neurology*  
Hu, W. F., Lee, C. H., Pang, C. Y., Huang, H. Y., Tsai, S. T., Wang, P. K., Shih, M. T., Cheah, P. Y., Wu, Y. F., Tsai, A. P., Tseng, K. Y., Airavaara, M., Liew, et al  
2024: 115098
- **CYP1B1-RMDN2 Alzheimer's disease endophenotype locus identified for cerebral tau PET.** *Nature communications*  
Nho, K., Risacher, S. L., Apostolova, L. G., Bice, P. J., Brosch, J. R., Deardorff, R., Faber, K., Farlow, M. R., Foroud, T., Gao, S., Rosewood, T., Kim, J. P., Nudelman, et al  
2024; 15 (1): 8251
- **APOE4/4 is linked to damaging lipid droplets in Alzheimer's diseasemicroglia.** *Nature*  
Haney, M. S., Palovics, R., Munson, C. N., Long, C., Johansson, P. K., Yip, O., Dong, W., Rawat, E., West, E., Schlachetzki, J. C., Tsai, A., Guldner, I. H., Lamichhane, et al  
2024
- **Deep learning-driven adaptive optics for single-molecule localization microscopy.** *Nature methods*  
Zhang, P., Ma, D., Cheng, X., Tsai, A. P., Tang, Y., Gao, H. C., Fang, L., Bi, C., Landreth, G. E., Chubykin, A. A., Huang, F.  
2023
- **Genetic variants of phospholipase C- $\gamma$ 2 alter the phenotype and function of microglia and confer differential risk for Alzheimer's disease.** *Immunity*  
Tsai, A. P., Dong, C., Lin, P. B., Oblak, A. L., Viana Di Prisco, G., Wang, N., Hajicek, N., Carr, A. J., Lendy, E. K., Hahn, O., Atkins, M., Foltz, A. G., Patel, et al  
2023
- **Amyloid pathology reduces ELP3 expression and tRNA modifications leading to impaired proteostasis.** *Biochimica et biophysica acta. Molecular basis of disease*  
Pereira, M., Ribeiro, D. R., Berg, M., Tsai, A. P., Dong, C., Nho, K., Kaiser, S., Moutinho, M., Soares, A. R.  
2023: 166857
- **TREM2 splice isoforms generate soluble TREM2 species that disrupt long-term potentiation.** *Genome medicine*  
Moutinho, M., Coronel, I., Tsai, A. P., Di Prisco, G. V., Pennington, T., Atwood, B. K., Puntambekar, S. S., Smith, D. C., Martinez, P., Han, S., Lee, Y., Lasagna-Reeves, C. A., Lamb, et al  
2023; 15 (1): 11
- **INPP5D deficiency attenuates amyloid pathology in a mouse model of Alzheimer's disease.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*  
Lin, P. B., Tsai, A. P., Soni, D., Lee-Gosselin, A., Moutinho, M., Puntambekar, S. S., Landreth, G. E., Lamb, B. T., Oblak, A. L.  
2022
- **Integrating multimodality magnetic resonance imaging to the Allen Mouse Brain Common Coordinate Framework.** *NMR in biomedicine*  
Wang, N., Maharjan, S., Tsai, A. P., Lin, P. B., Qi, Y., Wallace, A., Jewett, M., Liu, F., Landreth, G. E., Oblak, A. L.  
2022: e4887
- **The P522R protective variant of PLCG2 promotes the expression of antigen presentation genes by human microglia in an Alzheimer's disease mouse model.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*  
Claes, C., England, W. E., Danhash, E. P., Kiani Shabestari, S., Jairaman, A., Chadarevian, J. P., Hasselmann, J., Tsai, A. P., Coburn, M. A., Sanchez, J., Lim, T. E., Hidalgo, J. L., Tu, et al  
2022; 18 (10): 1765-1778
- **Age-dependent microstructure alterations in 5xFAD mice by high-resolution diffusion tensor imaging.** *Frontiers in neuroscience*  
Maharjan, S., Tsai, A. P., Lin, P. B., Ingraham, C., Jewett, M. R., Landreth, G. E., Oblak, A. L., Wang, N.  
2022; 16: 964654
- **Plcg2M28L Interacts With High Fat/High Sugar Diet to Accelerate Alzheimer's Disease-Relevant Phenotypes in Mice.** *Frontiers in aging neuroscience*  
Oblak, A. L., Kotredes, K. P., Pandey, R. S., Reagan, A. M., Ingraham, C., Perkins, B., Lloyd, C., Baker, D., Lin, P. B., Soni, D. M., Tsai, A. P., Persohn, S. A., Bedwell, et al  
2022; 14: 886575

- **The niacin receptor HCAR2 modulates microglial response and limits disease progression in a mouse model of Alzheimer's disease.** *Science translational medicine*  
Moutinho, M., Puntambekar, S. S., Tsai, A. P., Coronel, I., Lin, P. B., Casali, B. T., Martinez, P., Oblak, A. L., Lasagna-Reeves, C. A., Lamb, B. T., Landreth, G. E.  
2022; 14 (637): eabl7634
- **PLCG2 is associated with the inflammatory response and is induced by amyloid plaques in Alzheimer's disease.** *Genome medicine*  
Tsai, A. P., Dong, C., Lin, P. B., Messenger, E. J., Casali, B. T., Moutinho, M., Liu, Y., Oblak, A. L., Lamb, B. T., Landreth, G. E., Bissel, S. J., Nho, K.  
2022; 14 (1): 17
- **Moderate Ethanol Pre-treatment Mitigates ICH-Induced Injury via ER Stress Modulation in Rats.** *Frontiers in molecular neuroscience*  
Lin, P. B., Wang, P. K., Pang, C. Y., Hu, W. F., Tsai, A. P., Oblak, A. L., Liew, H. K.  
2021; 14: 682775
- **Rare CASP6N73T variant associated with hippocampal volume exhibits decreased proteolytic activity, synaptic transmission defect, and neurodegeneration.** *Scientific reports*  
Zhou, L., Nho, K., Haddad, M. G., Cherepacha, N., Tubeleviciute-Aydin, A., Tsai, A. P., Saykin, A. J., Jesper Sjöström, P., LeBlanc, A. C.  
2021; 11 (1): 12695
- **INPP5D expression is associated with risk for Alzheimer's disease and induced by plaque-associated microglia.** *Neurobiology of disease*  
Tsai, A. P., Lin, P. B., Dong, C., Moutinho, M., Casali, B. T., Liu, Y., Lamb, B. T., Landreth, G. E., Oblak, A. L., Nho, K.  
2021; 153: 105303
- **Metabolic Defects Caused by High-Fat Diet Modify Disease Risk through Inflammatory and Amyloidogenic Pathways in a Mouse Model of Alzheimer's Disease.** *Nutrients*  
Reilly, A. M., Tsai, A. P., Lin, P. B., Ericsson, A. C., Oblak, A. L., Ren, H.  
2020; 12 (10)
- **The Role of Urocortins in Intracerebral Hemorrhage.** *Biomolecules*  
Choy, K. W., Tsai, A. P., Lin, P. B., Wu, M. Y., Lee, C., Alias, A., Pang, C. Y., Liew, H. K.  
2020; 10 (1)
- **Over-Activated Proteasome Mediates Neuroinflammation on Acute Intracerebral Hemorrhage in Rats.** *Cells*  
Liew, H. K., Hu, W. F., Lin, P. B., Wang, P. K., Tsai, A. P., Pang, C. Y., Chen, T. Y.  
2019; 8 (11)
- **Contrast Media Induced Kounis Syndrome: A Case Report.** *Diagnostics (Basel, Switzerland)*  
Chien, D. S., Tsai, A. P., Lin, P. C., Yang, G. T., Wu, M. Y.  
2019; 9 (4)
- **Severe Type of Minocycline-Induced Hyperpigmentation Mimicking Peripheral Arterial Occlusive Disease in a Bullous Pemphigoid Patient.** *Antibiotics (Basel, Switzerland)*  
Wu, M. Y., Hou, Y. T., Yang, G. T., Tsai, A. P., Lin, C. H.  
2019; 8 (3)
- **Advanced Evolution of Pathogenesis Concepts in Cardiomyopathies.** *Journal of clinical medicine*  
Li, C. J., Chen, C. S., Yang, G. T., Tsai, A. P., Liao, W. T., Wu, M. Y.  
2019; 8 (4)
- **Epithelial to Mesenchymal Transition and Cell Biology of Molecular Regulation in Endometrial Carcinogenesis.** *Journal of clinical medicine*  
Chiu, H. C., Li, C. J., Yang, G. T., Tsai, A. P., Wu, M. Y.  
2019; 8 (4)
- **An engineered arginine-rich  $\alpha$ -helical antimicrobial peptide exhibits broad-spectrum bactericidal activity against pathogenic bacteria and reduces bacterial infections in mice.** *Scientific reports*  
Yang, C. H., Chen, Y. C., Peng, S. Y., Tsai, A. P., Lee, T. J., Yen, J. H., Liou, J. W.  
2018; 8 (1): 14602
- **Current Mechanistic Concepts in Ischemia and Reperfusion Injury.** *Cellular physiology and biochemistry : international journal of experimental cellular physiology, biochemistry, and pharmacology*  
Wu, M. Y., Yang, G. T., Liao, W. T., Tsai, A. P., Cheng, Y. L., Cheng, P. W., Li, C. Y., Li, C. J.

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2018; 46 (4): 1650-1667

- **Molecular Regulation of Bone Metastasis Pathogenesis.** *Cellular physiology and biochemistry : international journal of experimental cellular physiology, biochemistry, and pharmacology*

Wu, M. Y., Li, C. J., Yiang, G. T., Cheng, Y. L., Tsai, A. P., Hou, Y. T., Ho, Y. C., Hou, M. F., Chu, P. Y.

2018; 46 (4): 1423-1438

- **Energy Homeostasis and Abnormal RNA Metabolism in Amyotrophic Lateral Sclerosis.** *Frontiers in cellular neuroscience*

Liu, Y. J., Tsai, P. Y., Chern, Y.

2017; 11: 126

- **Therapeutic effects of human urocortin-1, -2 and -3 in intracerebral hemorrhage of rats.** *Neuropeptides*

Liew, H. K., Huang, L. C., Yang, H. I., Peng, H. F., Li, K. W., Tsai, A. P., Chen, S. Y., Kuo, J. S., Pang, C. Y.

2015; 52: 89-96

- **L-type calcium channels in sympathetic  $\alpha 3\beta 2$ -nAChR-mediated cerebral nitregeric neurogenic vasodilation.** *Acta physiologica (Oxford, England)*

Wu, C. Y., Lee, R. H., Chen, P. Y., Tsai, A. P., Chen, M. F., Kuo, J. S., Lee, T. J.

2014; 211 (4): 544-58

- **STAT1 mediates oroxylin a inhibition of iNOS and pro-inflammatory cytokines expression in microglial BV-2 cells.** *PloS one*

Liu, P. W., Chen, M. F., Tsai, A. P., Lee, T. J.

2012; 7 (12): e50363