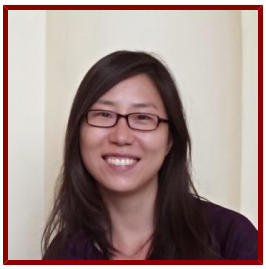
Stanford



Eun Young Choi, PhD

Instructor, Neurosurgery

Bio

ACADEMIC APPOINTMENTS

- Instructor, Neurosurgery
- Member, Wu Tsai Human Performance Alliance
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- PRARP Convergence Science Research Award, Department of Defense (2021-2025)
- Graduate Research Fellowship Program, National Science Foundation (2008-2011)

PROFESSIONAL EDUCATION

- PhD, Harvard University , Neuroscience (2013)
- BA, Columbia University , Biochemistry (2005)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Choi is broadly interested in mapping the brain's connectivity and characterizing its functional dynamics using advanced neuroimaging and clinical neurophysiological methods, as well as translating this information to identify individual-specific neurosurgical targets and treatment strategies using neuromodulation (e.g., deep brain stimulation). Her prior work has mapped the functional and connectional organization of the cortex, striatum, and thalamus using neuroimaging and NHP neuroanatomical tract-tracing. She is currently focused on the use of thalamic deep brain stimulation to improve memory and attention in traumatic brain injury and Alzheimer's disease, and the development of precise, individual-specific adult and pediatric brain atlases and network maps.

CLINICAL TRIALS

- Deep Brain Stimulation for the Treatment of Traumatic Brain Injury, Not Recruiting

Publications

PUBLICATIONS

- **Conserved brain-wide emergence of emotional response from sensory experience in humans and mice.** *Science (New York, N.Y.)*
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- **Cross-species striatal hubs: linking anatomy to resting-state connectivity.** *NeuroImage*
  Peng, X., Trambaiolli, L. R., Choi, E. Y., Lehman, J. F., Linn, G., Russ, B. E., Schroeder, C. E., Haber, S. N., Liu, H.
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- **A mosaic of whole-body representations in human motor cortex.** *bioRxiv : the preprint server for biology*
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- **An Accurate and Rapidly Calibrating Speech Neuroprosthesis.** *The New England journal of medicine*
  Card, N. S., Wairagkar, M., Iacobacci, C., Hou, X., Singer-Clark, T., Willett, F. R., Kunz, E. M., Fan, C., Vahdati Nia, M., Deo, D. R., Srinivasan, A., Choi, E. Y., Glasser, et al
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- **Thalamic deep brain stimulation in traumatic brain injury: a phase 1, randomized feasibility study.** *Nature medicine*
  Schiff, N. D., Giacino, J. T., Butson, C. R., Choi, E. Y., Baker, J. L., O'Sullivan, K. P., Janson, A. P., Bergin, M., Bronte-Stewart, H. M., Chua, J., DeGeorge, L., Dikmen, S., Fogarty, et al
  2023

- **A high-performance speech neuroprosthesis.** *Nature*
  Willett, F. R., Kunz, E. M., Fan, C., Avansino, D. T., Wilson, G. H., Choi, E. Y., Kamdar, F., Glasser, M. F., Hochberg, L. R., Druckmann, S., Shenoy, K. V., Henderson, J. M.
  2023

- **Human habit neural circuitry may be perturbed in eating disorders.** *Science translational medicine*
  Wang, A. R., Kuijper, F. M., Barbosa, D. A., Hagan, K. E., Lee, E., Tong, E., Choi, E. Y., McNab, J. A., Bohon, C., Halpern, C. H.
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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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- **Nonhuman primate meso-circuitry data: a translational tool to understand brain networks across species** *Brain Structure & Function*
  Tang, W., Choi, E., Heilbronner, S. R., Haber, S. N.
  2021; 226 (1): 1-11

- **Corticostriatal Projections of Macaque Area 44** *Cerebral Cortex Communications*
  Korponay, C., Choi, E. Y., Haber, S. N.
  2020; 1 (1): 1-11

- **Improved Vim targeting for focused ultrasound ablation treatment of essential tremor: A probabilistic and patient#specific approach** *Human Brain Mapping*
  Su*, J. H., Choi*, E. Y., Tourdias, T., Saranathan, M., Halpern, C. H., Henderson, J. M., Pauly, K. B., Ghanouni, P., Rutt, B. K.
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- **Fast, fully automated segmentation of thalamic nuclei from structural MRI.** *NeuroImage*
  Su, J. H., Thomas, F. T., Kasoff, W. S., Tourdias, T., Choi, E. Y., Rutt, B. K., Saranathan, M.
  2019

- **Circuits, Networks, and Neuropsychiatric Disease: Transitioning From Anatomy to Imaging.** *Biological psychiatry*
  Haber, S. N., Tang, W. n., Choi, E. Y., Yendiki, A. n., Liu, H. n., Jbabdi, S. n., Versace, A. n., Phillips, M. n.
  2019

- **Automated integrated system for stained neuron detection: An end-to-end framework with a high negative predictive rate.** *Computer methods and programs in biomedicine*
  Yoon, J. S., Choi, E. Y., Saad, M. n., Choi, T. S.
  2019; 180: 105028

- **How do cortico-striatal projections impact on downstream pallidal circuitry?** *Brain structure & function*
  Heilbronner, S. R., Meyer, M. A., Choi, E. Y., Haber, S. N.

2018

- **Evidence for a Functional Hierarchy of Association Networks.** *Journal of cognitive neuroscience*
  Choi, E. Y., Drayna, G. K., Badre, D. n.
  2018: 1–17

- **Gene expression links functional networks across cortex and striatum.** *Nature communications*
  Anderson, K. M., Krienen, F. M., Choi, E. Y., Reinen, J. M., Yeo, B. T., Holmes, A. J.
  2018; 9 (1): 1428

- **Imaging the striatum in autism spectrum disorder.** *Autism Imaging and Devices.*
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- **Combinatorial Inputs to the Ventral Striatum from the Temporal Cortex, Frontal Cortex, and Amygdala: Implications for Segmenting the Striatum.** *eNeuro*
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- **Convergence of prefrontal and parietal anatomical projections in a connectional hub in the striatum.** *NeuroImage*
  Choi, E. Y., Tanimura, Y., Vage, P. R., Yates, E. H., Haber, S. N.
  2016

- **The Human Ortholog of Acid-Sensing Ion Channel Gene ASIC1a Is Associated With Panic Disorder and Amygdala Structure and Function** *BIOLOGICAL PSYCHIATRY*
  Smoller, J. W., Gallagher, P. J., Duncan, L. E., McGrath, L. M., Haddad, S. A., Holmes, A. J., Wolf, A. B., Hilker, S., Block, S. R., Weill, S., Young, S., Choi, E. Y., Rosenbaum, et al
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