

# Stanford

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## Tarik F. Massoud, MD, PhD

Professor of Radiology (Neuroimaging and Neurointervention)

### CLINICAL OFFICE (PRIMARY)

- **Stanford Dept of Radiology**

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### ACADEMIC CONTACT INFORMATION

- **Administrative Associate**

Azeem Wasi

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### Bio

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#### BIO

Tarik Massoud is a Professor of Neuroradiology and Molecular Imaging in the Department of Radiology, Stanford University School of Medicine, where he directs LEMNI (the Laboratory of Experimental and Molecular Neuroimaging), and is an Attending Neuroradiologist in Stanford Health Care. He qualified from the Medical School of the Royal College of Surgeons in Ireland and then served as intern to two inspirational medical giants of their days, Dr. William H. (Willie) Bisset at the Royal Hospital for Sick Children in Edinburgh, UK, and Professor Sir Raymond (Bill) Hoffenberg, PRCP, at the Queen Elizabeth Hospital in Birmingham, UK. He trained in Radiology and Neuroradiology in Oxford, UCLA, and the University of Michigan, and is a Fellow of the Royal College of Radiologists in London. He holds a research MD degree (NUI) in experimental neuroimaging (work conducted at UCLA), and a University of Cambridge PhD in molecular imaging (work conducted at the Crump Institute for Molecular Imaging at UCLA, and the Molecular Imaging Program at Stanford, Gambhir laboratory). From 2000 to 2013 he was a University Lecturer and Honorary Consultant in Neuroradiology at the University of Cambridge School of Clinical Medicine and Addenbrooke's Hospital in Cambridge, UK. He was formerly an Assistant and Associate Professor of Radiology at UCLA, and held visiting Associate Professorships at Columbia, New York, and MCW, Milwaukee. He has published extensively and won numerous awards at scientific meetings. His papers in experimental interventional neuroradiology and molecular imaging are widely cited. He has been a peer reviewer for dozens of international medical journals, as well as other medical charities and governmental funding agencies. Until 2023 he was founding Editor-in-Chief of the journal Reports in Medical Imaging, and is an editorial board member for numerous biomedical journals. He is the senior author or editor of nine books, including "Glioblastoma: State-of-the-Art Clinical Neuroimaging", "Basilar Artery: A Clinical Review", "Glioblastoma Resistance to Chemotherapy: Molecular Mechanisms and Innovative Reversal Strategies", "Neuroimaging Anatomy: Parts 1 and 2", and "What Radiology Residents Need to Know: Neuroradiology". In 2016 he was awarded a Special Faculty Permit ('eminent physician license') by the Medical Board of the state of California. In 2022, he was honored with a Lifetime Achievement Award by the Royal College of Surgeons in Ireland School of Medicine.

#### CLINICAL FOCUS

- Neuroradiology
- Diagnostic Neuroimaging

#### ACADEMIC APPOINTMENTS

- Professor - University Medical Line, Radiology

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

### **ADMINISTRATIVE APPOINTMENTS**

- Professor of Radiology (Neuroradiology and Molecular Imaging), Stanford University School of Medicine, (2013- present)
- Director, Laboratory of Experimental and Molecular Neuroimaging (LEMNI), Molecular Imaging Program at Stanford (MIPS), (2013- present)
- Director, SIMITAR, Stanford Initiative for Multimodality neuro-Imaging in Translational Anatomy Research (SIMITAR), (2019- present)
- Head of Academic Training (Associate Chair) in Radiology, University of Cambridge School of Clinical Medicine and Addenbrooke's Hospital, Cambridge, UK, (2007-2013)
- University Lecturer and Consultant in Neuroradiology, University of Cambridge School of Clinical Medicine and Addenbrooke's Hospital, Cambridge, UK, (2000-2013)
- Associate Professor, Neuroradiology, UCLA School of Medicine, Los Angeles, (1997-1999)
- Assistant Professor, Neuroradiology, UCLA School of Medicine, Los Angeles, (1993-1997)

### **HONORS AND AWARDS**

- Lifetime Achievement Award, Royal College of Surgeons in Ireland School of Medicine (2022)
- Summa Cum Laude Award for education and training, American Society of Neuroradiology (2022)
- Certificate of Merit Award for education and training, American Society of Neuroradiology (2022)
- Summa Cum Laude Award for education and training, American Society of Neuroradiology (2020)
- Certificate of Merit Award for education and training, American Society of Neuroradiology (2020)
- Distinguished Investigator Award, Academy of Radiology and Biomedical Imaging Research (2019)
- Guerbet Scientific Cum Laude Award, XXI Symposium Neuroradiologicum (2018)
- Sigma Xi, nominated and elected member, Sigma Xi (2018)
- Special Faculty Permit ('eminent physician license'), Medical Board of California (2016)
- Mid-Career Award for Established Practitioners, The Health Foundation, UK (2002)
- Wormald Grant Award, Royal College of Radiologists, UK (2001)
- Magna Cum Laude Award for research, American Society of Neuroradiology (1995)
- Cum Laude Award (on 5 occasions) for research, American Society of Neuroradiology (1994-2001)
- Magna Cum Laude Award for research, American Society of Neuroradiology (1993)
- William Cook Interventional Fellow, Royal College of Radiologists, UK (1993)
- Kodak Scholar, Royal College of Radiologists, UK (1992)
- J. J. Fitzsimons Gold Medal and Prize in Surgery, Royal College of Surgeons in Ireland School of Medicine (1984)
- Stoney Memorial Gold Medal in Anatomy (Neuroanatomy), Royal College of Surgeons in Ireland School of Medicine (1981)

### **PROFESSIONAL EDUCATION**

- PhD, University of Cambridge (Emmanuel College), UK , Molecular Imaging and Biology (2007)
- MD (research doctorate), National University of Ireland , Neuroradiology (2003)
- MA, University of Cambridge, UK (2003)
- Fellowship and Clinical Lecturer, University of Michigan Medical Center, Ann Arbor , Neuroradiology (clinical) (2000)
- Fellowship, UCLA Medical Center, Los Angeles , Neuroradiology (research) (1993)
- FRCR (board certification), Royal College of Radiologists, UK , Radiology (1992)

- Residency and Fellowship, John Radcliffe Hospital and Radcliffe Infirmary, Oxford, UK , Radiology and Neuroradiology (1992)
- MB BCH BAO LRCPI LRCSI, Medical School of the Royal College of Surgeons in Ireland, Dublin, and the National University of Ireland , Medicine (1984)

## LINKS

- Video alma mater award: [https://www.youtube.com/watch?v=yR2c3HRmrrY&ab\\_channel=RCSIAumni](https://www.youtube.com/watch?v=yR2c3HRmrrY&ab_channel=RCSIAumni)
- Editorial Commitments: [https://www.dovepress.com/public\\_profile.php?id=18067](https://www.dovepress.com/public_profile.php?id=18067)
- Book Publication: <https://link.springer.com/book/9783031551239>
- Book Publication: [https://www.neuroimaging.theclinics.com/issue/S1052-5149\(22\)X0003-8](https://www.neuroimaging.theclinics.com/issue/S1052-5149(22)X0003-8)
- Book Publication: [https://www.neuroimaging.theclinics.com/issue/S1052-5149\(22\)X0004-X](https://www.neuroimaging.theclinics.com/issue/S1052-5149(22)X0004-X)
- Book Publication: <https://www.elsevier.com/books/glioblastoma-resistance-to-chemotherapy-molecular-mechanisms-and-innovative-reversal-strategies/paulmurugan/978-0-12-821567-8>
- Book Publication: <https://www.frontiersin.org/research-topics/10232/advanced-neuroimaging-of-brain-metastases>
- Book Publication: <https://novapublishers.com/shop/glioblastoma-state-of-the-art-clinical-neuroimaging-2-volume-set/>
- Book Publication: <https://novapublishers.com/shop/basilar-artery-a-clinical-review-2-volume-set/>
- Book Publication: <https://www.wiley.com/en-us/Radiology%3A+Clinical+Cases+Uncovered-p-9781405184748>
- Book Publication: <https://www.springer.com/gp/book/9781563965586>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

My current interests are in molecular and translational imaging of the brain especially in neuro-oncology and cerebrovascular diseases, experimental aspects of neuroimaging, clinical neuroradiology, neuroradiological anatomy, and research education and academic training of radiologists and scientists.

## Teaching

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### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Neuroradiology (Fellowship Program)

## Publications

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### PUBLICATIONS

- **Dural Punctures Through Sacral Posterior Vertebral Arch Fusion Defects: CT Morphometric Assessment and Application in Patients With Spinal Muscular Atrophy.** *Radiology*  
Dhawan, S. S., Lanzman, B., Massoud, T. F.  
2024; 310 (2): e231520
- **A New Nrf2 Inhibitor Enhances Chemotherapeutic Effects in Glioblastoma Cells Carrying p53 Mutations.** *Cancers*  
Afjei, R., Sadeghipour, N., Kumar, S. U., Pandrala, M., Kumar, V., Malhotra, S. V., Massoud, T. F., Paulmurugan, R.  
2022; 14 (24)
- **Neuroimaging Anatomy, Part 2: Head, Neck, and Spine.** *Neuroimaging clinics of North America*  
Massoud, T. F.  
2022; 32 (4): xv-xvii
- **A rationally identified panel of microRNAs targets multiple oncogenic pathways to enhance chemotherapeutic effects in glioblastoma models.** *Scientific reports*  
Sadeghipour, N., Kumar, S. U., Massoud, T. F., Paulmurugan, R.  
2022; 12 (1): 12017
- **Neuroimaging Anatomy, Part 1: Brain and Skull.** *Neuroimaging clinics of North America*

Massoud, T. F.

2022; 32 (3): xvii-xix

- **Comparison of embolization strategies for mixed plexiform and fistulous brain arteriovenous malformations: a computational model analysis of theoretical risks of nidus rupture.** *Journal of neurointerventional surgery*  
Jain, M. S., Telischak, N. A., Heit, J. J., Do, H. M., Massoud, T. F.  
2021
- **Gold-Nanostar-Chitosan-Mediated Delivery of SARS-CoV-2 DNA Vaccine for Respiratory Mucosal Immunization: Development and Proof-of-Principle.** *ACS nano*  
Kumar, U. S., Afjei, R., Ferrara, K., Massoud, T. F., Paulmurugan, R.  
2021
- **A Critical Appraisal of Monro's Erroneous Description of the Cerebral Interventricular Foramina: Age-Related MRI Spatial Morphometry and a Proposed New Terminology.** *Clinical anatomy (New York, N.Y.)*  
Matys, T. n., Brown, F. n., Zaccagna, F. n., Kirolos, R. W., Massoud, T. F.  
2020
- **Intranasal delivery of targeted polyfunctional gold-iron oxide nanoparticles loaded with therapeutic microRNAs for combined theranostic multimodality imaging and presensitization of glioblastoma to temozolomide.** *Biomaterials*  
Sukumar, U. K., Bose, R. J., Malhotra, M., Babikir, H. A., Afjei, R., Robinson, E., Zeng, Y., Chang, E., Habte, F., Sinclair, R., Gambhir, S. S., Massoud, T. F., Paulmurugan, et al  
2019; 218: 119342
- **The protean world of non-coding RNAs in glioblastoma.** *Journal of molecular medicine (Berlin, Germany)*  
Paulmurugan, R., Malhotra, M., Massoud, T. F.  
2019
- **A protein folding molecular imaging biosensor monitors the effects of drugs that restore mutant p53 structure and its downstream function in glioblastoma cells.** *Oncotarget*  
Paulmurugan, R., Afjei, R., Sekar, T. V., Babikir, H. A., Massoud, T. F.  
2018; 9 (30): 21495–511
- **Targeted nanoparticle delivery of therapeutic antisense microRNAs presensitizes glioblastoma cells to lower effective doses of temozolomide in vitro and in a mouse model.** *Oncotarget*  
Malhotra, M., Sekar, T. V., Ananta, J. S., Devulapally, R., Afjei, R., Babikir, H. A., Paulmurugan, R., Massoud, T. F.  
2018; 9 (30): 21478–94
- **Restoring guardianship of the genome: Anticancer drug strategies to reverse oncogenic mutant p53 misfolding.** *Cancer treatment reviews*  
Babikir, H. A., Afjei, R. n., Paulmurugan, R. n., Massoud, T. F.  
2018; 71: 19–31
- **Tailored Nanoparticle Codelivery of anti-miR-21 and anti-miR-10b Augments Glioblastoma Cell Kill by Temozolomide: Toward a "Personalized" Anti-microRNA Therapy.** *Molecular pharmaceuticals*  
Ananta, J. S., Paulmurugan, R., Massoud, T. F.  
2016; 13 (9): 3164-3175
- **A molecular imaging biosensor detects in vivo protein folding and misfolding** *JOURNAL OF MOLECULAR MEDICINE-JMM*  
Sheahan, A. V., Sekar, T. V., Chen, K., Paulmurugan, R., Massoud, T. F.  
2016; 94 (7): 799-808
- **Temozolomide-loaded PLGA nanoparticles to treat glioblastoma cells: a biophysical and cell culture evaluation** *NEUROLOGICAL RESEARCH*  
Ananta, J. S., Paulmurugan, R., Massoud, T. F.  
2016; 38 (1): 51-59
- **Nanoparticle-Delivered Antisense MicroRNA-21 Enhances the Effects of Temozolomide on Glioblastoma Cells** *MOLECULAR PHARMACEUTICS*  
Ananta, J. S., Paulmurugan, R., Massoud, T. F.  
2015; 12 (12): 4509-4517
- **Transvenous Retrograde Nidus Sclerotherapy Under Controlled Hypotension (TRENH): Hemodynamic Analysis and Concept Validation in a Pig Arteriovenous Malformation Model** *NEUROSURGERY*

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- Massoud, T. F.  
2013; 73 (2): 332-343
- **A molecularly engineered split reporter for imaging protein-protein interactions with positron emission tomography** *NATURE MEDICINE*  
Massoud, T. F., Paulmurugan, R., Gambhir, S. S.  
2010; 16 (8): 921-U123
  - **Noninvasive molecular neuroimaging using reporter genes: Part II, experimental, current, and future applications** *AMERICAN JOURNAL OF NEURORADIOLOGY*  
Massoud, T. F., Singh, A., Gambhir, S. S.  
2008; 29 (3): 409-418
  - **Noninvasive molecular neuroimaging using reporter genes: Part I, principles revisited** *AMERICAN JOURNAL OF NEURORADIOLOGY*  
Massoud, T. F., Singh, A., Gambhir, S. S.  
2008; 29 (2): 229-234
  - **Integrating noninvasive molecular imaging into molecular medicine: an evolving paradigm** *TRENDS IN MOLECULAR MEDICINE*  
Massoud, T. F., Gambhir, S. S.  
2007; 13 (5): 183-191
  - **Reporter gene imaging of protein-protein interactions in living subjects** *CURRENT OPINION IN BIOTECHNOLOGY*  
Massoud, T. F., Paulmurugan, R., De, A., Ray, P., Gambhir, S. S.  
2007; 18 (1): 31-37
  - **Molecular imaging of homodimeric protein-protein interactions in living subjects.** *FASEB journal*  
Massoud, T. F., Paulmurugan, R., Gambhir, S. S.  
2004; 18 (10): 1105-1107
  - **Molecular imaging in living subjects: seeing fundamental biological processes in a new light** *GENES & DEVELOPMENT*  
Massoud, T. F., Gambhir, S. S.  
2003; 17 (5): 545-580
  - **Laboratory evaluation of a microangioscope for potential percutaneous cerebrovascular applications** *AMERICAN JOURNAL OF NEURORADIOLOGY*  
Massoud, T. F., Murayama, Y., Vinuela, F., Utsumi, A.  
2001; 22 (2): 363-365
  - **Experimental radiosurgery simulations using a theoretical model of cerebral arteriovenous malformations** *STROKE*  
Massoud, T. F., Hademenos, G. J., De Salles, A. A., Solberg, T. D.  
2000; 31 (10): 2466-2476
  - **Can induction of systemic hypotension help prevent nidus rupture complicating arteriovenous malformation embolization?: analysis of underlying mechanisms achieved using a theoretical model** *AMERICAN JOURNAL OF NEURORADIOLOGY*  
Massoud, T. F., Hademenos, G. J., Young, W. L., Gao, E. H., Pile-Spellman, J.  
2000; 21 (7): 1255-1267
  - **Histopathologic characteristics of a chronic arteriovenous malformation in a swine model: Preliminary study** *AMERICAN JOURNAL OF NEURORADIOLOGY*  
Massoud, T. F., Vinters, H. V., CHAO, K. H., Vinuela, F., Jahan, R.  
2000; 21 (7): 1268-1276
  - **Transvenous retrograde nidus sclerotherapy under controlled hypotension (TRENSh): A newly proposed treatment for brain arteriovenous malformations-concepts and rationale** *NEUROSURGERY*  
Massoud, T. F., Hademenos, G. J.  
1999; 45 (2): 351-363
  - **Principles and philosophy of modeling in biomedical research** *FASEB JOURNAL*  
Massoud, T. F., Hademenos, G. J., Young, W. L., Gao, E. Z., Pile-Spellman, J., Vinuela, F.  
1998; 12 (3): 275-285
  - **AN EXPERIMENTAL ARTERIOVENOUS MALFORMATION MODEL IN SWINE - ANATOMIC BASIS AND CONSTRUCTION TECHNIQUE** *Annual Meeting of the American-Society-of-Neuroradiology*
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Massoud, T. F., Ji, C., Vinuela, F., Guglielmi, G., Robert, J., Duckwiler, G. R., Gobin, Y. P.  
AMER SOC NEURORADIOLOGY.1994: 1537–45

- **Correction to "Tumor Cell-Derived Extracellular Vesicle-Coated Nanocarriers: An Efficient Theranostic Platform for the Cancer-Specific Delivery of Anti-miR-21 and Imaging Agents".** *ACS nano*  
Bose, R. J., Kumar, S. U., Zeng, Y., Afjei, R., Robinson, E., Lau, K., Bermudez, A., Habte, F., Pitteri, S. J., Sinclair, R., Willmann, J. K., Massoud, T. F., Gambhir, et al  
2023
- **Correction to "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.  
2023
- **Gold-Nanostar-Chitosan-Mediated Delivery of SARS-CoV-2 DNA Vaccine for Respiratory Mucosal Immunization: Development and Proof-of-Principle (vol 15, pg 17582, 2021)** *ACS NANO*  
Kumar, U. S., Afjei, R., Ferrara, K., Massoud, T. F., Paulmurugan, R.  
2023
- **Feasibility of percutaneous dural sac puncture via a posterior trans-sacral foraminal conduit approach: a CT morphometric analysis.** *Neuroradiology*  
Dhawan, S. S., Necker, F. N., Massoud, T. F.  
2023
- **Caudolenticular Gray Bridges of the Brain: A Magnetic Resonance Imaging Study.** *Clinical anatomy (New York, N.Y.)*  
Dang, B., Necker, F. N., Dhawan, S. S., Murty, T., Massoud, T. F.  
2023
- **Time to Rectify Colorblindness in Medical Research with Standardized Cohort Reporting.** *The American journal of medicine*  
Wen, J. T., Massoud, T. F.  
2023
- **Atavistic and vestigial anatomical structures in the head, neck, and spine: an overview.** *Anatomical science international*  
Dhawan, S. S., Yedavalli, V., Massoud, T. F.  
2023
- **Feasibility of Intrathecal Therapeutic Injections in Spinal Muscular Atrophy Patients via a Percutaneous Trans-Sacral Hiatus Route: An Initial Neuroimaging Morphometric Study.** *Muscle & nerve*  
Dhawan, S. S., Trinh, A., Massoud, T. F.  
2022
- **Thoracic and Lumbosacral Spine Anatomy.** *Neuroimaging clinics of North America*  
Hashmi, S. S., Seifert, K. D., Massoud, T. F.  
2022; 32 (4): 889-902
- **Oral Cavity and Salivary Glands Anatomy.** *Neuroimaging clinics of North America*  
Famuyide, A., Massoud, T. F., Moonis, G.  
2022; 32 (4): 777-790
- **Anatomy of the Orbit.** *Neuroimaging clinics of North America*  
Reinshagen, K. L., Massoud, T. F., Cunnane, M. B.  
2022; 32 (4): 699-711
- **Anatomy of the Spinal Cord, Coverings, and Nerves.** *Neuroimaging clinics of North America*  
Hashmi, S. S., van Staaldouin, E. K., Massoud, T. F.  
2022; 32 (4): 903-914
- **Root of the Neck and Extracranial Vessel Anatomy.** *Neuroimaging clinics of North America*  
Raslan, O., Massoud, T. F., Haccin-Bey, L.  
2022; 32 (4): 851-873
- **Anatomy of Intracranial Veins.** *Neuroimaging clinics of North America*

- Kubo, M., Kuwayama, N., Massoud, T. F., Hacein-Bey, L.  
2022; 32 (3): 637-661
- **Inhaled Gold Nano-star Carriers for Targeted Delivery of Triple Suicide Gene Therapy and Therapeutic MicroRNAs to Lung Metastases: Development and Validation in a Small Animal Model.** *Advanced therapeutics*  
Liu, Y., Sukumar, U. K., Jugniot, N., Seetharam, S. M., Rengaramachandran, A., Sadeghipour, N., Mukherjee, P., Krishnan, A., Massoud, T. F., Paulmurugan, R.  
2022; 5 (8)
  - **Anatomy of the Calvaria and Skull Base.** *Neuroimaging clinics of North America*  
Matys, T., Scoffings, D. J., Massoud, T. F.  
2022; 32 (3): 447-462
  - **Anatomy of the Cerebral Cortex, Lobes, and Cerebellum.** *Neuroimaging clinics of North America*  
Vachha, B. A., Massoud, T. F., Huang, S. Y.  
2022; 32 (3): 463-473
  - **Inhaled Gold Nano-Star Carriers for Targeted Delivery of Triple Suicide Gene Therapy and Therapeutic MicroRNAs to Lung Metastases: Development and Validation in a Small Animal Model** *ADVANCED THERAPEUTICS*  
Liu, Y., Sukumar, U., Jugniot, N., Seetharam, S., Rengaramachandran, A., Sadeghipour, N., Mukherjee, P., Krishnan, A., Massoud, T. F., Paulmurugan, R.  
2022
  - **Biomimetic nanobubbles for triple-negative breast cancer targeted ultrasound molecular imaging.** *Journal of nanobiotechnology*  
Jugniot, N., Massoud, T. F., Dahl, J. J., Paulmurugan, R.  
2022; 20 (1): 267
  - **Correction to: The protean world of non-coding RNAs in glioblastoma.** *Journal of molecular medicine (Berlin, Germany)*  
Paulmurugan, R., Malhotra, M., Massoud, Z. T., Massoud, T. F.  
2022
  - **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
  - **Structural Asymmetries in Normal Brain Anatomy: A Brief Overview.** *Annals of anatomy = Anatomischer Anzeiger : official organ of the Anatomische Gesellschaft*  
Kuo, F., Massoud, T. F.  
1800: 151894
  - **BRET Sensors for Imaging Membrane Integrity of Microfluidically Generated Extracellular Vesicles.** *Methods in molecular biology (Clifton, N.J.)*  
Paulmurugan, R., Liu, Y., Sukumar, U. K., Kanada, M., Massoud, T. F.  
2022; 2525: 227-238
  - **Engineered Cell-Derived Vesicles Displaying Targeting Peptide and Functionalized with Nanocarriers for Therapeutic microRNA Delivery to Triple-Negative Breast Cancer in Mice.** *Advanced healthcare materials*  
Bose, R. J., Kumar, U. S., Garcia-Marques, F., Zeng, Y., Habte, F., McCarthy, J. R., Pitteri, S., Massoud, T. F., Paulmurugan, R.  
2021: e2101387
  - **In and around the pineal gland: a neuroimaging review.** *Clinical radiology*  
Zaccagna, F., Brown, F. S., Allinson, K. S., Devadass, A., Kapadia, A., Massoud, T. F., Matys, T.  
2021
  - **Camouflaged Hybrid Cancer Cell-Platelet Fusion Membrane Nanovesicles Deliver Therapeutic MicroRNAs to Presensitize Triple-Negative Breast Cancer to Doxorubicin.** *Advanced functional materials*  
Liu, Y., Sukumar, U. K., Kanada, M., Krishnan, A., Massoud, T. F., Paulmurugan, R.  
2021; 31 (41)
  - **A Clinical PET Imaging Tracer ([18F]DASA-23) to Monitor Pyruvate Kinase M2 Induced Glycolytic Reprogramming in Glioblastoma.** *Clinical cancer research : an official journal of the American Association for Cancer Research*  
Beinat, C., Patel, C. B., Haywood, T., Murty, S., Naya, L., Castillo, J. B., Reyes, S. T., Phillips, M., Buccino, P., Shen, B., Park, J. H., Koran, M. E., Alam, et al  
2021

- **Camouflaged Hybrid Cancer Cell-Platelet Fusion Membrane Nanovesicles Deliver Therapeutic MicroRNAs to Presensitize Triple-Negative Breast Cancer to Doxorubicin** *ADVANCED FUNCTIONAL MATERIALS*  
Liu, Y., Sukumar, U. K., Kanada, M., Krishnan, A., Massoud, T. F., Paulmurugan, R.  
2021
- **Imaging and treatment of brain tumors through molecular targeting: Recent clinical advances.** *European journal of radiology*  
Zaccagna, F., Grist, J. T., Quartuccio, N., Riemer, F., Fraioli, F., Caraco, C., Halsey, R., Aldalilah, Y., Cunningham, C. H., Massoud, T. F., Aloj, L., Gallagher, F. A.  
2021; 142: 109842
- **Initial Clinical Evaluation of [F-18]DASA-23, a PET Imaging Tracer for Evaluation of Aberrantly Expressed Pyruvate Kinase M2 in Glioblastoma**  
Beinat, C., Patel, C., Haywood, T., Naya, L., Castillo, J., Shen, B., Massoud, T., Iagaru, A., Davidzon, G., Recht, L., Gambhir, S.  
SOC NUCLEAR MEDICINE INC.2021
- **Editorial: Advanced Neuroimaging of Brain Metastases** *FRONTIERS IN NEUROLOGY*  
Vachha, B. A., Huang, S. Y., Massoud, T. F.  
2021; 12
- **Editorial: Advanced Neuroimaging of Brain Metastases.** *Frontiers in neurology*  
Vachha, B. A., Huang, S. Y., Massoud, T. F.  
2021; 12: 668310
- **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
- **High-Throughput Whole-Plate Imaging of Cells for Multiple Biological Applications.** *Methods in molecular biology (Clifton, N.J.)*  
Sukumar, U. K., Habte, F., Massoud, T. F., Paulmurugan, R.  
2021; 2274: 367-384
- **A Microfluidics-Based Scalable Approach to Generate Extracellular Vesicles with Enhanced Therapeutic MicroRNA Loading for Intranasal Delivery to Mouse Glioblastomas.** *ACS nano*  
Wang, K., Kumar, U. S., Sadeghipour, N., Massoud, T. F., Paulmurugan, R.  
2021
- **Ambiguous "Olfactory" Terms for Anatomic Spaces Adjacent to the Cribriform Plate: A Publication Database Analysis and Quest for Uniformity.** *Clinical anatomy (New York, N.Y.)*  
Bates, N. S., Massoud, T. F.  
2021
- **SARS-CoV-2 Vaccine Development: An Overview and Perspectives.** *ACS pharmacology & translational science*  
Liu, Y., Wang, K., Massoud, T. F., Paulmurugan, R.  
2020; 3 (5): 844-58
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