



Sanjiv Sam Gambhir, MD, PhD

 NIH Biosketch available Online

CONTACT INFORMATION

- **Alternate Contact**

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Bio

ACADEMIC APPOINTMENTS

- Member, Bio-X
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Head, Nuclear Medicine Division, (2003-2011)
- Division Chief, Molecular Imaging Program at Stanford (MIPS), (2003- present)
- Professor, Department of Radiology and Bio-X Program, (2003- present)
- Member, Bio-X Program, (2004- present)
- Professor (By courtesy), Bioengineering, (2005- present)
- Residency Program Director, Nuclear Medicine Division, (2008-2011)
- Division Chief, Canary Center for Cancer Early Detection at Stanford, (2009- present)
- Professor (By courtesy), Materials Science & Engineering, (2010- present)
- Member, Stanford Leadership Academy, (2011-2012)
- Chair, Department of Radiology - Stanford University School of Medicine, (2011- present)
- Director, Precision Health & Integrated Diagnostics (PHIND), (2016- present)

HONORS AND AWARDS

- IEEE Marie Sklodowska-Curie Award, IEEE Advancing Technology for Humanity (2019)
- Basic Science Teaching Award, Stanford University of Medicine, Department of Radiology Residency Program (2018)
- Benedict Cassen Prize, Society of Nuclear Medicine and Molecular Imaging (2018)
- Distinguished Investigator Award, 7th Annual Academy for Radiology & Biomedical Imaging (2018)
- Honorary Professor in the Academician Expert Workstation, China National Clinical Research Center for Neurological Diseases (2018)
- Most Cited Researcher in 2018, Web Science (2018)

- NAI Fellow, National Academy of Inventors (2016)
- J. Allyn Taylor International Prize in Medicine, The Robarts Research Institute (2015)
- AAAS Fellow, American Association for the Advancement of Science (2014)
- AAISCR Lifetime Achievement Award, American Association of Indian Scientists in Cancer Research (AAISCR, Inc.) (2014)
- Society of Asian American Scientists in Cancer Research Award, The Society of Asian American Scientists in Cancer Research (2013)
- Distinguished Scientist Award for Distinguished Contributions to Nuclear Medicine, 37th Annual Western Regional Meeting of the Society of Nuclear Medicine (SNM) (2012)
- George Charles de Hevesy Nuclear Pioneer Award, Society of Nuclear Medicine (SNM) (2011)
- Most Influential Radiology Researcher, Aunt Minnie (2011)
- The Gopal Subramanian Lifetime Achievement Award, Indo-American Society of Nuclear Medicine (2011)
- Outstanding Researcher Award, Radiological Society of North America (RSNA) (2009)
- Parmley Prize, American College of Cardiology Foundations (2009)
- Stanford University Endowed Professorship, Virginia and D. K. Ludwig Professor for Clinical Investigation in Cancer Research (2009)
- ASCI member, American Society of Clinical Investigation (2008)
- IOM member, Institute of Medicine of the U.S. National Academies. (2008)
- Tesla Medal, UK Royal College of Radiologists (2008)
- Best Clinical Article, Society of Nuclear Medicine (2007)
- Best Essay Award, American College of Nurse Practitioners/Society of Nuclear Medicine (2007)
- Organizer and Co-Chair, Nobel Symposium on Molecular Imaging, Nobel Committee, Stockholm (2007)
- AIMBE Member, American Institute for Medical and Biological Engineering (2006)
- Hounsfield Medal, Imperial College of London (2006)
- Most Influential Radiology Researcher, Aunt Minnie (2006)
- Paul C. Aebersold Award, Society of Nuclear Medicine (2006)
- AMI Top Clinical Abstract Award, Academy of Molecular Imaging (2005)
- SNM Image of the Year, Society of Nuclear Medicine (2005)
- Distinguished Basic Scientist of the Year Award, The Academy of Molecular Imaging (2004)
- Distinguished Clinical Scientist Award, Doris Duke Charitable Foundation (2004)
- SMI Achievement Award, The Society for Molecular Imaging (2004)
- Holst Medal, Philips Corp and TU/e, Netherlands (2003)
- Taplin Award, The Society of Nuclear Medicine (2002)
- Frontiers of Science Lecture, National Academy of Sciences (2000)
- Best Scientific Paper (Basic Science), Journal of Nuclear Medicine (1999)
- First Prize Scientific Exhibit, Society of Nuclear Medicine (1999)
- Best Scientific Abstract (Basic Science), Indian Society of Nuclear Medicine (1998)
- First Prize Scientific Exhibit, Society of Nuclear Medicine (1997)
- Edith & Carl Lasky Memorial Award, UCLA School of Medicine (1993)
- Alexander Hollaender Fellowship, U.S. Department of Energy (1991-1992)
- Outstanding Graduate Student Award, UCLA Alumni Association (1990)
- Student Neural Networks Fellowship, Wang Institute, Boston University (1990)
- Dr. Ursula Mandel Scholarship, UCLA Graduate Division (1989-1990)

- Graduate Division Fellowship Award, UCLA Graduate Division (1988-1989)
- Graduate Distinguished Scholar Award, UCLA Alumni Association (1988)
- Systems and Integrative Biomathematics Training Grant, National Institutes of Health (NIH) (1987-1989)
- Mary Lenora Schulte Memorial Scholarship, UCLA Graduate Division (1987-1988)
- Student Research Fellowship Award, Society of Nuclear Medicine (1987)
- Medical Scientist Training Program Scholarship, National Institutes of Health (NIH) and UCLA School of Medicine (1983-1992)
- Phi Beta Kappa, UCLA (1983)
- Summa Cum Laude, Arizona State University (1983)
- Holmes Pre-Medical Science Scholarship, Arizona State University Undergraduate Division (1982)
- CRC Science Award, Litton Industries (Optical Division) (1980)
- Outstanding Physics Student Award, Society of Physics Teachers (1980)
- State Oratory Award for Public Speaking (Second Place), Optimist International (1980)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- President, International Society For Studies in Radiology (2018 - present)
- External Advisory Board, Center for BioMedical Imaging (CIBM) (2017 - present)
- Faculty Search Committee, Chair Search, Dept. of Pathology, Stanford University (2015 - 2015)
- Early Detection Initiative Committee, Oregon Health & Science University (2014 - present)
- Stanford Medicine Campaign Advisory Committee, Stanford University (2012 - present)
- External Advisory Board for Spatial Systems Biomedicine, Oregon Health & Science University (2011 - present)
- Member, Society of Chairs of Academic Radiology Departments (SCARD) (2011 - present)
- Executive Board Member, International Society For Strategic Studies in Radiology (2011 - 2013)
- School of Medicine Dean's Search Committee Co-Chair, Stanford University (2011 - 2012)
- Faculty Search Committee, Chair Search, Dept. of Radiation Oncology, Stanford University (2010 - 2010)
- Faculty Search Committee, Division of Hematology/Oncology, Stanford University (2010 - 2010)
- Advisory Board, Asan Institute for Life Sciences (2009 - 2012)
- Canary Center Faculty Search Committee Chair, Stanford University (2009 - 2010)
- External Advisory Board, MoSAIC, Katholieke Universiteit (2008 - 2012)
- Advisory Committee, Harvard/Massachusetts General Hospital - Center for New Probe Development (2007 - 2013)
- Advisory Board for Molecular Imaging for Cardiac Repair of Stem Cells, Instituto Superiore di Sanita Viale Regina Elena (2007 - 2007)
- Consultant, Molecular Imaging/Bioengineering Program Development, UCSF (2007 - 2007)
- Advancements & Promotions Executive Committee, Department of Bioengineering, Stanford University (2006 - present)
- Faculty Search Committees, Department of Bioengineering, Stanford University (2006 - 2008)
- Faculty Search Committees, Department of Chemical Engineering, Stanford University (2006 - 2006)
- Bio-X Graduate Fellowship Selection Committee, Stanford University (2005 - present)
- Advisory Committee, Harvard/ Massachusetts General Hospital -Center for Molecular Imaging Research (2005 - 2010)
- Bio-X Leadership Council, Stanford University (2004 - present)
- Cancer Center Executive Committee, Stanford University (2004 - present)
- Positron Emission Tomography (PET) LLC Board, Stanford Hospital (2004 - present)
- Faculty Search Committees, Department of Radiology, Stanford University (2004 - 2011)

- Diagnostic Imaging Committee, American College of Surgeons Oncology Group (2004 - 2006)
- External Advisory Committee, Integrative Graduate Education and Research Traineeship (IGERT), Program Member, UT Austin (2004 - 2006)
- MSTP Admissions Committee, Stanford University (2004 - 2006)
- Member, European Molecular Imaging Laboratories Network of Excellence Initiative (2003 - present)
- External Advisory Committee, Network for Translational Research in Optical Imaging (NTR01) Grant, University of Pennsylvania (2003 - 2003)
- External Advisory Board, Department of Biomedical Engineering, UC Davis (2002 - 2006)
- Molecular Imaging Database Committee, National Cancer Institute – MOLI (2002 - 2006)
- Faculty Review, Memorial Sloan-Kettering Cancer Center (2002 - 2002)
- External Advisory Board for R25T Training Grant, MITO Program, Memorial Sloan-Kettering Cancer Center (2001 - 2009)
- External Advisory Board for Molecular Genes and Radiation Therapies for Cancer Grant Research, Henry Ford Health System (2001 - 2005)
- Faculty Tenure Review Committee, UCLA (2001 - 2001)
- Bioinformatics Committee on Faculty Recruitment, UCLA (2000 - 2003)
- Executive Advisory Committee, Medical Scientist Training Program (MSTP), UCLA (2000 - 2003)
- Faculty Search Committees, UCLA (1998 - 2003)
- External Advisory Board for NCI Grant, Memorial Sloan-Kettering Cancer Center (1998 - 1999)
- Molecular & Medical Pharmacology Graduate Training Committee, UCLA (1997 - 2003)

PROFESSIONAL EDUCATION

- Ph.D., UCLA Medical Scientist Training Program , Biomathematics (1990)
- M.D., UCLA , Medical Scientist Training Program (1993)
- B.S., Arizona State University , Physics (1983)

PATENTS

- S.S. Gambhir, V.S. Nair, C. Ooi, S. Park, S.X. Wang, D.J. Wong. "United States Patent 10,167,515 A Method of Molecular Analysis Using a Magnetic Sifter and Nanowell System", Leland Stanford Junior University, Jan 1, 2019
- S.S. Gambhir, I. Frocken, M. Gebauer, O. Illovich, R. Kimura, J. Kruip, C. Lange, A. Natarajan, S. Sarkar. "United States Patent 9,844,607 Immuno Imaging Agent for Use with Antibody-Drug Conjugate Therapy.", Leland Stanford Junior University, Dec 19, 2017
- S.S. Gambhir, Z.Cheng, S. Kothapalli, H. Liu. "United States Patent 9,833,144 Optical Imaging Probes, Optical Imaging Systems, Methods of Optical Imaging, and Methods of Using Optical Imaging Probes", Leland Stanford Junior University, Dec 5, 2017
- S.S. Gambhir, D. Berhera, S.Biswal, F.T. Chin, M.L. James, C.R. McCurdy, C.M. Mesangeau, B. Shen. "United States Patent 9,724,435 Highly Selective Sigma Receptor Ligands and RAdioglands as Probes in Nociceptive Processes and the Pathophysiological Study of Memory Deficits and Cognitive Disorders", Leland Stanford Junior University, Aug 8, 2017
- S.S. Gambhir, B.C. Ahn, S. Bhaumik, N. Parashurama, R. Paulmurugan, S. Yaghoubi. "United States Patent 9,719,146 Composition and Method for Imaging Stem Cells.", Leland Stanford Junior University, Aug 1, 2017
- S.S. Gambhir, F. Chin, M. L. James, C. McCurdy, C. Mesangeau, B. Shen. "United States Patent 9,604,926 Highly Selective Sigma Receptor Radioligands.", Leland Stanford Junior University, Mar 28, 2017
- S.S. Gambhir, E. Chang, N. Hughes, P. Mallick, C. Nielsen, L. Xu. "United States Patent 9,588,122 Immuno Imaging Agent for Use with Antibody-Drug Conjugate Therapy", Leland Stanford Junior University, Mar 7, 2017
- S.S. Gambhir, J.A. Ronald. "United States Patent 9,534,248 Tumor-Specific Minicircles for Cancer Screening.", Leland Stanford Junior University, Jan 3, 2017
- S.S. Gambhir, B. Hackel, A. Natarajan. "United States Patent 9,433,689 Probes and Methods of Imaging Non-Hodgkins Lymphoma.", Leland Stanford Junior University, Sep 6, 2016
- S.S. Gambhir, G. Gowrishankar, M. Namavari. "United States Patent 9,402,925 Probes and Methods of Imaging a Bacterial Infection.", Leland Stanford Junior University, Aug 2, 2016
- S.S. Gambhir, C.S. Levin, P. Olcott. "United States Patent 9,320,478 Dual-Isotope Positron Emitting Tomography for Disease Evaluation.", Leland Stanford Junior University, Apr 26, 2016
- S.S. Gambhir, B. Hackel, R. Kimura, R.M. Teed. "United States Patent 9,206,237 Cystine Knot Peptides That Bind Alpha-V-Beta 6 Integrin.", Leland Stanford Junior University, Dec 8, 2015

- S.S. Gambhir, B.S. Mitchell, M. Namavari. "United States Patent 9,011,817 Compounds and Methods of Making Compounds.", Leland Stanford Junior University, Apr 21, 2015
- S.S. Gambhir, C. Feng, J. Wu. "United States Patent 8,945,862 Double-Fusion Human Embryonic Stem Cells, Method of Making Double-Fusion Human Embryonic Stem Cells, Triple-Fusion Human Embryonic Stem Cells, Method of Making Triple-Fusion Human Embryonic Stem Cells and Methods of Monitoring Double-Fusion Human Embryonic Stem Cells and Triple-Fusion Human Embryonic Stem Cells.", Leland Stanford Junior University, Feb 3, 2015
- S.S. Gambhir, D. Guagliardo, S. Keren, I. Walton. "United States Patent 8,795,628 Molecular Imaging of Living Subjects Using Raman Spectroscopy and Labeled Raman Nanoparticles.", Leland Stanford Junior University, Aug 5, 2014
- S.S. Gambhir, Z. Cheng, H. Liu, Z. Miao, R. Gang. "United States Patent 8,753,605 Imaging Probes, Methods of Making Imaging Probes, and Methods of Imaging.", Leland Stanford Junior University, Jun 17, 2014
- S.S. Gambhir, S. Wang, A. Fu. "United States Patent 8,722,017 Highly Fluorescent Magnetic Nanoprobes, Methods of Making and Methods of Use.", Leland Stanford Junior University, May 13, 2014
- S.S. Gambhir, J. Levi, S. Keren. "United States Patent 8,574,547 Photoacoustic Probes and Methods of Imaging.", Leland Stanford Junior University, Nov 5, 2013
- S.S. Gambhir, A. Levin, J. Cochran, R. Kimura, A. Silverman. "United States Patent 8,536,301 Engineered Integrin Binding Peptides.", Leland Stanford Junior University, Sep 17, 2013
- S.S. Gambhir, A. Berger, Z. Cheng, G. Blum, M. Bogoyo. "United States Patent 8,343,458 Probes for InVivo Targeting of Active Cysteine Proteases.", Leland Stanford Junior University, Jan 1, 2013
- S.S. Gambhir, G. Glazer, S. Guccione, A. D'Souza. "United States Patent 8,278,053 Methods of Studying a Biomarker and Methods of Detecting a Biomarker.", Leland Stanford Junior University, Oct 2, 2012
- S.S. Gambhir, A. Loening, J. Rao, M. So, C. Xu.. "United States Patent 8,263,417 Self-illuminating Dot Systems and Methods of Use Thereof.", Leland Stanford Junior University, Sep 11, 2012
- S.S. Gambhir, A. Loening, A. Wu. "United States Patent 7,939,649 Luciferases and Methods for Making and Using the Same.", Leland Stanford Junior University, May 10, 2011
- S.S. Gambhir, R. Paulmurugan. "United States Patent 7,834,148 Protein-Phosphorylation Imaging Systems, Methods of Making Phosphorylation Imaging Systems, and Methods of Use Thereof.", Leland Stanford Junior University, Nov 16, 2010
- S.S. Gambhir, M. Carey, L. Wu, M. Iyer, J. Zhang. "United States Patent 7,527,942 A Transcription Amplification System for Molecular Imaging.", The Regents of the University of California, May 5, 2009
- S.S. Gambhir, P. Ray. "United States Patent 7,524,674 Multimodality Imaging of Reporter Gene Expression using a Novel Fusion Vector in Living Cells and Animals.", Leland Stanford Junior University, Apr 28, 2009
- S.S. Gambhir, A. De. "United States Patent Bioluminescence Resonance Energy Transfer (BRET) and Methods of Use Thereof. Bioluminescence Resonance Energy Transfer (BRET) and Methods of Use Thereof.", Leland Stanford Junior University, Mar 24, 2009
- S.S. Gambhir, M.L. James, T. Witney. "United States Patent 10,039,844 Imaging Tumor Glycolysis by Non-Invasive Measurement of Pyruvate Kinase M2", Leland Stanford Junior University, Aug 7, 0018

LINKS

- Department of Radiology: <http://radiology.stanford.edu>
- Molecular Imaging Program at Stanford: <http://mips.stanford.edu>
- Canary Center @ Stanford: <http://canarycenter.stanford.edu>
- My Lab Site: <http://mips.stanford.edu/research/mmil.html>
- Precision Health and Integrated Diagnostics Center at Stanford (PHIND): <https://med.stanford.edu/phind.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My laboratory is developing imaging assays to monitor fundamental cellular/molecular events in living subjects including patients. Technologies such as positron emission tomography (PET), optical (fluorescence, bioluminescence, Raman), ultrasound, and photoacoustic imaging are all under active investigation.

Imaging agents for multiple modalities including small molecules, engineered proteins, and nanoparticles are under development and being clinically translated. Our goals are to detect cancer early and to better manage cancer through the use of both in vitro diagnostics and molecular imaging. Strategies are being tested in small animal models and are also clinically translated.

In the early detection setting we are exploring multiple strategies that are pushing the limits of the fewest numbers of detectable cancer cells. The goal is to intercept cancer early so that patient outcomes can be markedly improved.

For the management of cancer we are focused on using imaging to optimize stratification of cancer patients, predicting response to therapy, and monitoring response to therapy and recurrence. We are particularly interested in cell based therapies and immunotherapies where molecular imaging can help optimize these therapies.

When we are successful the role of cost-effective diagnostics in cancer will be markedly enhanced with better patient outcomes.

CLINICAL TRIALS

- 18F-FSPG PET/CT in Diagnosing Early Lung Cancer in Patients With Lung Nodules, Recruiting
- [18F]DASA-23 and PET Scan in Evaluating Pyruvate Kinase M2 Expression in Patients With Intracranial Tumors or Recurrent Glioblastoma and Healthy Volunteers, Recruiting
- Detection of Integrin $\alpha v \beta 6$ in IPF, PSC, and COVID19 Using PET/CT, Recruiting
- 18F-FPPRGD2 PET/CT or PET/MRI in Predicting Early Response in Patients With Cancer Receiving Anti-Angiogenesis Therapy, Not Recruiting
- [18F]FTC-146 PET/MRI in Healthy Volunteers and in CRPS and Sciatica, Not Recruiting
- A Pilot Trial Using BR55 Ultrasound Contrast Agent in the Assessment of Prostate Cancer, Not Recruiting
- Adjunctive Efficacy Study Of The SoftScan® Optical Breast Imaging System, Not Recruiting
- Assessing Response to Treatment in Non-Hodgkin's Lymphoma Patients Using ^{64}Cu -DOTA-Rituximab PET/CT, Not Recruiting
- Assessing the Suitability of an Imaging Probe for Use in Clinical Cell and Gene Therapy Trials in Cancer and Rheumatoid Arthritis, Not Recruiting
- Biodistribution&Pharmacokinetic of Position Emission Tomography(PET) Radiopharmaceutical 18F C SNAT4, Not Recruiting
- Combined 18F-NaF/18F-FDG PET/MRI for Detection of Skeletal Metastases, Not Recruiting
- Combined F-18 NaF and F-18 FDG PET/CT for Evaluation of Malignancy, Not Recruiting
- Copper Cu 64 -DOTA-B-Fab PET/CT in Imaging Patients With Ovarian and Breast Cancer, Not Recruiting
- Correlation of PET-CT Studies With Serum Protein Analysis, Not Recruiting
- Detection of Graft Versus Host Disease With [18F]F-AraG, Not Recruiting
- Evaluating Sunitinib Therapy in Renal Cell Carcinoma Using F-18 FDG PET/CT and DCE MRI, Not Recruiting
- Exploration of Tumor Accumulation of BAY94-9392 in Patients With Cancer, Not Recruiting
- F18PET/CT Versus TC-MDP Scanning to Detect Bone Mets, Not Recruiting
- FLT-PET/CT vs FDG-PET/CT for Therapy Monitoring of Diffuse Large B-cell Lymphoma, Not Recruiting
- Imaging During Surgery in Diagnosing Patients With Prostate, Bladder, or Kidney Cancer, Not Recruiting
- Integrin Alpha-v-Beta and [18F]-R01-MG-F2 PET/CT in Measuring Response in Patients With Pancreatic Cancer and Healthy Volunteers, Not Recruiting
- Photoacoustic Imaging (PAI) of Suspicious Breast Cancers - A Clinical Feasibility Study, Not Recruiting
- Photoacoustic Imaging (PAI) of the Prostate: A Clinical Feasibility Study, Not Recruiting
- Photoacoustic Imaging in Detecting Ovarian or Fallopian Tube Cancer, Not Recruiting
- Pilot 3D Contrast-Enhanced Ultrasound Imaging to Predict Treatment Response in Liver Metastases, Not Recruiting
- Pilot Study to Determine Radioiodide Accumulation and Dosimetry in Breast Cancers Using ^{124}I PET/CT, Not Recruiting
- Project Baseline Health Study, Not Recruiting
- Scintigraphic Assessment of I- Transport in Metastatic Breast Cancer and Evaluation of ^{131}I Ablative Therapy: (Part I) Radioiodide Imaging Study, Not Recruiting
- Transrectal Photoacoustic Imaging of the Prostate, Not Recruiting

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biomedical Informatics (Phd Program)

Publications

PUBLICATIONS

- **Tumor treating fields (TTFields) impairs aberrant glycolysis in glioblastoma as evaluated by [18F]DASA-23, a non-invasive probe of pyruvate kinase M2 (PKM2) expression** *Neoplasia*
Patel, C. B., Beinat, C., Xie, Y., Chang, E., Gambhir, S. S.
2021; 23 (1): 58-67
- **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
- **Mitochondrial copper depletion suppresses triple-negative breast cancer in mice.** *Nature biotechnology*
Cui, L., Gouw, A. M., LaGory, E. L., Guo, S., Attarwala, N., Tang, Y., Qi, J., Chen, Y., Gao, Z., Casey, K. M., Bazhin, A. A., Chen, M., Hu, 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 evaluation of (4S)-4-(3-[18F]Fluoropropyl)-L-glutamate (18F-FSPG) for PET/CT imaging in patients with newly diagnosed and recurrent prostate cancer.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Park, S. Y., Na, S. J., Kumar, M., Mosci, C., Wardak, M., Koglin, N., Bullich, S., Mueller, A., Berndt, M., Stephens, A. W., Cho, Y. M., Ahn, H., Chae, et al
2020
- **Synthesis and Characterization of 9-(4-[18F]Fluoro-3-(hydroxymethyl)butyl)-2-(phenylthio)-6-oxopurine as a Novel PET Agent for Mutant Herpes Simplex Virus Type 1 Thymidine Kinase Reporter Gene Imaging.** *Molecular imaging and biology*
Fuchigami, T., Haywood, T., Gowrishankar, G., Anders, D., Namavari, M., Wardak, M., Gambhir, S. S.
2020
- **Isotopically Encoded Nanotags for Multiplexed Ion Beam Imaging.** *Advanced materials technologies*
Harmsen, S., Coskun, A. F., Ganesh, S., Nolan, G. P., Gambhir, S. S.
2020; 5 (7)
- **Viral Delivery of CAR Targets to Solid Tumors Enables Effective Cell Therapy.** *Molecular therapy oncolytics*
Aalipour, A., Le Boeuf, F., Tang, M., Murty, S., Simonetta, F., Lozano, A. X., Shaffer, T. M., Bell, J. C., Gambhir, S. S.
2020; 17: 232–40
- **PET imaging of the natural killer cell activation receptor NKp30.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
Shaffer, T., Gambhir, S. S., Aalipour, A., Schurch, C.
2020
- **The Project Baseline Health Study: a step towards a broader mission to map human health** *NPJ DIGITAL MEDICINE*
Arges, K., Assimes, T., Bajaj, V., Balu, S., Bashir, M. R., Beskow, L., Blanco, R., Califf, R., Campbell, P., Carin, L., Christian, V., Cousins, S., Das, et al
2020; 3 (1): 84

- **Molecular Imaging of Infective Endocarditis With 6''-[18F]Fluoromaltotriose Positron Emission Tomography-Computed Tomography.** *Circulation*
Wardak, M., Gowrishankar, G., Zhao, X., Liu, Y., Chang, E., Namavari, M., Haywood, T., Gabr, M. T., Neofytou, E., Chour, T., Qin, X., Vilches-Moure, J. G., Hardy, et al
2020; 141 (21): 1729–31
- **Isotopically Encoded Nanotags for Multiplexed Ion Beam Imaging** *ADVANCED MATERIALS TECHNOLOGIES*
Harmsen, S., Coskun, A. F., Ganesh, S., Nolan, G. P., Gambhir, S. S.
2020
- **Imaging activated immune response following therapeutic vaccination in an orthotopic glioma model with Zr-89-DFO-OX40 mAb PET**
Nobashi, T., Mayer, A., Xiao, Z., Chan, C., Chaney, A., Gambhir, S.
SOC NUCLEAR MEDICINE INC.2020
- **A pilot study of F-18-FSPG SiPM-based PET/CT in patients referred for exclusion of active cardiac sarcoidosis and negative or non-diagnostic F-18-FDG PET/CT**
Duan, H., Hatami, N., Baratto, L., Davidzon, G., Aparici, C., Gambhir, S., Koglin, N., Witteles, R., Iagaru, A.
SOC NUCLEAR MEDICINE INC.2020
- **Non-Invasive Photoacoustic Imaging of In Vivo Mice with Erythrocyte Derived Optical Nanoparticles to Detect CAD/MI.** *Scientific reports*
Liu, Y., Hanley, T., Chen, H., Long, S. R., Gambhir, S. S., Cheng, Z., Wu, J. C., Fakhri, G. E., Anvari, B., Zaman, R. T.
2020; 10 (1): 5983
- **Positron emission tomography (PET) imaging of the natural killer (NK) cell activation receptor NKp30.**
Shaffer, T. M., Aalipour, A., Gambhir, S. S.
AMER ASSOC CANCER RESEARCH.2020: 102–3
- **Integrating genomic features for non-invasive early lung cancer detection.** *Nature*
Chabon, J. J., Hamilton, E. G., Kurtz, D. M., Esfahani, M. S., Moding, E. J., Stehr, H., Schroers-Martin, J., Nabet, B. Y., Chen, B., Chaudhuri, A. A., Liu, C. L., Hui, A. B., Jin, et al
2020; 580 (7802): 245-251
- **ICOS is an indicator of T cell-mediated response to cancer immunotherapy.** *Cancer research*
Xiao, Z., Mayer, A. T., Nobashi, T. W., Gambhir, S. S.
2020
- **SP94-Targeted Triblock Copolymer Nanoparticle Delivers Thymidine Kinase-p53-Nitroreductase Triple Therapeutic Gene and Restores Anticancer Function against Hepatocellular Carcinoma in Vivo.** *ACS applied materials & interfaces*
Sukumar, U. K., Rajendran, J. C., Gambhir, S. S., Massoud, T. F., Paulmurugan, R.
2020
- **Radiotheranostics: a roadmap for future development** *LANCET ONCOLOGY*
Herrmann, K., Schwaiger, M., Lewis, J. S., Solomon, S. B., McNeil, B. J., Baumann, M., Gambhir, S. S., Hricak, H., Weissleder, R.
2020; 21 (3): E146–E156
- **Evaluation of Glycolytic Response to Multiple Classes of Anti-glioblastoma Drugs by Noninvasive Measurement of Pyruvate Kinase M2 Using [F-18]DASA-23** *MOLECULAR IMAGING AND BIOLOGY*
Beinat, C., Patel, C. B., Xie, Y., Gambhir, S. S.
2020; 22 (1): 124–33
- **Toward the Clinical Development and Validation of a Thy1-Targeted Ultrasound Contrast Agent for the Early Detection of Pancreatic Ductal Adenocarcinoma.** *Investigative radiology*
Bam, R. n., Daryaei, I. n., Abou-Elkacem, L. n., Vilches-Moure, J. G., Meuillet, E. J., Lutz, A. n., Marinelli, E. R., Unger, E. C., Gambhir, S. S., Paulmurugan, R. n.
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
- **Whole-body tracking of single cells via positron emission tomography.** *Nature biomedical engineering*
Jung, K. O., Kim, T. J., Yu, J. H., Rhee, S. n., Zhao, W. n., Ha, B. n., Red-Horse, K. n., Gambhir, S. S., Pratz, G. n.

2020

- **A mountable toilet system for personalized health monitoring via the analysis of excreta.** *Nature biomedical engineering*
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