Stanford

Jason Thanh Lee

Deputy Director, Molecular Imaging Program, Rad/Molecular Imaging Program at Stanford

Bio

BIO

Biomedical imaging scientist in preclinical molecular and nuclear imaging, particularly employing PET, CT and optical techniques. Applications include therapeutic development, oncology, immunotherapy, neuroscience, and molecular biology. Active in translational diagnostics research and development. Broad foundation in molecular biology assays and in vivo disease models.

HONORS AND AWARDS

- Molecular Imaging: Training in Oncology (R25T) Postdoctoral Fellowship, Memorial Sloan Kettering Cancer Center (2012-2014)
- Dissertation Year Fellowship, David Geffen School of Medicine, UCLA (2011-2012)
- 2nd place, Center for Molecular Imaging Innovation and Translation (CMIIT) Young Investigator Award, Society of Nuclear Medicine (2011)
- 3rd place, SNM Young Professionals Committee, Clinical Research abstract, Society of Nuclear Medicine (2011)
- Institute for Molecular Imaging (AMI) – WMIC Travel Award, World Molecular Imaging Society (2011)
- In Vivo Cellular and Molecular Imaging Center (ICMIC) Career Development Grant, David Geffen School of Medicine, UCLA (2009-2010)
- Institute for Molecular Imaging (AMI) – WMIC Travel Award, World Molecular Imaging Society (2009)
- UCLA Molecular and Medical Pharmacology Graduate Travel Award, Dept of Molecular and Medical Pharmacology, UCLA (2008)

EDUCATION AND CERTIFICATIONS

- R25T postdoctoral fellow, Memorial Sloan Kettering Cancer Center , Molecular Imaging (2014)
- PhD, David Geffen School of Medicine at UCLA , Molecular and Medical Pharmacology (2012)
- B.S., University of California, Los Angeles , Electrical Engineering, Biomedical Engineering emphasis (2006)

LINKS

- Molecular Imaging Program at Stanford (MIPS): https://mips.stanford.edu/

Professional

PROFESSIONAL INTERESTS

molecular diagnostics, translational imaging, nuclear medicine, theranostics, cancer biology, immunotherapy

WORK EXPERIENCE

- Director, Stanford Center for Innovation in In vivo Imaging (SCi3) - Stanford University School of Medicine (9/30/2019 - 5/31/2021)
- Assistant Professor, Dept Molecular and Medical Pharmacology, School of Medicine at UCLA - David Geffen School of Medicine, UCLA (2014 - 2020)

- Director, Preclinical Imaging Technology Center, Crump Institute for Molecular Imaging - Crump Institute for Molecular Imaging, David Geffen School of Medicine at UCLA (2014 - 2019)
- Co-Director, Small Animal Imaging Shared Resource, Jonsson Comprehensive Cancer Center, UCLA - Jonsson Comprehensive Cancer Center, David Geffen School of Medicine, UCLA (2014 - 2019)

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Chair, Education Subcommittee “Global access to molecular imaging & theranostics", WMIS (2024 - present)
- Member, Education Committee, World Molecular Imaging Society (2023 - present)
- Member, Pride in Molecular Imaging LGBTQ+ Sub-committee, World Molecular Imaging Society (2023 - present)
- External Advisory Board, Shared Resources, Simmons Comprehensive Cancer Center, UTSW Medical Center (2019 - 2020)
- Core Advisory Committee, Norris Comprehensive Cancer Center, University of Southern California (2019 - 2019)
- Reviewer, Journals: J of Nuclear Medicine, Clinical Cancer Research, Theranostics, Oncotarget, BioMed Res Int (2015 - present)
- Member, Shared Resources Committee, Jonsson Comprehensive Cancer Center, UCLA (2014 - 2019)
- Member, Society of Radiopharmaceutical Sciences (2024 - present)
- Member, American Association for Cancer Research (AACR) (2023 - present)
- Member, Society of Nuclear Medicine and Molecular Imaging (2014 - present)
- Member, World Molecular Imaging Society (2014 - present)

Publications

PUBLICATIONS

- **Today's Research, Tomorrow's Practice - White Paper from the Translation of New Therapy (TNT) Radiotheranostics Kick-off Pre-meeting of the Annual World Molecular Imaging Conference 2024.** *Molecular imaging and biology*
  Krebs, S., Baird, L., Pirovano, G., Yamaguchi, A., Coll, R. P., Lee, J. T., Carroll, L. S., Pomper, M. G., Manning, H. C.
  2025
- **Spatial mapping of mitochondrial networks and bioenergetics in lung cancer.** *Nature*
  Han, M., Bushong, E. A., Segawa, M., Tiard, A., Wong, A., Brady, M. R., Momcilovic, M., Wolf, D. M., Zhang, R., Petcherski, A., Madany, M., Xu, S., Lee, et al
  2023
- **Multimodal imaging of capsid and cargo reveals differential brain targeting and liver detargeting of systemically-administered AAVs.** *Biomaterials*
  Seo, J. W., Ajenjo, J., Wu, B., Robinson, E., Raie, M. N., Wang, J., Tumbale, S. K., Buccino, P., Anders, D. A., Shen, B., Habte, F. G., Beinat, C., James, et al
  2022: 121701
- **Molecular Imaging of Chimeric Antigen Receptor T Cells by ICOS-ImmunoPET.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
  Simonetta, F., Alam, I. S., Lohmeyer, J. K., Sahaf, B., Good, Z., Chen, W., Xiao, Z., Hirai, T., Scheller, L., Engels, P., Vermesh, O., Robinson, E., Haywood, et al
  2020
- **Performance evaluation of HiPET, a high sensitivity and high resolution preclinical PET tomograph.** *Physics in medicine and biology*
  Gu, Z., Taschereau, R., Vu, N. T., Prout, D. L., Lee, J., Chatziioannou, A. F.
  2020
- **Performance Evaluation of G8, a High-Sensitivity Benchtop Preclinical PET/CT Tomograph** *JOURNAL OF NUCLEAR MEDICINE*
  Gu, Z., Taschereau, R., Vu, N. T., Prout, D. L., Silverman, R. W., Lee, J. T., Chatziioannou, A. F.
  2019; 60 (1): 142–49
- **In vivo imaging of mitochondrial membrane potential in non-small-cell lung cancer.** *Nature*
  Momcilovic, M. n., Jones, A. n., Bailey, S. T., Waldmann, C. M., Li, R. n., Lee, J. T., Abdelhady, G. n., Gomez, A. n., Holloway, T. n., Schmid, E. n., Stout, D. n., Fishbein, M. C., Stiles, et al

2019

- **Imaging T Cell Dynamics and Function Using PET and Human Nuclear Reporter Genes** *REPORTER GENE IMAGING: METHODS AND PROTOCOLS*
  Lee, J. T., Moroz, M. A., Ponomarev, V.
  edited by Dubey, P.
  2018; 1790: 165–80

- **Cytoplasmic p53 couples oncogene-driven glucose metabolism to apoptosis and is a therapeutic target in glioblastoma** *NATURE MEDICINE*
  Mai, W. X., Gosa, L., Daniels, V. W., Ta, L., Tsang, J. E., Higgins, B., Gilmore, W., Bayley, N. A., Harati, M., Lee, J. T., Yong, W. H., Kornblum, H. I., Bensinger, et al
  2017; 23 (11): 1342-+

- **Comparative Analysis of Human Nucleoside Kinase-Based Reporter Systems for PET Imaging** *MOLECULAR IMAGING AND BIOLOGY*
  Lee, J. T., Zhang, H., Moroz, M. A., Likar, Y., Shenker, L., Sumzin, N., Lobo, J., Zurita, J., Collins, J., van Dam, R., Ponomarev, V.
  2017; 19 (1): 100–108

- **Stratification of nucleoside analog chemotherapy using 1-(2'-deoxy-2'-18F-fluoro-β-D-arabinofuranosyl)cytosine and 1-(2'-deoxy-2'-18F-fluoro-β-L-arabinofuranosyl)-5-methylcytosine PET.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
  Lee, J. T., Campbell, D. O., Satyamurthy, N. n., Czernin, J. n., Radu, C. G.
  2012; 53 (2): 275–80

- **89Zr-ImmunoPET for the Specific Detection of EMP2-Positive Tumors.** *Molecular cancer therapeutics*
  Chan, A. M., Olafsen, T., Tsui, J., Salazar, F. B., Aguirre, B., Zettlitz, K. A., Condro, M., Wu, A. M., Braun, J., Gordon, L. K., Ashki, N., Whitelegge, J., Xu, et al
  2024

- **Heterogeneous cardiac sympathetic innervation gradients promote arrhythmogenesis in murine dilated cardiomyopathy.** *JCI insight*
  Dajani, A. J., Liu, M. B., Olaopa, M. A., Cao, L., Valenzuela Ripoll, C., Davis, T. J., Poston, M. D., Smith, E. H., Contreras, J., Pennino, M., Waldmann, C. M., Hoover, D. B., Lee, et al
  2023

- **Safety and Biodistribution Profile of Poly(styrenyl acetal trehalose) and Its Granulocyte Colony Stimulating Factor Conjugate** *BIOMACROMOLECULES*
  Ko, J., Forsythe, N. L., Gelb, M. B., Messina, K. M. M., Lau, U. Y., Bhattacharya, A., Olafsen, T., Lee, J. T., Kelly, K. A., Maynard, H. D.
  2022

- **Introducing a new reporter gene, membrane-anchored Cypridina luciferase, for multiplex bioluminescence imaging.** *Molecular therapy oncolytics*
  Moroz, M. A., Zurita, J., Moroz, A., Nikolov, E., Likar, Y., Dobrenkov, K., Lee, J., Shenker, L., Blasberg, R., Serganova, I., Ponomarev, V.
  2021; 21: 15-22

- **Identification of miRNA signatures associated with radiation-induced late lung injury in mice** *PLOS ONE*
  Rogers, C. J., Lukaszewicz, A. I., Yamada-Hanff, J., Micewicz, E. D., Ratikan, J. A., Starbird, M. A., Miller, T. A., Nguyen, C., Lee, J. T., Olafsen, T., Iwamoto, K. S., McBride, W. H., Schaue, et al
  2020; 15 (5): e0232411

- **Modeling Mixed Vascular and Alzheimer's Dementia Using Focal Subcortical Ischemic Stroke in Human ApoE4-TR:5XFAD Transgenic Mice.** *Translational stroke research*
  Hayden, E. Y., Huang, J. M., Charreton, M., Nunez, S. M., Putman, J. N., Teter, B., Lee, J. T., Welch, A., Frautschy, S., Cole, G., Teng, E., Hinman, J. D.
  2020

- **Publisher Correction: In vivo imaging of mitochondrial membrane potential in non-small-cell lung cancer.** *Nature*
  Momcilovic, M. n., Jones, A. n., Bailey, S. T., Waldmann, C. M., Li, R. n., Lee, J. T., Abdelhady, G. n., Gomez, A. n., Holloway, T. n., Schmid, E. n., Stout, D. n., Fishbein, M. C., Stiles, et al
  2020

- **Molecular Imaging of Chimeric Antigen Receptor T Cells by ICOS-ImmunoPET** *Clinical cancer research: an official journal of the American Association for Cancer Research*
  Alam*, I. S., Simonetta*, F.

2020: 1058–68

- **Estrogen receptor α controls metabolism in white and brown adipocytes by regulating Polg1 and mitochondrial remodeling.** *Science translational medicine*

  Zhou, Z. n., Moore, T. M., Drew, B. G., Ribas, V. n., Wanagat, J. n., Civelek, M. n., Segawa, M. n., Wolf, D. M., Norheim, F. n., Seldin, M. M., Strumwasser, A. R., Whitney, K. A., Lester, et al

  2020; 12 (555)

- **BIRC5 is a target for molecular imaging and detection of human pancreatic cancer.** *Cancer letters*

  Liu, S. H., Hong, Y., Markowiak, S., Sanchez, R., Creeden, J., Nemunaitis, J., Kalinoski, A., Willey, J., Erhardt, P., Lee, J., van Dam, M., Brunicardi, F. C.

  2019; 457: 10-19

- **Multimodal imaging guides surgical management in a preclinical spinal implant infection model** *JCI INSIGHT*

  Zoller, S. D., Park, H., Olafsen, T., Zamilpa, C., Burke, Z. D. C., Blumstein, G., Sheppard, W. L., Harnad, C. D., Hori, K. R., Tseng, J., Czupryna, J., McMannus, C., Lee, et al

  2019; 4 (3)

- **An HK2 Antisense Oligonucleotide Induces Synthetic Lethality in HK1-HK2+ Multiple Myeloma.** *Cancer research*

  Xu, S. n., Zhou, T. n., Doh, H. M., Trinh, K. R., Catapang, A. n., Lee, J. T., Braas, D. n., Bayley, N. A., Yamada, R. E., Vasuthasawat, A. n., Sasine, J. P., Timmerman, J. M., Larson, et al

  2019; 79 (10): 2748–60

- **In vivo characterization of [18F]AVT-011 as a radiotracer for PET imaging of multidrug resistance.** *European journal of nuclear medicine and molecular imaging*

  Kannan, P. n., Füredi, A. n., Dizdarevic, S. n., Wanek, T. n., Mairinger, S. n., Collins, J. n., Falls, T. n., van Dam, R. M., Maheshwari, D. n., Lee, J. T., Szakács, G. n., Langer, O. n.

  2019

- **Utilizing F-18-FDG PET/CT Imaging and Quantitative Histology to Measure Dynamic Changes in the Glucose Metabolism in Mouse Models of Lung Cancer** *JOVE-JOURNAL OF VISUALIZED EXPERIMENTS*

  Momcilovic, M., Bailey, S. T., Lee, J. T., Zamilpa, C., Jones, A., Abdelhady, G., Mansfield, J., Francis, K. P., Shackelford, D. B.

  2018

- **A precision therapeutic strategy for hexokinase 1-null, hexokinase 2-positive cancers** *CANCER & METABOLISM*

  Xu, S., Catapang, A., Braas, D., Stiles, L., Doh, H. M., Lee, J. T., Graeber, T. G., Damoiseaux, R., Shirihai, O., Herschman, H. R.

  2018; 6: 7

- **Effects of teriparatide on morphology of aortic calcification in aged hyperlipidemic mice** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*

  Hsu, J. J., Lu, J., Umar, S., Lee, J. T., Kulkarni, R. P., Ding, Y., Chang, C., Hsiai, T. K., Hokugo, A., Gkouveris, I., Tetradis, S., Nishimura, I., Demer, et al

  2018; 314 (6): H1203–H1213

- **Microscale radiosynthesis, preclinical imaging and dosimetry study of [F-18]AMBF(3)-TATE: A potential PET tracer for clinical imaging of somatostatin receptors** *NUCLEAR MEDICINE AND BIOLOGY*

  Lisova, K., Sergeev, M., Evans-Axelsson, S., Stuparu, A. D., Beykan, S., Collins, J., Jones, J., Lassmann, M., Herrmann, K., Perrin, D., Lee, J. T., Slavik, R., van Dam, et al

  2018; 61: 36–44

- **The GSK3 Signaling Axis Regulates Adaptive Glutamine Metabolism in Lung Squamous Cell Carcinoma** *CANCER CELL*

  Momcilovic, M., Bailey, S. T., Lee, J. T., Fishbein, M. C., Braas, D., Go, J., Graeber, T. G., Parlati, F., Demo, S., Li, R., Walser, T. C., Gricowski, M., Shuman, et al

  2018; 33 (5): 905-+

- **The 4-N-acyl and 4-N-alkyl gemcitabine analogues with silicon-fluoride-acceptor: Application to F-18-Radiolabeling** *EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY*

  Gonzalez, C., Sanchez, A., Collins, J., Lisova, K., Lee, J. T., van Dam, R., Barbieri, M., Ramachandran, C., Wnuk, S. F.

  2018; 148: 314–24

- **Performing radiosynthesis in microvolumes to maximize molar activity of tracers for positron emission tomography** *COMMUNICATIONS CHEMISTRY*

Sergeev, M., Lazari, M., Morgia, F., Collins, J., Javed, M., Sergeeva, O., Jones, J., Phelps, M. E., Lee, J. T., Keng, P., van Dam, R.
2018; 1

- **Performing radiosynthesis in microvolumes to maximize molar activity of tracers for positron emission tomography.** *Communications chemistry*
  Sergeev, M. E., Lazari, M., Morgia, F., Collins, J., Javed, M. R., Sergeeva, O., Jones, J., Phelps, M. E., Lee, J. T., Keng, P. Y., van Dam, R. M.
  2018; 1 (1)
- **Hexokinase 2 is targetable for HK1 negative, HK2 positive tumors from a wide variety of tissues of origin.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
  Xu, S. n., Catapang, A. n., Doh, H. M., Bayley, N. A., Lee, J. T., Braas, D. n., Graeber, T. G., Herschman, H. R.
  2018
- **Ex Vivo Radiolabeling and In Vivo PET Imaging of T Cells Expressing Nuclear Reporter Genes** *REPORTER GENE IMAGING: METHODS AND PROTOCOLS*
  Moroz, M. A., Zanzonico, P., Lee, J. T., Ponomarev, V.
  edited by Dubey, P.
  2018; 1790: 153–63
- **Detection of immune responses after immunotherapy in glioblastoma using PET and MRI** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Antonios, J. P., Soto, H., Everson, R. G., Moughon, D. L., Wang, A. C., Orpilla, J., Radu, C., Ellingson, B. M., Lee, J. T., Cloughesy, T., Phelps, M. E., Czernin, J., Liau, et al
  2017; 114 (38): 10220–25
- **Automatic concentration and reformulation of PET tracers via microfluidic membrane distillation** *LAB ON A CHIP*
  Chao, P. H., Collins, J., Argus, J. P., Tseng, W., Lee, J. T., van Dam, R.
  2017; 17 (10): 1802–16
- **Radiochemistry on electrodes: Synthesis of an F-18-labelled and in vivo stable COX-2 inhibitor** *PLOS ONE*
  Lebedev, A., Jiao, J., Lee, J., Yang, F., Allison, N., Herschman, H., Sadeghi, S.
  2017; 12 (5): e0176606
- **Rigor and Reproducibility in Analysis of Vascular Calcification** *CIRCULATION RESEARCH*
  Demer, L. L., Tintut, Y., Nguyen, K., Hsiai, T., Lee, J. T.
  2017; 120 (8): 1240–42
- **Cardiac Fibroblasts Adopt Osteogenic Fates and Can Be Targeted to Attenuate Pathological Heart Calcification** *CELL STEM CELL*
  Pillai, I. C. L., Li, S., Romay, M., Lam, L., Lu, Y., Huang, J., Dillard, N., Zemanova, M., Rubbi, L., Wang, Y., Lee, J., Xia, M., Liang, et al
  2017; 20 (2): 218-+
- **Targeted Inhibition of EGFR and Glutaminase Induces Metabolic Crisis in EGFR Mutant Lung Cancer** *CELL REPORTS*
  Momcilovic, M., Bailey, S. T., Lee, J. T., Fishbein, M. C., Magyar, C., Braas, D., Graeber, T., Jackson, N. J., Czernin, J., Emberley, E., Gross, M., Janes, J., Mackinnon, et al
  2017; 18 (3): 601–10
- **Synthesis and preclinical evaluation of an (AlF)-F-18 radiofluorinated GLU-UREA-LYS(AHX)-HBED-CC PSMA ligand** *EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING*
  Boschi, S., Lee, J. T., Beykan, S., Slavik, R., Wei, L., Spick, C., Eberlein, U., Buck, A. K., Lodi, F., Cicoria, G., Czernin, J., Lassmann, M., Fanti, et al
  2016; 43 (12): 2122–30
- **[18F]CFA as a clinically translatable probe for PET imaging of deoxycytidine kinase activity.** *Proceedings of the National Academy of Sciences of the United States of America*
  Kim, W. n., Le, T. M., Wei, L. n., Poddar, S. n., Bazzy, J. n., Wang, X. n., Uong, N. T., Abt, E. R., Capri, J. R., Austin, W. R., Van Valkenburgh, J. S., Steele, D. n., Gipson, et al
  2016; 113 (15): 4027–32
- **Comparative Analysis of T Cell Imaging with Human Nuclear Reporter Genes.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
  Moroz, M. A., Zhang, H., Lee, J., Moroz, E., Zurita, J., Shenker, L., Serganova, I., Blasberg, R., Ponomarev, V.
  2015; 56 (7): 1055-60

- **Co-targeting of convergent nucleotide biosynthetic pathways for leukemia eradication.** *The Journal of experimental medicine*
  Nathanson, D. A., Armijo, A. L., Tom, M., Li, Z., Dimitrova, E., Austin, W. R., Nomme, J., Campbell, D. O., Ta, L., Le, T. M., Lee, J. T., Darvish, R., Gordin, et al
  2014; 211 (3): 473-86
- **Development of new deoxycytidine kinase inhibitors and noninvasive in vivo evaluation using positron emission tomography.** *Journal of medicinal chemistry*
  Murphy, J. M., Armijo, A. L., Nomme, J., Lee, C. H., Smith, Q. A., Li, Z., Campbell, D. O., Liao, H. I., Nathanson, D. A., Austin, W. R., Lee, J. T., Darvish, R., Wei, et al
  2013; 56 (17): 6696-708
- **Structure-guided engineering of human thymidine kinase 2 as a positron emission tomography reporter gene for enhanced phosphorylation of non-natural thymidine analog reporter probe.** *The Journal of biological chemistry*
  Campbell, D. O., Yaghoubi, S. S., Su, Y. n., Lee, J. T., Auerbach, M. S., Herschman, H. n., Satyamurthy, N. n., Czernin, J. n., Lavie, A. n., Radu, C. G.
  2012; 287 (1): 446–54
- **Imaging in Immunology Research** *SMALL ANIMAL IMAGING: BASICS AND PRACTICAL GUIDE*
  Lee, J. T., Nair-Gill, E. D., Rabinovich, B. A., Radu, C. G., Wittie, O. N.
  edited by Kiessling, F., Pichler, B. J., Hauff, P.
  2011: 565–83
- **Novel PET probes specific for deoxycytidine kinase.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
  Shu, C. J., Campbell, D. O., Lee, J. T., Tran, A. Q., Wengrod, J. C., Witte, O. N., Phelps, M. E., Satyamurthy, N., Czernin, J., Radu, C. G.
  2010; 51 (7): 1092-8