

Stanford



Israt Alam

Sr Res Scientist-Basic Life, Rad/Molecular Imaging Program at Stanford

SUPERVISORS

- Sanjiv Gambhir

Bio

BIO

Research Focus and interests: Molecular Imaging, PET, Immuno-Oncology, Graft versus Host Disease, CAR T cells

Dr. Israt Alam is a Senior Scientist in the Radiology Department at Stanford University. She trained in Prof. Sanjiv Sam Gambhir's lab and transitioned to Dr. Michelle James' lab in 2020. Her research focuses on studying lymphocyte activation with the motivation of developing non-invasive imaging tools, to monitor immune dynamics in response to cancer immunotherapy and in immunopathology. Her work has supported the clinical translation of several nuclear imaging agents for early disease detection and prediction of treatment response. She has also worked on the development of several biomarker detection platforms for early disease detection.

Appointments:

- Senior Research Scientist, Department of Radiology, Stanford (2021-present)
- Life Sciences Research Associate, Department of Radiology, Stanford (2018-2021)
- Post-Doctoral Scholar, Department of Radiology, Stanford (2015-2018)
- Visiting Researcher under supervision of Prof. Spencer Shorte, Plateforme d'imagerie dynamique, Pasteur Institute, Paris (2014)
- Science Education Intern and Consultant: United Nations Educational, Science and Cultural Organization (UNESCO), Paris (2012-2013)

EDUCATION AND CERTIFICATIONS

- PhD, University of Cambridge, Emmanuel College, Molecular Imaging-Supervisor Prof. Kevin Brindle. Thesis title: 'Novel Probes for Imaging Cell Death'
- MSci, Imperial College London, Biochemistry

PATENTS

- Israt Alam. "United States Patent US-2018-0043040-A1 Imaging tumor glycolysis by non-invasive measurement of pyruvate kinase M2.", Feb 15, 2018
- Israt Alam, Maaïke de Backer, Andre Neves, Kevin Brindle. "United Kingdom Patent Europe EP2280735 Agents for detecting and imaging cell death", University of Cambridge, Apr 29, 2009

Teaching

COURSES

2020-21

- Probes and Applications for Multi-modality Molecular Imaging of Living Subjects: BIOE 224, RAD 224 (Win)

Professional

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- World Molecular Imaging Congress-Program Committee Member, World Molecular Imaging Society (2020 - present)
- Invited speaker: 'Interrogating the Immune System Using Antibody-based PET Tracers', World Molecular Imaging Society (WMIS) live educational webinar series (2020 - 2020)
- Course Co-Director and Lecturer, Stanford BioEngineering (BioE 224)-Probes for Multi-modality Molecular Imaging (2016 - present)
- Member, Society of Nuclear Medicine and Molecular Imaging (2018 - 2019)
- Member, World Molecular Imaging Society (WMIS) (2015 - present)
- Member, European Society of Molecular Imaging (ESMI) (2015 - present)

Publications

PUBLICATIONS

- **Minicircles for a two-step blood biomarker and PET imaging early cancer detection strategy.** *Journal of controlled release : official journal of the Controlled Release Society*
Robinson, E. R., Gowrishankar, G., D'Souza, A., Kheirulomoom, A., Haywood, T., Hori, S. S., Chuang, H. Y., Zeng, Y., Tumbale, S., Aalipour, A., Beinat, C., Alam, I. S., Sathirachinda, et al
2021
- **Real-time point-of-care total protein measurement with a miniaturized optoelectronic biosensor and fast fluorescence-based assay.** *Biosensors & bioelectronics*
Mahzabeen, F., Vermesh, O., Levi, J., Tan, M., Alam, I. S., Chan, C. T., Gambhir, S. S., Harris, J. S.
2020: 112823
- **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
- **PET reporter gene imaging and ganciclovir-mediated ablation of chimeric antigen receptor T-cells in solid tumors.** *Cancer research*
Murty, S., Labanieh, L., Murty, T., Gowrishankar, G., Haywood, T., Alam, I. S., Beinat, C., Robinson, E., Aalipour, A., Klysz, D. D., Cochran, J. R., Majzner, R., G., Mackall, et al
2020
- **Visualization of activated T cells by OX40-immunoPET as a strategy for diagnosis of acute Graft-versus-Host-Disease.** *Cancer research*
Alam, I. S., Simonetta, F., Scheller, L., Mayer, A. T., Murty, S., Vermesh, O., Nobashi, T. W., Lohmeyer, J. K., Hirai, T., Baker, J., Lau, K. H., Negrin, R., Gambhir, et al
2020
- **Clinical and radiological features of immune checkpoint inhibitor-related pneumonitis in lung cancer and non-lung cancers.** *The British journal of radiology*
Nobashi, T. W., Nishimoto, Y., Kawata, Y., Yutani, H., Nakamura, M., Tsuji, Y., Yoshida, A., Sugimoto, A., Yamamoto, T., Alam, I. S., Noma, S.
2020: 20200409
- **Intravital imaging reveals synergistic effect of CAR T-cells and radiation therapy in a preclinical immunocompetent glioblastoma model** *Oncoimmunology*
Murty, S., Haile, S. T., Beinat, C., Aalipour, A., Alam, I. S., Murty, T., Shaffer, T. M., Patel, C. B., Graves, E. E., Mackall, C. L., Gambhir, S. S.
2020; 9 (1)
- **Evaluation of [18F]DASA-23 for non-invasive measurement of aberrantly expressed pyruvate kinase M2 in glioblastoma: preclinical and first in human studies**
Beinat, C., Patel, C., Haywood, T., Murty, S., Alam, I., Xie, Y., Gandhi, H., Holley, D., Gambhir, S.
SOC NUCLEAR MEDICINE INC.2019

- **The characterization of 18F-hGTS13 for molecular imaging of xC- transporter activity with positron emission tomography.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
Beinat, C. n., Gowrishankar, G. n., Shen, B. n., Alam, I. S., Robinson, E. n., Haywood, T. n., Patel, C. B., Azevedo, E. C., Castillo, J. n., Ilovich, O. n., Koglin, N. n., Schmitt-Willich, H. n., Berndt, et al
2019
- **Development and Evaluation of an 18F-Radiolabeled Monocyclam Derivative for Imaging CXCR4 Expression.** *Molecular pharmaceutics*
Brickute, D. n., Braga, M. n., Kaliszczak, M. A., Barnes, C. n., Lau, D. n., Carroll, L. n., Stevens, E. n., Trousil, S. n., Alam, I. S., Nguyen, Q. D., Aboagye, E. O.
2019
- **Imaging of Red-Shifted Light From Bioluminescent Tumors Using Fluorescence by Unbound Excitation From Luminescence** *Front. Bioeng. Biotechnol*
Sônego, F., Bouccara, S., Pons, T., Alam, I. S., Shorte, S. L., Tournebize, R.
2019
- **Positron emission tomography reporter gene strategy for use in the central nervous system** *PNAS*
Haywood, T., Beinat, C., Gowrishankar, G., Patel, C. B., Alam, I. S., Murty, S., Gambhir, S. S.
2019
- **An intravascular magnetic wire for the high-throughput retrieval of circulating tumour cells in vivo** *NATURE BIOMEDICAL ENGINEERING*
Vermesh, O., Aalipour, A., Ge, T., Saenz, Y., Guo, Y., Alam, I. S., Park, S., Adelson, C. N., Mitsutake, Y., Vilches-Moure, J., Godoy, E., Bachmann, M. H., Ooi, et al
2018; 2 (9): 696–705
- **Emerging Intraoperative Imaging Modalities to Improve Surgical Precision.** *Molecular imaging and biology : MIB : the official publication of the Academy of Molecular Imaging*
Alam, I. S., Steinberg, I., Vermesh, O., van den Berg, N. S., Rosenthal, E. L., van Dam, G. M., Ntziachristos, V., Gambhir, S. S., Hernot, S., Rogalla, S.
2018
- **[F-18] FSPG-PET reveals increased cystine/glutamate antiporter (xc-) activity in a mouse model of multiple sclerosis** *JOURNAL OF NEUROINFLAMMATION*
Hoehne, A., James, M. L., Alam, I. S., Ronald, J. A., Schneider, B., D'Souza, A., Witney, T. H., Andrews, L. E., Cropper, H. C., Behera, D., Gowrishankar, G., Ding, Z., Wyss-Coray, et al
2018; 15
- **Imaging activated T cells predicts response to cancer vaccines.** *The Journal of clinical investigation*
Alam, I. S., Mayer, A. T., Sagiv-Barfi, I. n., Wang, K. n., Vermesh, O. n., Czerwinski, D. K., Johnson, E. M., James, M. L., Levy, R. n., Gambhir, S. S.
2018
- **Eradication of spontaneous malignancy by local immunotherapy.** *Science translational medicine*
Sagiv-Barfi, I. n., Czerwinski, D. K., Levy, S. n., Alam, I. S., Mayer, A. T., Gambhir, S. S., Levy, R. n.
2018; 10 (426)
- **Intraoperative Molecular Imaging in Lung Cancer: The State of the Art and the Future.** *Molecular therapy : the journal of the American Society of Gene Therapy*
Rogalla, S. n., Joosten, S. C., Alam, I. S., Gambhir, S. S., Vermesh, O. n.
2018; 26 (2): 338–41
- **The Utility of [18F]DASA-23 for Molecular Imaging of Prostate Cancer with Positron Emission Tomography.** *Molecular imaging and biology : MIB : the official publication of the Academy of Molecular Imaging*
Beinat, C. n., Haywood, T. n., Chen, Y. S., Patel, C. B., Alam, I. S., Murty, S. n., Gambhir, S. S.
2018
- **A PET Imaging Strategy to Visualize Activated T Cells in Acute Graft-versus-Host Disease Elicited by Allogenic Hematopoietic Cell Transplant.** *Cancer research*
Ronald, J. A., Kim, B., Gowrishankar, G., Namavari, M., Alam, I. S., D'Souza, A., Nishikii, H., Chuang, H., Ilovich, O., Lin, C., Reeves, R., Shuhendler, A., Hoehne, et al
2017; 77 (11): 2893-2902
- **Rapid Imaging of Tumor Cell Death In Vivo Using the C2A Domain of Synaptotagmin-I** *JOURNAL OF NUCLEAR MEDICINE*
Neves, A. A., Xie, B., Fawcett, S., Alam, I. S., Witney, T. H., de Backer, M. M., Summers, J., Hughes, W., McGuire, S., Soloviev, D., Miller, J., Howat, W. J., Hu, et al

2017; 58 (6): 881-87

- **F[DASA-23 for Imaging Tumor Glycolysis Through Noninvasive Measurement of Pyruvate Kinase M2.** *Molecular imaging and biology*
Beinat, C., Alam, I. S., James, M. L., Srinivasan, A., Gambhir, S. S.
2017
- **Microwave gallium-68 radiochemistry for kinetically stable bis(thiosemicarbazone) complexes: structural investigations and cellular uptake under hypoxia** *DALTON TRANSACTIONS*
Alam, I. S., Arrowsmith, R. L., Cortezon-Tamarit, F., Twyman, F., Kociok-Koehn, G., Botchway, S. W., Dilworth, J. R., Carroll, L., Aboagye, E. O., Pascu, S. I.
2016; 45 (1): 144-155
- **Radiopharmaceuticals as probes to characterize tumour tissue** *EUROPEAN JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING*
Alam, I. S., Arshad, M. A., Quang-De Nguyen, Q. D., Aboagye, E. O.
2015; 42 (4): 537-561
- **Acetyl-CoA Synthetase 2 Promotes Acetate Utilization and Maintains Cancer Cell Growth under Metabolic Stress** *CANCER CELL*
Schug, Z. T., Peck, B., Jones, D. T., Zhang, Q., Grosskurth, S., Alam, I. S., Goodwin, L. M., Smethurst, E., Mason, S., Blyth, K., McGarry, L., James, D., Shanks, et al
2015; 27 (1): 57-71
- **Preclinical Evaluation of 3-F-18-Fluoro-2,2-Dimethylpropionic Acid as an Imaging Agent for Tumor Detection** *JOURNAL OF NUCLEAR MEDICINE*
Witney, T. H., Pisaneschi, F., Alam, I. S., Trousil, S., Kaliszczak, M., Twyman, F., Brickute, D., Nguyen, Q., Schug, Z., Gottlieb, E., Aboagye, E. O.
2014; 55 (9): 1506-1512
- **Radiolabeled RGD Tracer Kinetics Annotates Differential $\alpha(v)\beta(3)$ Integrin Expression Linked to Cell Intrinsic and Vessel Expression** *MOLECULAR IMAGING AND BIOLOGY*
Alam, I. S., Witney, T. H., Tomasi, G., Carroll, L., Twyman, F. J., Quang-De Nguyen, Q. D., Aboagye, E. O.
2014; 16 (4): 558-566
- **A Novel Radiotracer to Image Glycogen Metabolism in Tumors by Positron Emission Tomography** *CANCER RESEARCH*
Witney, T. H., Carroll, L., Alam, I. S., Chandrashekan, A., Quang-De Nguyen, Q. D., Sala, R., Harris, R., DeBerardinis, R. J., Agarwal, R., Aboagye, E. O.
2014; 74 (5): 1319-1328
- **RGD-targeted MnO nanoparticles as T-1 contrast agents for cancer imaging - the effect of PEG length in vivo** *JOURNAL OF MATERIALS CHEMISTRY B*
Gallo, J., Alam, I. S., Lavdas, I., Wylezinska-Arridge, M., Aboagye, E. O., Long, N. J.
2014; 2 (7): 868-876
- **PET imaging with multimodal upconversion nanoparticles** *DALTON TRANSACTIONS*
Gallo, J., Alam, I. S., Jin, J., Gu, Y., Aboagye, E. O., Wong, W., Long, N. J.
2014; 43 (14): 5535-5545
- **Evaluation of Deuterated F-18- and C-11-Labeled Choline Analogs for Cancer Detection by Positron Emission Tomography** *CLINICAL CANCER RESEARCH*
Witney, T. H., Alam, I. S., Turton, D. R., Smith, G., Carroll, L., Brickute, D., Twyman, F. J., Quang-De Nguyen, Q. D., Tomasi, G., Awais, R. O., Aboagye, E. O.
2012; 18 (4): 1063-1072
- **Imaging sialylated tumor cell glycans in vivo** *FASEB JOURNAL*
Neves, A. A., Stoeckmann, H., Harmston, R. R., Pryor, H. J., Alam, I. S., Ireland-Zecchini, H., Lewis, D. Y., Lyons, S. K., Leeper, F. J., Brindle, K. M.
2011; 25 (8): 2528-2537
- **Comparison of the C2A Domain of Synaptotagmin-I and Annexin-V As Probes for Detecting Cell Death** *BIOCONJUGATE CHEMISTRY*
Alam, I. S., Neves, A. A., Witney, T. H., Boren, J., Brindle, K. M.
2010; 21 (5): 884-891