Stanford

Arutselvan Natarajan

Senior Research Scientist - Basic Life, Rad/Molecular Imaging Program at Stanford

Bio

CURRENT ROLE AT STANFORD

Senior Scientist

HONORS AND AWARDS

- Extended Senior Research Fellowship, Council for Scientific and Industrial Research, India (1998)
- Research Associate Fellowship, Council for Scientific and Industrial Research, India (2001)
- Young Professional Award, Basic Science Research, Society of Nuclear Medicine Annual Meeting, San Diego, California (2006)
- Plasma Mass Spectrometry Award, UC Davis Interdisciplinary Center (2007, 2008)
- Clinical and Translational Science Center - pilot grant award, UC Davis (2007)
- Best Paper Presentation Award, International Medicinal Chemistry Conference, India, Bangalore, (2008)
- First Poster Award, Fourteenth Annual Cancer Research Symposium, UC Davis Cancer Center, Sacramento, California (2008)

EDUCATION AND CERTIFICATIONS

- Ph.D, Alagappa University, Karaikudi, India , Industrial Chemistry (2000)
- MS, Institution of Chemists (India), India , Bio and Pharmaceutical chemistry (1991)
- B.Sc, University of Madras, India , Chemistry (1982)

Publications

PUBLICATIONS

- **Molecular Imaging of Tumor-Infiltrating Lymphocytes in Living Animals Using a Novel mCD3 Fibronectin Scaffold.** *Bioconjugate chemistry*
  Wynter, C., Natarajan, A., John, C., Jain, K., Paulmurugan, R.
  2024
- **Preclinical evaluation of 89Zr-Panitumumab for biology-guided radiotherapy.** *International journal of radiation oncology, biology, physics*
  Natarajan, A., Khan, S., Liang, X., Nguyen, H., Das, N., Anders, D., Malik, N., Oderinde, O. M., Chin, F., Rosenthal, E., Pratx, G.
  2023
- **BEST IN PHYSICS (MULTI-DISCIPLINARY): Feasibility of Biology-Guided Radiation Therapy Using a Long-Lived Antibody PET Tracer**
  Natarajan, A., Khan, S., Anders, D., Malik, N., Nguyen, H., Oderinde, O., Chin, F., Rosenthal, E., Pratx, G.
  WILEY.2022: E560
- **FN3 linked nanobubbles as a targeted contrast agent for US imaging of cancer-associated human PD-L1.** *Journal of controlled release : official journal of the Controlled Release Society*
  Kumar, U. S., Natarajan, A., Massoud, T. F., Paulmurugan, R.

2022

- **PET imaging of TIGIT expression on tumor-infiltrating lymphocytes.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
  Shaffer, T., Natarajan, A., Gambhir, S. S.
  2021

- **A Novel Engineered Small Protein for Positron Emission Tomography Imaging of Human Programmed Death Ligand-1 : Validation in Mouse Models and Human Cancer Tissues** *Clinical Cancer Res*
  Natarajan, A., Patel, C. B., Ramakrishnan, S., Panesar, P. S., Long, S. R., Gambhir, S. S.
  2018

- **Development of Novel ImmunoPET Tracers to Image Human PD-1 Checkpoint Expression on Tumor-Infiltrating Lymphocytes in a Humanized Mouse Model.** *Molecular imaging and biology*
  Natarajan, A., Mayer, A. T., Reeves, R. E., Nagamine, C. M., Gambhir, S. S.
  2017

- **Multiscale Framework for Imaging Radio labeled Therapeutics** *MOLECULAR PHARMACEUTICS*
  Natarajan, A., Tuerkcan, S., Gambhir, S. S., Pratx, G.
  2015; 12 (12): 4554-4560

- **Engineering high-affinity PD-1 variants for optimized immunotherapy and immuno-PET imaging.** *Proceedings of the National Academy of Sciences of the United States of America*
  Maute, R. L., Gordon, S. R., Mayer, A. T., McCracken, M. N., Natarajan, A., Ring, N. G., Kimura, R., Tsai, J. M., Manglik, A., Kruse, A. C., Gambhir, S. S., Weissman, I. L., Ring, et al
  2015; 112 (47): E6506-14

- **Novel Radiotracer for ImmunoPET Imaging of PD-1 Checkpoint Expression on Tumor Infiltrating Lymphocytes.** *Bioconjugate chemistry*
  Natarajan, A., Mayer, A. T., Xu, L., Reeves, R. E., Gano, J., Gambhir, S. S.
  2015; 26 (10): 2062-2069

- **Radiation Dosimetry Study of [(89)Zr]rituximab Tracer for Clinical Translation of B cell NHL Imaging using Positron Emission Tomography.** *Molecular imaging and biology*
  Natarajan, A., Gambhir, S. S.
  2015; 17 (4): 539-547

- **Imaging of hepatocellular carcinoma patient-derived xenografts using Zr-89-labeled anti-glypican-3 monoclonal antibody** *BIOMATERIALS*
  Yang, X., Liu, H., Sun, C. K., Natarajan, A., Hu, X., Wang, X., Allegretta, M., Guttmann, R. D., Gambhir, S. S., Chua, M., Cheng, Z., So, S. K.
  2014; 35 (25): 6964-6971

- **A Novel Engineered Anti-CD20 Tracer Enables Early Time PET Imaging in a Humanized Transgenic Mouse Model of B-cell Non-Hodgkins Lymphoma** *CLINICAL CANCER RESEARCH*
  Natarajan, A., Hackel, B. J., Gambhir, S. S.
  2013; 19 (24): 6820-6829

- **Evaluation of Zr-89-rituximab Tracer by Cerenkov Luminescence Imaging and Correlation with PET in a Humanized Transgenic Mouse Model to Image NHL** *MOLECULAR IMAGING AND BIOLOGY*
  Natarajan, A., Habte, F., Liu, H., Sathirachinda, A., Hu, X., Cheng, Z., Nagamine, C. M., Gambhir, S. S.
  2013; 15 (4): 468-475

- **Positron Emission Tomography of Cu-64-DOTA-Rituximab in a Transgenic Mouse Model Expressing Human CD20 for Clinical Translation to Image NHL** *MOLECULAR IMAGING AND BIOLOGY*
  Natarajan, A., Gowrishankar, G., Nielsen, C. H., Wang, S., Iagaru, A., Goris, M. L., Gambhir, S. S.
  2012; 14 (5): 608-616

- **Development of a Novel Long-Lived ImmunoPET Tracer for Monitoring Lymphoma Therapy in a Humanized Transgenic Mouse Model** *BIOCONJUGATE CHEMISTRY*
  Natarajan, A., Habte, F., Gambhir, S. S.
  2012; 23 (6): 1221-1229

- **Halogenated Benzimidazole Carboxamides Target Integrin alpha(4)beta(1) on T-Cell and B-Cell Lymphomas** *CANCER RESEARCH*
  Carpenter, R. D., Natarajan, A., Lau, E. Y., Andrei, M., Solano, D. M., Lightstone, F. C., DeNardo, S. J., Lam, K. S., Kurth, M. J.

2010; 70 (13): 5448-5456

- **Breast Cancer Targeting Novel microRNA-Nanoparticles for Imaging** *Conference on Multimodal Biomedical Imaging IV*
  Natarajan, A., Venugopal, S. K., DeNardo, S. J., Zern, M. A.
  SPIE-INT SOC OPTICAL ENGINEERING.2009
- **Renal cancer early diagnosis using a novel B7-H3 targeted ultrasound contrast imaging**
  Natarajan, A., Baek, J., Paulmurugan, R., Dahl, J.
  AMER ASSOC CANCER RESEARCH.2026
- **Scalable Synthesis of Calcium Fluoride Nanoparticles as a Novel Ultrasound Contrast Agent for Imaging Tumor Targeted Delivery of Therapeutics** *CHEMICAL & BIOMEDICAL IMAGING*
  Thangudu, S., Natarajan, A., Mehta, S., Devarakonda, K., Massoud, T. F., Paulmurugan, R.
  2026
- **Imaging Ligand-Driven PPAR Activities Using Single-Chain Bioluminescent Probes.** *ACS omega*
  Kim, S. B., Furuta, T., Kamiya, G., Maki, S. A., Orioka, M., Watanabe, R., Hiruta, Y., Thangudu, S., Natarajan, A., Paulmurugan, R.
  2025; 10 (30): 33850-33861
- **Imaging Ligand-Driven PPAR Activities Using Single-Chain Bioluminescent Probes** *ACS OMEGA*
  Kim, S., Furuta, T., Kamiya, G., Maki, S. A., Orioka, M., Watanabe, R., Hiruta, Y., Thangudu, S., Natarajan, A., Paulmurugan, R.
  2025
- **Molecular Ultrasound Imaging of PD-L1 Expression on Cancer Endothelial Cells.** *Ultrasound in medicine & biology*
  Sadeghipour, N., Tabesh, F., Natarajan, A., Lutz, A., Paulmurugan, R., Kaffas, A. E.
  2025
- **Enhancing Ultrasound Molecular Imaging: Toward Real-Time RPCA-Based Filtering to Differentiate Bound and Free Microbubbles.** *ArXiv*
  Hashemi, H. S., Hyun, D., Nguyen, N., Baek, J., Natarajan, A., Tabesh, F., Andrzejek, A., Paulmurugan, R., Dahl, J. J.
  2025
- **Molecular Association Assay Systems for Imaging Protein-Protein Interactions in Mammalian Cells.** *Biosensors*
  Kim, S. B., Furuta, T., Thangudu, S., Natarajan, A., Paulmurugan, R.
  2025; 15 (5)
- **Noninvasive Bioluminescence Imaging of Serum Albumins in Living Mice.** *ACS chemical biology*
  Kim, S. B., Kamiya, G., Furuta, T., Kitada, N., Thangudu, S., Natarajan, A., Maki, S. A., Paulmurugan, R.
  2025
- **Ultra-low dose immunoPET using64Cu-rituximab tracer for a human CD20 mouse model.** *Frontiers in medicine*
  Habte, F., Natarajan, A.
  2025; 12: 1548132
- **Efficient radiolabeling of mesoporous silica nanoparticles for single-cell PET imaging.** *European journal of nuclear medicine and molecular imaging*
  Khan, S., Zhong, X., Das, N., Yu, J. H., Natarajan, A., Anders, D., Pratx, G.
  2024
- **Regiospecific Coelenterazine Analogs for Bioassays and Molecular Imaging.** *Bioconjugate chemistry*
  Kamiya, G., Kitada, N., Furuta, T., Thangudu, S., Natarajan, A., Paulmurugan, R., Kim, S. B., Maki, S. A.
  2024
- **Increased [18F]FDG uptake of radiation-induced giant cells: a single-cell study in lung cancer models.** *Npj imaging*
  Das, N., Nguyen, H. T., Lu, W. J., Natarajan, A., Khan, S., Pratx, G.
  2024; 2 (1): 14
- **Increased [18F]FDG uptake of radiation-induced giant cells: a single-cell study in lung cancer models** *npj Imaging*
  Das, N., Nguyen, H. T., Lu, W., Natarajan, A., Khan, S., Pratx, G.
  2024; 2: 1-10
- **Enhancing Ultrasound Molecular Imaging: RPCA-Based Filtering to Differentiate Tumor-Bound and Free Microbubbles**

Hashemi, H. S., Hyun, D., Baek, J., Natarajan, A., Tabesh, F., Paulmurugan, R., Dahl, J. J., IEEE
IEEE.2024

- **Synthesis and Evaluation of Clinically Translatable Targeted Microbubbles Using a Microfluidic Device for In Vivo Ultrasound Molecular Imaging.** *International journal of molecular sciences*
  Bam, R., Natarajan, A., Tabesh, F., Paulmurugan, R., Dahl, J. J.
  2023; 24 (10)

- **Quantitative methods for molecular ultrasound imaging**
  Sadeghipour, N., Tabesh, F., Natarajan, A., Jones, M. A., Chen, X., Paulmurugan, R., Zheng, B., El Kaffas, A.
  edited by Boehm, C., Bottenus, N.
  SPIE-INT SOC OPTICAL ENGINEERING.2023

- **Recent Trends and Opportunities for the Targeted Immuno-Nanomaterials for Cancer Theranostics Applications.** *Micromachines*
  John, C., Jain, K., Masanam, H. B., Narasimhan, A. K., Natarajan, A.
  2022; 13 (12)

- **Remotely controlled near-infrared-triggered photothermal treatment of brain tumours in freely behaving mice using gold nanostars.** *Nature nanotechnology*
  Arami, H., Kananian, S., Khalifehzadeh, L., Patel, C. B., Chang, E., Tanabe, Y., Zeng, Y., Madsen, S. J., Mandella, M. J., Natarajan, A., Peterson, E. E., Sinclair, R., Poon, et al
  2022

- **Simultaneously Tracking Multiple Single Cells Using a Dual-Layer BGO/LSO PET Scanner**
  Nguyen, H., Khan, S., Das, N., Natarajan, A., Takematsu, E., Pratx, G.
  WILEY.2022: E161

- **On Demand Biosensors for Early Diagnosis of Cancer and Immune Checkpoints Blockade Therapy Monitoring from Liquid Biopsy.** *Biosensors*
  Mummareddy, S., Pradhan, S., Narasimhan, A. K., Natarajan, A.
  1800; 11 (12)

- **A Humanized Anti-GPC3 Antibody for Immuno-Positron Emission Tomography Imaging of Orthotopic Mouse Model of Patient-Derived Hepatocellular Carcinoma Xenografts.** *Cancers*
  Natarajan, A., Zhang, H., Ye, W., Huttad, L., Tan, M., Chua, M., Gambhir, S. S., So, S. K.
  2021; 13 (16)

- **Permeabilizing Cell Membranes with Electric Fields.** *Cancers*
  Aguilar, A. A., Ho, M. C., Chang, E., Carlson, K. W., Natarajan, A., Marciano, T., Bomzon, Z., Patel, C. B.
  2021; 13 (9)

- **Permeabilizing Cell Membranes with Electric Fields** *CANCERS*
  Aguilar, A. A., Ho, M. C., Chang, E., Carlson, K. W., Natarajan, A., Marciano, T., Bomzon, Z., Patel, C. B.
  2021; 13 (9)

- **Ultrasound Triggered Co-Delivery of Therapeutic MicroRNAs and a Triple Suicide Gene Therapy Vector by Using Biocompatible Polymer Nanoparticles for Improved Cancer Therapy in Mouse Models** *ADVANCED THERAPEUTICS*
  Kumar, S., Wang, H., Telichko, A. V., Natarajan, A., Bettinger, T., Cherkaoui, S., Massoud, T. F., Dahl, J. J., Paulmurugan, R.
  2021

- **COMBINING THE GLIOBLASTOMA CELL MEMBRANE-PERMEABILIZING EFFECT OF TUMOR TREATING FIELDS (TTFIELDS) WITH WITHAFERIN A (AND OTHER) CHEMOTHERAPY**
  Chang, E., Patel, C., Young, C., Flores, T., Zeng, Y., Joubert, L., Arami, H., Natarajan, A., Sinclair, R., Gambhir, S.
  OXFORD UNIV PRESS INC.2020: 30

- **64Cu-immunoPET imaging: bench to bedside.** *The quarterly journal of nuclear medicine and molecular imaging : official publication of the Italian Association of Nuclear Medicine (AIMN) [and] the International Association of Radiopharmacology (IAR), [and] Section of the Society of...*
  Natarajan, A.
  2020

- **Two Patient Studies of a Companion Diagnostic Immuno-Positron Emission Tomography (PET) Tracer for Measuring Human CA6 Expression in Cancer for Antibody Drug Conjugate (ADC) Therapy.** *Molecular imaging*
  Natarajan, A., Srinivas, S. M., Azevedo, C., Greene, L., Bauchet, A., Jouannot, E., Lacoste-Bourgeacq, A., Guizon, I., Cohen, P., Naneix, A., Ilovich, O., Cisneros, J., Rupanarayan, et al
  2020; 19: 1536012120939398

- **Reconstructed Apoptotic Bodies as Targeted "Nano Decoys" to Treat Intracellular Bacterial Infections within Macrophages and Cancer Cells.** *ACS nano*
  Bose, R. J., Tharmalingam, N. n., Garcia Marques, F. J., Sukumar, U. K., Natarajan, A. n., Zeng, Y. n., Robinson, E. n., Bermudez, A. n., Chang, E. n., Habte, F. n., Pitteri, S. J., McCarthy, J. R., Gambhir, et al
  2020

- **TUMOR TREATING FIELDS LEADS TO CHANGES IN MEMBRANE PERMEABILITY AND INCREASED PENETRATION BY ANTI-GLIOMA DRUGS**
  Chang, E., Patel, C., Beinat, C., Young, C., Flores, T., Zeng, Y., Joubert, L., Arami, H., Natarajan, A., Sinclair, R., Gambhir, S.
  OXFORD UNIV PRESS INC.2019: 93

- **Engineering of a novel subnanomolar affinity fibronectin III domain binder targeting human programmed death-ligand 1.** *Protein engineering, design & selection : PEDS*
  Ramakrishnan, S., Natarajan, A., Chan, C. T., Panesar, P. S., Gambhir, S. S.
  2019

- **Evaluation of integrin alphavbeta6 cystine knot PET tracers to detect cancer and idiopathic pulmonary fibrosis.** *Nature communications*
  Kimura, R. H., Wang, L., Shen, B., Huo, L., Tummers, W., Filipp, F. V., Guo, H. H., Haywood, T., Abou-Elkacem, L., Baratto, L., Habte, F., Devulapally, R., Witney, et al
  2019; 10 (1): 4673

- **Tumor treating fields increases membrane permeability in glioblastoma cells**
  Chang, E., Patel, C., Pohling, C., Young, C., Song, J., Flores, T. A., Zeng, Y., Joubert, L., Arami, H., Natarajan, A., Sinclair, R., Gambhir, S. S.
  AMER ASSOC CANCER RESEARCH.2019

- **Highly bright and stable NIR-BRET with blue-shifted coelenterazine derivatives for deep-tissue imaging of molecular events in vivo.** *Theranostics*
  Nishihara, R., Paulmurugan, R., Nakajima, T., Yamamoto, E., Natarajan, A., Afjei, R., Hiruta, Y., Iwasawa, N., Nishiyama, S., Citterio, D., Sato, M., Kim, S. B., Suzuki, et al
  2019; 9 (9): 2646-2661

- **A Novel Engineered Small Protein for Positron Emission Tomography Imaging of Human Programmed Death Ligand-1: Validation in Mouse Models and Human Cancer Tissues.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
  Natarajan, A., Patel, C. B., Ramakrishnan, S., Panesar, P. S., Long, S. R., Gambhir, S. S.
  2019; 25 (6): 1774-1785

- **Highly bright and stable NIR-BRET with blue-shifted coelenterazine derivatives for deep-tissue imaging of molecular events in vivo** *THERANOSTICS*
  Nishihara, R., Paulmurugan, R., Nakajima, T., Yamamoto, E., Natarajan, A., Afjei, R., Hiruta, Y., Iwasawa, N., Nishiyama, S., Citterio, D., Sato, M., Kim, S., Suzuki, et al
  2019; 9 (9): 2646–61

- **Ligand-activated BRET9 imaging for measuring protein-protein interactions in living mice.** *Chemical communications (Cambridge, England)*
  Bae Kim, S. n., Fujii, R. n., Natarajan, A. n., Massoud, T. F., Paulmurugan, R. n.
  2019

- **FN3 Protein Conjugates for Cancer Diagnosis and Imaging Studies.** *Methods in molecular biology (Clifton, N.J.)*
  Natarajan, A., Abou-Elkacem, L.
  2019; 2033: 301–13

- **A blood biomarker for monitoring response to anti-EGFR therapy.** *Cancer biomarkers : section A of Disease markers*
  Hughes, N. P., Xu, L., Nielsen, C. H., Chang, E., Hori, S. S., Natarajan, A., Lee, S., Kjar, A., Kani, K., Wang, S. X., Mallick, P., Gambhir, S. S.
  2018

- **Dosimetry Prediction for Clinical Translation of 64Cu-Pembrolizumab ImmunoPET Targeting Human PD-1 Expression.** *Scientific reports*

Natarajan, A., Patel, C. B., Habte, F., Gambhir, S. S.
2018; 8 (1): 633

- **Quantification of Cerenkov Luminescence Imaging (CLI) Comparable With 3-D PET Standard Measurements.** *Molecular imaging*
  Habte, F., Natarajan, A., Paik, D. S., Gambhir, S. S.
  2018; 17: 1536012118788637

- **Tumor treating fields increases membrane permeability in glioblastoma cells.** *Cell death discovery*
  Chang, E. n., Patel, C. B., Pohling, C. n., Young, C. n., Song, J. n., Flores, T. A., Zeng, Y. n., Joubert, L. M., Arami, H. n., Natarajan, A. n., Sinclair, R. n., Gambhir, S. S.
  2018; 4: 113

- **Dosimetry Prediction for Clinical Translation of 64Cu-Pembrolizumab ImmunoPET Targeting Human PD-1 Expression** *Scientific Reports*
  Natarajan, A., Patel, C. B., Habte, F., Gambhir, S. S.
  2018

- **Tumor Treating Fields Increases Membrane Permeability in Glioblastoma Cells** *Cell Death Discovery*
  Chang, E., Patel, C. B., Pohling, C., Young, C., Song, J., Flores, T., Zeng, Y., Joubert, L. M., Arami, H., Natarajan, A., Sinclair, R., Gambhir, S. S.
  2018; 4

- **Practical Immuno-PET Radiotracer Design Considerations for Human Immune Checkpoint Imaging** *JOURNAL OF NUCLEAR MEDICINE*
  Mayer, A. T., Natarajan, A., Gordon, S. R., Maute, R. L., McCracken, M. N., Ring, A. M., Weissman, I. L., Gambhir, S. S.
  2017; 58 (4): 538-546

- **Imaging B cells in a mouse model of multiple sclerosis using (64)Cu-Rituximab-PET.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
  James, M. L., Hoehne, A. n., Mayer, A. T., Lechtenberg, K. n., Moreno, M. n., Gowrishankar, G. n., Ilovich, O. n., Natarajan, A. n., Johnson, E. M., Nguyen, J. n., Quach, L. n., Han, M. n., Buckwalter, et al
  2017

- **Practical ImmunoPET radiotracer design considerations for human immune checkpoint imaging.** *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*
  Mayer, A. T., Natarajan, A., Gordon, S., Maute, R., McCracken, M., Ring, A., Weissman, I., Gambhir, S. S.
  2016

- **AshwaMAX and Withaferin A inhibits gliomas in cellular and murine orthotopic models** *JOURNAL OF NEURO-ONCOLOGY*
  Chang, E., Pohling, C., Natarajan, A., Witney, T. H., Kaur, J., Xu, L., Gowrishankar, G., D'Souza, A. L., Murty, S., Schick, S., Chen, L., Wu, N., Khaw, et al
  2016; 126 (2): 253-264

- **AshwaMAX and Withaferin A inhibits gliomas in cellular and murine orthotopic models.** *Journal of neuro-oncology*
  Chang, E., Pohling, C., Natarajan, A., Witney, T. H., Kaur, J., Xu, L., Gowrishankar, G., D'Souza, A. L., Murty, S., Schick, S., Chen, L., Wu, N., Khaw, et al
  2016; 126 (2): 253-64

- **Multiscale Framework for Imaging Radiolabeled Therapeutics.** *Molecular pharmaceutics*
  Natarajan, A., Türkcan, S., Gambhir, S. S., Pratx, G.
  2015; 12 (12): 4554-4560

- **Engineering high-affinity PD-1 variants for optimized immunotherapy and immuno-PET imaging** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Maute, R. L., Gordon, S. R., Mayer, A. T., McCracken, M. N., Natarajan, A., Ring, N. G., Kimura, R., Tsai, J. M., Manglik, A., Kruse, A. C., Gambhir, S. S., Weissman, I. L., Ring, et al
  2015; 112 (47): E6506-E6514

- **Development and Validation of an Immuno-PET Tracer as a Companion Diagnostic Agent for Antibody-Drug Conjugate Therapy to Target the CA6 Epitope.** *Radiology*
  Ilovich, O., Natarajan, A., Hori, S., Sathirachinda, A., Kimura, R., Srinivasan, A., Gebauer, M., Kruip, J., Focken, I., Lange, C., Carrez, C., Sassoon, I., Blanc, et al
  2015; 276 (1): 191-198

- **Validation of 64Cu-DOTA-rituximab injection preparation under good manufacturing practices: a PET tracer for imaging of B-cell non-Hodgkin lymphoma.** *Molecular imaging*
  Natarajan, A., Arksey, N., Iagaru, A., Chin, F. T., Gambhir, S. S.
  2015; 14

- **Validation of 64Cu-DOTA-rituximab injection preparation under good manufacturing practices: a PET tracer for imaging of B-cell non-Hodgkin lymphoma.** *Molecular imaging*
  Natarajan, A., Arksey, N., Iagaru, A., Chin, F. T., Gambhir, S. S.
  2015; 14

- **Imaging of hepatocellular carcinoma patient-derived xenografts using (89)Zr-labeled anti-glypican-3 monoclonal antibody.** *Biomaterials*
  Yang, X., Liu, H., Sun, C. K., Natarajan, A., Hu, X., Wang, X., Allegretta, M., Guttmann, R. D., Gambhir, S. S., Chua, M. S., Cheng, Z., So, S. K.
  2014; 35 (25): 6964-71

- **A simple model for deep tissue attenuation correction and large organ analysis of Cerenkov luminescence imaging** *Medical Imaging - Physics of Medical Imaging*
  Habte, F., Natarajan, A., Paik, D. S., Gambhir, S. S.
  SPIE-INT SOC OPTICAL ENGINEERING.2014

- **A general chemical synthesis platform for crosslinking multivalent single chain variable fragments** *ORGANIC & BIOMOLECULAR CHEMISTRY*
  Schellinger, J. G., Kudupudi, A., Natarajan, A., Du, W., DeNardo, S. J., Gervay-Hague, J.
  2012; 10 (8): 1521-1526

- **The Remarkable Stability of Chimeric, Sialic Acid-derived alpha/delta-Peptides in Human Blood Plasma** *CHEMICAL BIOLOGY & DRUG DESIGN*
  Saludes, J. P., Natarajan, A., DeNardo, S. J., Gervay-Hague, J.
  2010; 75 (5): 455-460

- **Acute liver injury upregulates microRNA-491_5p in mice, and its overexpression sensitizes Hep G2 cells for tumour necrosis factor-alpha-induced apoptosis** *LIVER INTERNATIONAL*
  Yoon, S., Kim, T., Natarajan, A., Wang, S., Choi, J., Wu, J., Zern, M. A., Venugopal, S. K.
  2010; 30 (3): 376-387

- **Hexa-arginine enhanced uptake and residualization of selective high affinity ligands by Raji lymphoma cells** *MOLECULAR CANCER*
  Balhorn, R., Hok, S., DeNardo, S., Natarajan, A., Mirick, G., Corzett, M., DeNardo, G.
  2009; 8

- **In-111-LLP2A-DOTA Polyethylene Glycol-Targeting alpha 4 beta 1 Integrin: Comparative Pharmacokinetics for Imaging and Therapy of Lymphoid Malignancies** *JOURNAL OF NUCLEAR MEDICINE*
  DeNardo, S. J., Liu, R., Albrecht, H., Natarajan, A., Sutcliffe, J. L., Anderson, C., Peng, L., Ferdani, R., Cherry, S. R., Lam, K. S.
  2009; 50 (4): 625-634

- **Nanomolecular HLA-DR10 Antibody Mimics: A Potent System for Molecular Targeted Therapy and Imaging** *CANCER BIOTHERAPY AND RADIOPHARMACEUTICALS*
  DeNardo, G. L., Natarajan, A., Hok, S., Mirick, G., DeNardo, S. J., Corzett, M., Sysko, V., Lehmann, J., Beckett, L., Balhorn, R.
  2008; 23 (6): 783-795

- **Development of TNKase specific cleavable peptide linked radioimmunoconjugates for radioimmunotherapy** *BIOORGANIC & MEDICINAL CHEMISTRY LETTERS*
  Natarajan, A., Kumaresan, P. R., DeNardo, S. J., DeNardo, G. L., Mirick, G., Lam, K. S.
  2008; 18 (17): 4802-4805

- **DEVELOPMENT OF ANTICANCER NANOPARTICLES TO ENHANCE SELECTIVITY, APOPTOSIS, IMAGING, AND THERAPY**
  Natarajan, A., Mirick, G., DeNardo, G. L., DeNardo, S. J.
  INT INST ANTICANCER RESEARCH.2008: 3418–18

- **In-111-DOTA- and Cu-64-CB-TE2A-LLP2A targeting alpha 4 beta 1 integrin: Development of imaging directed Cu-67 therapy of lymphoid malignancies** *12th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  DeNardo, S., Sutcliffe, J., Anderson, C., Natarajan, A., KUKIS, D., Cherry, S., Gagnon, K., Ferdani, R., Albrecht, H., Lam, K.
  MARY ANN LIEBERT INC.2008: 515–15

- **Pre-clinical evaluation and efficacy studies of a melanin-binding IgM antibody labeled with Re-188 against experimental human metastatic melanoma in nude mice** *CANCER BIOLOGY & THERAPY*
  Dadachova, E., Revskaya, E., SESAY, M. A., Damania, H., Boucher, R., Sellers, R. S., Howell, R. C., Burns, L., Thornton, G. B., Natarajan, A., Mirick, G. R., DeNardo, S. J., DeNardo, et al
  2008; 7 (7): 1116-1127

- **NanoFerrite particle based radioimmunonanoparticles: Binding affinity and in vivo pharmacokinetics** *BIOCONJUGATE CHEMISTRY*
  Natarajan, A., Gruettner, C., Ivkov, R., DeNardo, G. L., Mirick, G., Yuan, A., Foreman, A., DeNardo, S. J.
  2008; 19 (6): 1211-1218

- **Short communication: nanoparticle thermotherapy and external beam radiation therapy for human prostate cancer cells.** *Cancer biotherapy and radiopharmaceuticals*
  Lehmann, J., Natarajan, A., DeNardo, G. L., Ivkov, R., Foreman, A. R., Catapano, C., Mirick, G., Quang, T., Gruettner, C., DeNardo, S. J.
  2008; 23 (2): 265-271

- **Nanoparticle thermotherapy and external beam radiation therapy for human prostate cancer cells** *CANCER BIOTHERAPY AND RADIOPHARMACEUTICALS*
  Lehmann, J., Natarajan, A., DeNardo, G. L., Ivkov, R., Foreman, A. R., Catapano, C., Mirick, G., Quang, T., Gruettner, C., DeNardo, S. J.
  2008; 23 (2): 265-271

- **Development of multivalent radioimmunonanoparticles for cancer imaging and therapy** *CANCER BIOTHERAPY AND RADIOPHARMACEUTICALS*
  Natarajan, A., Xiong, C., Gruettner, C., DeNardo, G. L., DeNardo, S. J.
  2008; 23 (1): 82-91

- **Characteristics of dimeric (bis) bidentate selective high affinity ligands as HLA-DR10 beta antibody mimics targeting non-Hodgkin's lymphoma** *INTERNATIONAL JOURNAL OF ONCOLOGY*
  DeNardo, G. L., Hok, S., Natarajan, A., Cosman, M., DeNardo, S. J., Lightstone, F. C., Mirick, G. R., Yuan, A., Perkins, J., Sysko, V. V., Lehmann, J., Balhorn, R. L.
  2007; 31 (4): 729-740

- **Selective high-affinity ligand antibody mimics for cancer diagnosis and therapy: Initial application to Lymphoma/Leukemia** *11th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  Balhorn, R., Hok, S., Burke, P. A., Lightstone, F. C., Cosman, M., Zemla, A., Mirick, G., Perkins, J., Natarajan, A., Corzett, M., DeNardo, S., Albrecht, H., Gregg, et al
  AMER ASSOC CANCER RESEARCH.2007: 5621S–5628S

- **Pharmacokinetic characterization in xenografted mice of a series of first-generation mimics for HLA-DR antibody, Lym-1, as carrier molecules to image and treat lymphoma** *JOURNAL OF NUCLEAR MEDICINE*
  DeNardo, G. L., Natarajan, A., Hok, S., Perkins, J., Cosman, M., DeNardo, S. J., Lightstone, F. C., Mirick, G. R., Miers, L. A., Balhorn, R. L.
  2007; 48 (8): 1338-1347

- **Synthesis and radiolabeling of selective high-affinity ligands designed to target non-Hodgkin's lymphoma and leukemia** *BIOCONJUGATE CHEMISTRY*
  Hok, S., Natarajan, A., Balhorn, R., DeNardo, S. J., DeNardo, G. L., Perkins, J.
  2007; 18 (3): 912-921

- **Thermal dosimetry predictive of efficacy of In-111-ChL6 nanoparticle AMF-induced thermoablative therapy for human breast cancer in mice** *JOURNAL OF NUCLEAR MEDICINE*
  DeNardo, S. J., DeNardo, G. L., Natarajan, A., Miers, L. A., Foreman, A. R., Gruettner, C., Adamson, G. N., Ivkov, R.
  2007; 48 (3): 437-444

- **Construction of di-scFv through a trivalent alkyne-azide 1,3-dipolar cycloaddition** *CHEMICAL COMMUNICATIONS*
  Natarajan, A., Du, W., Xiong, C., DeNardo, G. L., DeNardo, S. J., Gervay-Hague, J.
  2007: 695-697

- **Development of antibody directed nanoparticles for cancer therapy** *Conference on Thermal Treatment of Tissue - Energy Delivery and Assessment IV*
  Ivkov, R., DeNardo, S. J., Meirs, L. A., Natarajan, A., DeNardo, G. L.
  SPIE-INT SOC OPTICAL ENGINEERING.2007

- **Development of tissue plasminogen activator specific "on demand cleavable" (ODC) linkers for radioimmunotherapy by screening one-bead-one-compound combinatorial peptide libraries** *BIOCONJUGATE CHEMISTRY*
  Kumaresan, P. R., Natarajan, A., Song, A., Wang, X., Liu, R., DeNardo, G., DeNardo, S., Lam, K. S.
  2007; 18 (1): 175-182

- **Development of tumor targeting anti-MUC-1 multimer: effects of di-scFv unpaired cysteine location on PEGylation and tumor binding** *PROTEIN ENGINEERING DESIGN & SELECTION*
  Xiong, C., Natarajan, A., Shi, X., DeNardo, G. L., DeNardo, S. J.
  2006; 19 (8): 359-367

- **Chemistry and radiochemistry of selective high affinity ligands (SHALs) designed to target non-Hodgkin's lymphoma and leukemia** *11th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  Hok, S., Natarajan, A., Perkins, J., Balhorn, R. L., DeNardo, S. J., DeNardo, G. L.
  MARY ANN LIEBERT INC.2006: 392–93

- **Site-specific ligation of antibody scFv through Cu (I) catalyzed 1,3-dipolar cycloaddition** *231st National Meeting of the American-Chemical-Society*
  Du, W., Natarajan, A., DeNardo, S. J., Gervay-Hague, J.
  AMER CHEMICAL SOC.2006

- **Enhancement of the therapeutic index: From nonmyeloablative and myeloablative toward pretargeted Radioimmunotherapy for metastatic prostate cancer** *10th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  DeNardo, S. J., Richman, C. M., Albrecht, H., Burke, P. A., Natarajan, A., Yuan, A., Gregg, J. P., O'Donnel, R. T., DeNardo, G. L.
  AMER ASSOC CANCER RESEARCH.2005: 7187S–7194S

- **Development of tumor targeting bioprobes (In-111-chimeric L6 monoclonal antibody nanoparticles) for alternating magnetic field cancer therapy** *10th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  DeNardo, S. J., DeNardo, G. L., Miers, L. A., Natarajan, A., Foreman, A. R., Gruettner, C., Adamson, G. N., Ivkov, R.
  AMER ASSOC CANCER RESEARCH.2005: 7087S–7092S

- **Does paclitaxel (Taxol) given after In-111-labeled monoclonal antibodies increase tumor-cumulated activity in epithelial cancers?** *10th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  Miers, L., Lamborn, K., Yuan, A., Richman, C., Natarajan, A., DeNardo, S., DeNardo, G.
  AMER ASSOC CANCER RESEARCH.2005: 7158S–7163S

- **Synthetic high affinity ligands: Molecular targeting agents** *230th National Meeting of the American-Chemical-Society*
  Hok, S., Balhorn, R. L., Colvin, M. E., Corzett, M. H., Cosman, M., DeNardo, G. L., DeNardo, S. J., Dolan, C. E., Hanna, L. M., Lau, E. Y., Lightstone, F. C., Natarajan, A., Perkins, et al
  AMER CHEMICAL SOC.2005: U2752–U2752

- **High-dose radioimmunotherapy combined with fixed, low-dose paclitaxel in metastatic prostate and breast cancer by using a MUC-1 monoclonal antibody, m170, linked to indium-111/yttrium-90 via a cathepsin cleavable linker with cyclosporine to prevent human anti-mouse antibody** *CLINICAL CANCER RESEARCH*
  Richman, C. M., DeNardo, S. J., O'Donnell, R. T., Yuan, A., Shen, S., Goldstein, D. S., Tuscano, J. M., Wun, T., Chew, H. K., Lara, P. N., Kukis, D. L., Natarajan, A., Meares, et al
  2005; 11 (16): 5920-5927

- **Characterization of site-specific ScFv PEGylation for tumor-targeting pharmaceuticals** *BIOCONJUGATE CHEMISTRY*
  Natarajan, A., Xiong, C. Y., Albrecht, H., DeNardo, G. L., DeNardo, S. J.
  2005; 16 (1): 113-121

- **Delivery of focused hyperthermia to human xenografts in mice using alternating magnetic frequency and bioprobes** *10th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  DeNardo, S., DeNardo, G., Miers, L., Natarajan, A., Foreman, A., Gruettner, C., Ivkov, R.
  MARY ANN LIEBERT INC.2004: 535–36

- **Nonmyeloablative, myeloablative and pretargeted radioimmunotherapy for metastatic prostate cancer, using combined modalities including indium-111/yttrium-90 labeled M170 MAb or SCFVS reactive with MUC-1** *10th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  DeNardo, S., Richman, C., O'Donnell, R., Natarajan, A., Yuan, A., Lara, P., Albrecht, H., Meyers, F., DeNardo, G.
  MARY ANN LIEBERT INC.2004: 529–29

- **Does paclitaxel given after 111in labeled mab increase tumor-cumulated activity in epithelial cancers?** *10th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  Miers, L., Lamborn, K., Yuan, A., Richman, C., Natarajan, A., DeNardo, S., DeNardo, G.
  MARY ANN LIEBERT INC.2004: 516–16

- **Combined modality radioimmunotherapy (RIT) in metastatic prostate (PC) and breast cancer (BC) using paclitaxel (PT) and a MUC-1 monoclonal antibody, m170, linked to yttrium-90 (Y-90): A phase I trial.** *40th Annual Meeting of the American-Society-of-Clinical-Oncology*
  Richman, C. M., DeNardo, S. J., O'Donnell, R. T., Yuan, A., Natarajan, A., Wun, T., Tuscano, J. M., Chew, H. L., Lara, P. N., DeNardo, G. L.
  AMER SOC CLINICAL ONCOLOGY.2004: 176S–176S

- **Production of soluble ScFvs with C-terminal-free thiol for site-specific conjugation or stable dimeric ScFvs on demand** *BIOCONJUGATE CHEMISTRY*
  Albrecht, H., Burke, P. A., Natarajan, A., Xiong, C. Y., Kalicinsky, M., DeNardo, G. L., DeNardo, S. J.
  2004; 15 (1): 16-26

- **Enhanced therapeutic index of radioimmunotherapy (RIT) in prostate cancer patients: Comparison of radiation dosimetry for 1,4,7,10-tetraazacyclododecane-N,N ',N '',N '''-tetraacetic acid (DOTA)-peptide versus 2IT-DOTA monoclonal antibody linkage for RIT** *9th Conference on Cancer Therapy with Antibodies and Immunoconjugates*
  DeNardo, S. J., DeNardo, G. L., Yuan, A., Richman, C. M., O'Donnell, R. T., Lara, P. N., Kukis, D. L., Natarajan, A., Lamborn, K. R., Jacobs, F., Siantar, C. L.
  AMER ASSOC CANCER RESEARCH.2003: 3938S–3944S