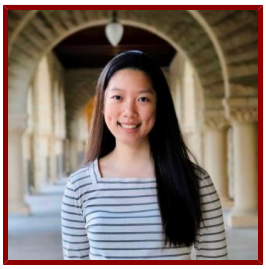
Stanford



Renesmee Kuo

Ph.D. Student in Electrical Engineering, admitted Autumn 2022

Bio

BIO

Renesmee Kuo is an Electrical Engineering PhD candidate at Stanford University supported by NSF GRFP and Stanford Lieberman fellowship. Her research interests lie at the intersection of engineering and medicine. She focuses on validation of preclinical PET imaging tracers and their translation into the clinic for applications in neuroinflammatory diseases (e.g., MS, AD) and cancer (e.g., brain metastasis) in Prof. Michelle James' lab. She graduated from UC Berkeley with a BS in Bioengineering. At Berkeley, she worked in Prof. Steve Conolly's lab on Magnetic Particle Imaging (MPI), focusing on tracking CAR-T cells in immunotherapy using high-resolution MPI tracers. She also explored commercially-available high-resolution MPI tracers for early diagnosis of pulmonary embolisms and cardiovascular disease in preclinical settings.

HONORS AND AWARDS

- Gerald J. Lieberman Fellowship, Stanford University (2025)
- 1st place Young Investigator Award (Brain Imaging Council), Society of Nuclear Medicine and Molecular Imaging (SNMMI) (2025)
- 1st place Young Investigator Award, American Association of Physicists in Medicine (2025)
- 1st place Young Investigator Award, World Molecular Imaging Congress (2024)
- Graduate Research Fellowship, National Science Foundation (2022)
- Electrical Engineering Department Fellowship, Stanford University (2022)
- Jacobs Institute Innovation Catalysts Ignite Grant, University of California, Berkeley (2021)

EDUCATION AND CERTIFICATIONS

- MS, Stanford University , Electrical Engineering (2024)
- BS, University of California, Berkeley , Bioengineering (2022)

LINKS

- LinkedIn: https://www.linkedin.com/in/renesmeekuo/
- Google Scholar: https://scholar.google.com/citations?user=2d4IVysAAAAJ&hl=en
- James Lab: https://med.stanford.edu/jameslab.html

Publications

PUBLICATIONS

- **Illuminating proinflammatory myeloid cells with PET tracers targeting GPR84.** *Proceedings of the National Academy of Sciences of the United States of America*

Kalita, M., Kuo, R. C., Straniero, V., Reyes, S. T., Pandrala, M., Lanzini, A., Marsango, S., D'Moore, D., Mahn, P., Setiadi, A., Sundar, M., Mak, S., Nagy, et al

2026; 123 (21): e2536372123

- **TREM1-PET imaging maps whole-body innate immune responses in a mouse model of metastatic melanoma.** *Scientific reports*

  Falk, I. N., Chaney, A. M., Verma, R., Kuo, R. C., Reyes, S., Carlson, M., Kalita, M., Azevedo, C., Jackson, I. M., Green, J., Alam, I. S., Tran, A., Pant, et al

  2026

- **A radiolabeled dendrimer non-invasively identifies and tracks innate immune cell activation in a mouse model of experimental autoimmune encephalomyelitis.** *Nature communications*

  Kuo, R. C., Carlson, M. L., Reyes, S. T., Nagy, S. C., Kalita, M., Alam, I. S., Malik, N., Jackson, I. M., Acosta, C. J., Falk, I. N., Azevedo, E. C., Zhang, Y., Nichols, et al

  2026

- **¹⁸F-MGX-110S detects proinflammatory innate immune responses in human cells and Alzheimer's disease mice with high sensitivity**

  Kalita, M., Kuo, R., Reyes, S., Straniero, V., Nagy, S., D'Moore, D., Sundar, M., Setiadi, A., Mak, S., Tuffley, G., Pandrala, M., Marsango, S., Alam, et al

  ELSEVIER SCIENCE INC.2025

- **Advancing In Vivo Detection of T-Cell Function: Development and Preclinical Evaluation of 89Zr-Ivuxolimab, a Human OX40 PET Tracer.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*

  Kalita, M., Kuo, R. C., Reyes, S. T., Colburg, D. R., Falk, I. N., Anders, D., Vermesh, O., Hayee, S., Azevedo, E. C., Nagy, S. C., Deal, E. M., Chen, A. A., Kong, et al

  2025

- **Revealing the suppressors: A new PET imaging approach for detecting MDSCs before and after immunotherapy in a model of brain metastases**

  Kuo, R., Verma, R., Reyes, S., Nagy, S., Kalita, M., D'moore, D., Ehsani, A., Pisani, L., Alam, I., Milligan, G., Lim, M., James, M.

  SOC NUCLEAR MEDICINE INC.2025

- **Early detection and tracking of activated macrophages and microglia in a mouse model of multiple sclerosis using [18F]OP-801 PET imaging before and after a novel immunomodulatory drug**

  Kuo, R., Carlson, M., Malik, N., Reyes, S., Nagy, S., Kalita, M., Alam, I., Jackson, I., Beinat, C., Acosta, C., Falk, I., Azevedo, C., Avci, et al

  SOC NUCLEAR MEDICINE INC.2024

- **Illuminating pro-inflammatory myeloid cells in a murine model of multiple sclerosis using a new 18F-labeled GPR84-targeted radiotracer**

  Reyes, S., Kalita, M., Kuo, R., Straniero, V., Marsango, S., Pandrala, M., Malik, N., Jain, P., Suigo, L., Nagy, S., Wu, T., Valoti, E., Milligan, et al

  SOC NUCLEAR MEDICINE INC.2024

- **Development and comparison of two novel PET tracers for imaging proinflammatory receptor GPR84 in human cells and tissues**

  Nagy, S., Kalita, M., Jackson, I., Reyes, S., Kuo, R., Malik, N., Pandrala, M., Zhang, B., Marsango, S., Straniero, V., Suigo, L., Valoti, E., Alam, et al

  SOC NUCLEAR MEDICINE INC.2024

- **PET Imaging of Innate Immune Activation Using 11C Radiotracers Targeting GPR84.** *JACS Au*

  Kalita, M., Park, J. H., Kuo, R. C., Hayee, S., Marsango, S., Straniero, V., Alam, I. S., Rivera-Rodriguez, A., Pandrala, M., Carlson, M. L., Reyes, S. T., Jackson, I. M., Suigo, et al

  2023; 3 (12): 3297-3310

- **Application of Machine Learning Driven Computational Approaches for Novel CNS PET Tracer Development**

  Jackson, I., Luo, A., Webb, E., Zhang, B., Guo, A., Nagy, S., Shao, X., Kuo, R., Carlson, M., Alam, I., Rodriguez, A., Winton, W., Stauff, et al

  ELSEVIER SCIENCE INC.2023: S40-S41

- **Magnetic Particle Imaging in Vascular Imaging, Immunotherapy, Cell Tracking, and Noninvasive Diagnosis** *MOLECULAR IMAGING*

  Chandrasekharan, P., Kuo, R., Fung, K., Saayujya, C., Bryan, J., Yousuf, M., Fellows, B., Colson, C., Huynh, Q., Doyle, O., Hartley, A., Yousuf, K., Goodwill, et al

  2023; 2023