Stanford



Alexandra Nicole Trelle

Sr Res Scientist-Basic Life, Adult Neurology

Bio

BIO

I completed my undergraduate degree at the University of Toronto, and my PhD at the University of Cambridge. My work explores the neural mechanisms supporting episodic memory, and how these are affected by aging and Alzheimer's disease. I am currently leading the Stanford Aging and Memory Study, a large-scale longitudinal project examining individual differences in episodic memory in older adults. My research combines structural and functional MRI, PET imaging, and analysis of molecular and genetic risk factors for Alzheimer's disease.

ACADEMIC APPOINTMENTS

- Sr Res Scientist-Basic Life, Adult Neurology

Publications

PUBLICATIONS

- **Effects of α-synuclein pathology on synaptic dysfunction and clinical outcomes in normal aging.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*

  Winer, J. R., Plastini, M. J., Romero, A., Vossler, H., Sai, I., Channappa, D., Abdelnour, C., Shahid-Besanti, M., Wilson, E. N., Oh, H. S., Young, C. B., Trelle, A., Yutsis, et al

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- **Plasma proteomic signatures of preclinical Alzheimer's disease in clinically unimpaired older adults.** *Molecular neurodegeneration*

  Trelle, A. N., Cody, K. A., Nguyen, T. T., Winer, J. R., Weiss, S., Sai, I., Ward, T., Cheng, G., Channappa, D., Mendiola, J., Al-Rajhi, A., Raghuraman, K., Sha, et al

  2026

- **Top-down attention and Alzheimer's pathology affect cortical selectivity during learning, influencing episodic memory in older adults.** *Science advances*

  Sheng, J., Trelle, A. N., Romero, A., Park, J., Tran, T. T., Sha, S. J., Andreasson, K. I., Wilson, E. N., Mormino, E. C., Wagner, A. D.

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- **A cerebrospinal fluid synaptic protein biomarker for prediction of cognitive resilience versus decline in Alzheimer's disease.** *Nature medicine*

  Oh, H. S., Urey, D. Y., Karlsson, L., Zhu, Z., Shen, Y., Farinas, A., Timsina, J., Duggan, M. R., Chen, J., Guldner, I. H., Morshed, N., Yang, C., Western, et al

  2025

- **Plasma Aβ42/Aβ40 is sensitive to early cerebral amyloid accumulation and predicts risk of cognitive decline across the Alzheimer's disease spectrum.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*

  Trelle, A. N., Young, C. B., Vossler, H., Ramos Benitez, J., Cody, K. A., Mendiola, J. H., Swarovski, M. S., Guen, Y. L., Feinstein, I., Butler, R. R., Channappa, D., Romero, A., Park, et al

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- **Top-down attention and Alzheimer's pathology impact cortical selectivity during learning, influencing episodic memory in older adults.** *bioRxiv : the preprint server for biology*
  Sheng, J., Trelle, A. N., Romero, A., Park, J., Tran, T. T., Sha, S. J., Andreasson, K. I., Wilson, E. N., Mormino, E. C., Wagner, A. D.
  2024

- **Clinical Manifestations.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
  Taghavi, H. M., Karimpoor, M., van Staalduinen, E., Leventis, S., Young, C. B., Carlson, M. L., Davidzon, G. A., Romero, A., Trelle, A. N., Zaharchuk, G., Vossler, H., Rosenberg, J., Poston, et al
  2024; 20 Suppl 3: e092936

- **Developing Topics.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
  Winer, J. R., Plastini, M. J., Romero, A., Wilson, E. N., Young, C. B., Trelle, A. N., Henderson, V. W., Wagner, A. D., Poston, K. L., Mormino, E.
  2024; 20 Suppl 8: e095792

- **Public Health.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
  Lu, O., Mormino, E., He, Z., Carr, V. A., Trelle, A. N., Young, C. B., Romero, A., Vossler, H., Park, J., Skylar-Scott, I. A.
  2024; 20 Suppl 7: e084160

- **Elevated tau in the piriform cortex in Alzheimer's but not Parkinson's disease using PET-MR.** *Alzheimer's & dementia (Amsterdam, Netherlands)*
  Moein Taghavi, H., Karimpoor, M., van Staalduinen, E. K., Young, C. B., Georgiadis, M., Leventis, S., Carlson, M., Romero, A., Trelle, A., Vossler, H., Yutsis, M., Rosenberg, J., Davidzon, et al
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- **[18F]PI-2620 Tau PET signal across the aging and Alzheimer's disease clinical spectrum.** *Imaging neuroscience (Cambridge, Mass.)*
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- **Comprehensive proteomics of CSF, plasma, and urine identify DDC and other biomarkers of early Parkinson's disease.** *Acta neuropathologica*
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- **Post-translational modifications linked to preclinical Alzheimer's disease-related pathological and cognitive changes.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
  Abiose, O., Rutledge, J., Moran-Losada, P., Belloy, M. E., Wilson, E. N., He, Z., Trelle, A. N., Channappa, D., Romero, A., Park, J., Yutsis, M. V., Sha, S. J., Andreasson, et al
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- **Performance of a fully-automated Lumipulse plasma phospho-tau181 assay for Alzheimer's disease.** *Alzheimer's research & therapy*
  Wilson, E. N., Young, C. B., Ramos Benitez, J., Swarovski, M. S., Feinstein, I., Vandijck, M., Le Guen, Y., Kasireddy, N. M., Shahid, M., Corso, N. K., Wang, Q., Kennedy, G., Trelle, et al
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- **Medial temporal lobe structure, mnemonic and perceptual discrimination in healthy older adults and those at risk for mild cognitive impairment.** *Neurobiology of aging*
  Gellersen, H. M., Trelle, A. N., Farrar, B. G., Coughlan, G., Korkki, S. M., Henson, R. N., Simons, J. S.
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- **Thalamic nuclei atrophy at high and heterogenous rates during cognitively unimpaired human aging.** *NeuroImage*
  Choi, E. Y., Tian, L., Su, J. H., Radovan, M. T., Tourdias, T., Tran, T. T., Trelle, A. N., Mormino, E., Wagner, A. D., Rutt, B. K.
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- **Executive function and high ambiguity perceptual discrimination contribute to individual differences in mnemonic discrimination in older adults.** *Cognition*
  Gellersen, H. M., Trelle, A. N., Henson, R. N., Simons, J. S.
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- **Association of CSF Biomarkers with Hippocampal-dependent Memory in Preclinical Alzheimer Disease.** *Neurology*
  Trelle, A. N., Carr, V. A., Wilson, E. N., Swarovski, M. S., Hunt, M. P., Toueg, T. N., Tran, T. T., Channappa, D. n., Corso, N. K., Thieu, M. K., Jayakumar, M. n., Nadiadwala, A. n., Guo, et al
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