

# Stanford

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## Mackenzie Leigh Carlson

Postdoctoral Scholar, Neurology and Neurological Sciences

### Bio

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#### HONORS AND AWARDS

- F31 Predoctoral Fellowship, NIH
- Graduate Research Fellowship Program, National Science Foundation
- TBI2 Fellow, Radiological Sciences Laboratory

#### PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stanford University , BIOE-PHD (2023)
- Master of Science, Stanford University , BIOE-MS (2020)
- Bachelor of Arts and Sciences, Dartmouth College , Engineering Sciences

### Research & Scholarship

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#### LAB AFFILIATIONS

- Michelle James, James Lab (8/1/2019)
- Michael Zeineh, Zeineh Lab (1/1/2019)

### Publications

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#### PUBLICATIONS

- **PET Imaging of Innate Immune Activation Using  $^{11}\text{C}$  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
- **Temporal tau asymmetry spectrum influences divergent behavior and language patterns in Alzheimer's disease.** *medRxiv : the preprint server for health sciences*  
Younes, K., Smith, V., Johns, E., Carlson, M. L., Winer, J., He, Z., Henderson, V. W., Greicius, M. D., Young, C. B., Mormino, E. C.  
2023
- **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
- **Development and Initial Assessment of  $[^{18}\text{F}]OP-801$ : a Novel Hydroxyl Dendrimer PET Tracer for Preclinical Imaging of Innate Immune Activation in the Whole Body and Brain.** *Molecular imaging and biology*  
Carlson, M. L., Jackson, I. M., Azevedo, E. C., Reyes, S. T., Alam, I. S., Kellow, R., Castillo, J. B., Nagy, S. C., Sharma, R., Brewer, M., Cleland, J., Shen, B., James, et al

2023

- **Erratum: "Optimizing the frame duration for data-driven rigid motion estimation in brain PET imaging".** *Medical physics*

Spangler-Bickella, M. G., Hurley, S. A., Deller, T. W., Jansen, F., Bettinardi, V., Carlson, M., Zeineh, M., Zaharchuk, G., McMillan, A. B.  
2023; 50 (8): 5295

- **Clinical Radiosynthesis and Translation of [18F]OP-801: A Novel Radiotracer for Imaging Reactive Microglia and Macrophages.** *ACS chemical neuroscience*

Jackson, I. M., Carlson, M. L., Beinat, C., Malik, N., Kalita, M., Reyes, S., Azevedo, E. C., Nagy, S. C., Alam, I. S., Sharma, R., La Rosa, S. A., Moradi, F., Cleland, et al  
2023

- **Development and initial evaluation of a novel 11C-labeled PET tracer to image GPR84 expressing-myeloid cells during neuroinflammation**

Kalita, M., Park, J., Hayee, S., Marsango, S., Carlson, M., Reyes, S., Nagy, S., Straniero, V., Pandrala, M., Jackson, I., Alam, I., Valoti, E., Milligan, et al  
SOC NUCLEAR MEDICINE INC.2023

- **High-resolution hippocampal diffusion tensor imaging of mesial temporal sclerosis in refractory epilepsy.** *Epilepsia*

Chau Loo Kung, G., Chiu, A., Davey, Z., Mouchawar, N., Carlson, M., Moein Taghavi, H., Martin, D., Gruber, K., Razavi, B., McNab, J., Zeineh, M.  
2022

- **Radiosynthesis and initial preclinical evaluation of [11C]AZD1283 as a potential P2Y12R PET radiotracer.** *Nuclear medicine and biology*

Jackson, I. M., Buccino, P. J., Azevedo, E. C., Carlson, M. L., Luo, A. S., Deal, E. M., Kalita, M., Reyes, S. T., Shao, X., Beinat, C., Nagy, S. C., Chaney, A. M., Anders, et al  
2022

- **TRACKING INNATE IMMUNE ACTIVATION IN A MOUSE MODEL OF PARKINSON'S DISEASE USING TREM1 AND TSPO PET TRACERS.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*

Lucot, K. L., Stevens, M. Y., Bonham, T. A., Azevedo, E. C., Chaney, A. M., Webber, E. D., Jain, P., Klockow, J. L., Jackson, I. M., Carlson, M. L., Graves, E. E., Montine, T. J., James, et al  
2022

- **Optimizing the Frame Duration for Data-Driven Rigid Motion Estimation in Brain PET Imaging.** *Medical physics*

Spangler-Bickell, M. G., Hurley, S. A., Deller, T. W., Jansen, F. n., Bettinardi, V. n., Carlson, M. n., Zeineh, M. n., Zaharchuk, G. n., McMillan, A. B.  
2021

- **Hippocampal subfield imaging and fractional anisotropy show parallel changes in Alzheimer's disease tau progression using simultaneous tau-PET/MRI at 3T.** *Alzheimer's & dementia (Amsterdam, Netherlands)*

Carlson, M. L., Toueg, T. N., Khalighi, M. M., Castillo, J., Shen, B., Azevedo, E. C., DiGiacomo, P., Mouchawar, N., Chau, G., Zaharchuk, G., James, M. L., Mormino, E. C., Zeineh, et al  
2021; 13 (1): e12218

- **Simultaneous FDG-PET/MRI detects hippocampal subfield metabolic differences in AD/MCI.** *Scientific reports*

Carlson, M. L., DiGiacomo, P. S., Fan, A. P., Goubran, M., Khalighi, M. M., Chao, S. Z., Vasanawala, M., Wintermark, M., Mormino, E., Zaharchuk, G., James, M. L., Zeineh, M. M.  
2020; 10 (1): 12064

- **Neuroinflammation PET imaging: Current opinion and future directions.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*

Jain, P., Chaney, A., Carlson, M. L., Jackson, I. M., Rao, A., James, M. L.  
2020

- **A within-coil optical prospective motion-correction system for brain imaging at 7T.** *Magnetic resonance in medicine*

DiGiacomo, P. n., Maclarens, J. n., Aksoy, M. n., Tong, E. n., Carlson, M. n., Lanzman, B. n., Hashmi, S. n., Watkins, R. n., Rosenberg, J. n., Burns, B. n., Skloss, T. W., Rettmann, D. n., Rutt, et al  
2020