



Vipul Sheth, MD, PhD

Assistant Professor of Radiology (Body MRI)

 Curriculum Vitae available Online

CLINICAL OFFICE (PRIMARY)

- **Diagnostic Radiology**

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Bio

BIO

Dr. Sheth is a board-certified, fellowship-trained radiologist with Stanford Health Care Radiology. He is also an assistant professor in the Department of Radiology, Division of Body MRI at Stanford University School of Medicine.

Dr. Sheth is clinically trained in general and nuclear radiology. He has subspecialty expertise in body magnetic resonance imaging (MRI) and MRI-guided procedures such as biopsies and ablation (a minimally invasive procedure that destroys abnormal tissue). His other clinical interests include rectal cancer MRIs, pelvic floor MRIs, and positron emission tomography (PET) MRI applications for diagnosing and treating pelvic tumors. He uses advanced tools that help patients get timely, accurate answers and appropriate treatment.

Dr. Sheth has a diverse background in developing and translating MRI technologies. During his graduate research, he developed an MRI-based method to measure pH in breast tumor models. In residency, he investigated how the ultrashort echo time MRI technique in the brain can evaluate myelin (a protective sheath found around nerve fibers) in patients with cystic fibrosis. Other research interests include developing MRI-guided focal (localized) therapies that can personalize treatment and reduce morbidity risks.

Dr. Sheth is involved in multiple research projects funded by the National Institutes of Health (NIH). He has shared his research at regional, national, and international meetings, where he has won awards and moderated case panels.

Dr. Sheth has published his work in national peer-reviewed journals and served as a peer reviewer for the Journal of Magnetic Resonance Imaging, Magnetic Resonance Imaging, Molecular Imaging and Biology, and NMR in Biomedicine. His paper for IEEE Transactions on Medical Robotics and Bionics won best paper of the year in 2021.

Dr. Sheth is a member of multiple societies, including the International Society for Magnetic Resonance in Medicine, the Radiological Society of North America, the Society of Nuclear Medicine and Molecular Imaging, and the Society for Advanced Body Imaging. He is also a member of the California

Medical Association, the Pelvic Floor Disorders Consortium with the American Society of Colon and Rectal Surgeons, and the Society of Abdominal Radiology, where he is part of the Pelvic Floor Disease Focus Panel.

CLINICAL FOCUS

- Diagnostic Radiology

ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Radiology
- Member, Bio-X

HONORS AND AWARDS

- Dean's High Honors List, Case Western Reserve University (2000-2004)
- Department Stores National Merit Scholarship, Case Western Reserve University (2000-2004)
- Ohio Academic Scholarship, Case Western Reserve University (2000-2004)
- Whitaker Case Summer Research Fellow, Department of Biomedical Engineering, Case Western Reserve University (2001)
- ISMRM Education Stipend Award to Present Poster, 17th International Society for Magnetic Resonance in Medicine (ISMRM), Honolulu, Hawaii (2009)
- Student Stipend Travel Award to Present Poster, World Molecular Imaging Congress (WMIC), Montreal Canada (2009)
- First Place Poster for Akron General Medical Center, NEOMED Internal Med. Residency Research Day, Rootstown, Ohio (2013)
- AUR Scholar Program Participant, AUR Annual Meeting, Baltimore, Maryland (2014)
- ISMRM Trainee Stipend Award to Present, 23rd International Society for Magnetic Resonance in Medicine (ISMRM), Milan, Italy (2014)
- Robert R Mattrey Clinician-Scientist Award, Department of Radiology, University of California San Diego (2018)
- Member, Academy Council for Early Career Investigators in Imaging (CECI2) (2020)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, International Society for Magnetic Resonance in Medicine (2008 - present)
- Member, Radiological Society of North America (2010 - present)
- Member, California Medical Association (2013 - present)
- Member, Society for Nuclear Medicine and Molecular Imaging (2016 - present)
- Member, Society for Advanced Body Imaging (2019 - present)
- Member, Society for Abdominal Radiology (2019 - present)

PROFESSIONAL EDUCATION

- Board Certification: Nuclear Radiology, American Board of Radiology (2021)
- Board Certification: Diagnostic Radiology, American Board of Radiology (2019)
- Fellowship: Stanford University Radiology Fellowships (2019) CA
- Residency: UCSD Dept of Radiology (2018) CA
- Transition Year Residency, Akron General Medical Center, Akron, OH (2013)
- Internship: Summa Health at Akron General Internal Medicine and Preliminary Year Training (2013) OH
- Medical Education: Case Western Reserve School of Medicine (2012) OH
- Diplomate, American Board Radiology (2019)
- Body MRI Fellowship, Stanford University (2019)
- Clinician Scientist, Radiology Research Residency, University of California, San Diego (2018)

- M.D. & Ph.D., Medical Scientist Training Program, Case Western Reserve University, Cleveland, OH (2012)
- B.S.E., Biomedical Engineering, Case Western Reserve University, Cleveland, OH (2008)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My interests are in the development and translation of imaging technologies geared toward disease detection and characterization to better guide prognosis, treatment, and improve outcomes. I'm interested in supporting the development of MRI guided focal therapy methods which can personalize treatment and reduce the risk of morbidity from more invasive therapies.

Clinical Interests

- MRI for diagnosis of pelvic floor disorders
- MRI and PET/MRI to pelvic malignancies and lymph node staging.
- Whole Body MRI
- MRI guided procedures including biopsies, cryoablation, and high intensity focused ultrasound.

Translational Research Interests

- Development and translation of magnetic resonance imaging technologies to improve both diagnostics and therapeutics
- Molecular imaging and characterization of the tumor microenvironment
- Ultrashort echo time MRI applications in the body
- Developing synergistic MRI methods to complement PET in potential applications for PET/MRI

CLINICAL TRIALS

- Diabetes RElated to Acute Pancreatitis and Its Mechanisms, Recruiting
- Organ Preservation Program Using Short-Course Radiation & FOLFOXIRI in Rectal Cancer, Not Recruiting
- Study to Assess Efficacy and Safety of Cx601, Adult Allogeneic Expanded Adipose-derived Stem Cells (eASC) for the Treatment of Complex Perianal Fistula(s) in Participants With Crohn's Disease (CD), Not Recruiting

Teaching

COURSES

2024-25

- Introduction to Imaging and Image-based Human Anatomy: BIOE 220, BMP 220, RAD 220 (Win)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Elima Hussain

Publications

PUBLICATIONS

- **MR-guided focused ultrasound therapy of extra-abdominal desmoid tumors: a multicenter retrospective study of 105 patients.** *European radiology*

Düx, D. M., Baal, J. D., Bitton, R., Chen, J., Brunsing, R. L., Sheth, V. R., Rosenberg, J., Kim, K., Ozhinsky, E., Avedian, R., Ganjoo, K., Bucknor, M., Dobrotwir, et al
2023

- **Predicting treatment response for the safe non-operative management of patients with rectal cancer using an MRI-based deep-learning model**
Selby, H. M., Liu, C., Sheth, V., Napel, S., Wagner, T., Morris, A. M.
LIPPINCOTT WILLIAMS & WILKINS.2023
- **Sarcopenia Is a Risk Factor for Pelvic Organ Prolapse Independent of Age**
Sheth, V., Becker, L., Liang, T., Gurland, B., Neshatian, L.
LIPPINCOTT WILLIAMS & WILKINS.2021: S243
- **Consensus Definitions and Interpretation Templates for Magnetic Resonance Imaging of Defecatory Pelvic Floor Disorders: Proceedings of the Consensus Meeting of the Pelvic Floor Disorders Consortium of the American Society of Colon and Rectal Surgeons, the Society of Abdominal Radiology, the International Continence Society, the American Urogynecologic Society, the International Urogynecological Association, and the Society of Gynecologic Surgeons.** *AJR. American journal of roentgenology*
Gurland, B. H., Khatri, G., Ram, R., Hull, T. L., Kocjancic, E., Quiroz, L. H., Sayed, R. F., Jambhekar, K. R., Chernyak, V., Paspulati, R. M., Sheth, V. R., Steiner, A. M., Kamath, et al
2021: 1-13
- **Nonoperative Management for Rectal Cancer.** *Cancer journal (Sudbury, Mass.)*
Pollom, E. L., Sheth, V. R., Dawes, A. J., Holden, T.
2024; 30 (4): 238-244
- **Parametric response mapping of co-registered intravoxel incoherent motion magnetic resonance imaging and positron emission tomography in locally advanced cervical cancer undergoing concurrent chemoradiation therapy.** *Physics and imaging in radiation oncology*
Capaldi, D. P., Wang, J. Y., Liu, L., Sheth, V. R., Kidd, E. A., Hristov, D. H.
2024; 31: 100630
- **Phase II trial of organ preservation program using short-course radiation and FOLFOXIRI for rectal cancer (SHORT-FOX).**
Pollom, E. L., Fisher, G. A., Shelton, A., Johnson, T., Chen, C., Jackson, S., Shaheen, S., Holden, T., Bien, J., King, D., Morris, A. M., Kin, C., Dawes, et al
LIPPINCOTT WILLIAMS & WILKINS.2024
- **Application of PET/MRI in Gynecologic Malignancies.** *Cancers*
Ebrahimi, S., Lundstrom, E., Batasin, S. J., Hedlund, E., Stalberg, K., Ehman, E. C., Sheth, V. R., Iranpour, N., Loubrie, S., Schlein, A., Rakow-Penner, R.
2024; 16 (8)
- **Use of a footstool improves rectal balloon expulsion in some patients with defecatory disorders.** *Neurogastroenterology and motility*
Ulsh, L., Halawi, H., Triadafilopoulos, G., Gurland, B., Nguyen, L., Garcia, P., Sonu, I., Fernandez-Becker, N., Becker, L., Sheth, V., Neshatian, L.
2024: e14781
- **Increased Grades of Rectal Intussusception: Role of Decline in Pelvic Floor Integrity and Association with Dyssynergic Defecation.** *The American journal of gastroenterology*
Neshatian, L., Triadafilopoulos, G., Wallace, S., Jawahar, A., Sheth, V., Shen, S., Gurland, B.
2023
- **Parametric Response Mapping of Co-Registered Ivm MRI and PET to Identify Radioresistant Sub-Volumes in Locally Advanced Cervical Carcinoma Undergoing CCRT.** *International journal of radiation oncology, biology, physics*
Capaldi, D. P., Wang, J. Y., Liu, L., Sheth, V., Kidd, E. A., Hristov, D. H.
2023; 117 (2S): e648
- **Anorectal manometry for the diagnosis of pelvic floor disorders in patients with hypermobility spectrum disorders and hypermobile Ehlers-Danlos syndrome.** *BMC gastroenterology*
Zhou, W., Zikos, T. A., Halawi, H., Sheth, V. R., Gurland, B., Nguyen, L. A., Neshatian, L.
2022; 22 (1): 538
- **Predictive Value of Clinical Complete Response after Chemoradiation for Rectal Cancer**
Liu, C., Boncompagni, A. A., Perrone, K., Agarwal, A., Hur, D. G., Lopez, I., Sheth, V., Morris, A. M.

LIPPINCOTT WILLIAMS & WILKINS.2022: S51-S52

- **Rectosigmoid Cancer-Rectal Cancer or Sigmoid Cancer?** *American journal of clinical oncology*
Hui, C., Baclay, R., Liu, K., Sandhu, N., Loo, P., von Eyben, R., Chen, C., Sheth, V., Vitzthum, L., Chang, D., Pollom, E.
2022
- **MRI biomarker of muscle composition is associated with severity of pelvic organ prolapse.** *Techniques in coloproctology*
Neshatian, L., Lam, J. P., Gurland, B. H., Liang, T., Becker, L., Sheth, V. R.
2022
- **Editorial for "Amide Proton Transfer-Weighted Imaging Combined With Intravoxel Incoherent Motion for Evaluating Microsatellite Instability in Endometrial Cancer".** *Journal of magnetic resonance imaging : JMRI*
Sheth, V. R.
2022
- **Phase II trial of organ preservation program using short-course radiation and folfoxiri for rectal cancer (SHORT-FOX)**
Pollom, E. L., Shelton, A., Fisher, G. A., Bien, J., King, D., Johnson, T., Chen, C., Shaheen, S., Chong, C., Vitzthum, L., Kirilcuk, N., Morris, A. M., Kin, et al
LIPPINCOTT WILLIAMS & WILKINS.2022
- **Establishment of Patient-derived Succinate Dehydrogenase-deficient Gastrointestinal Stromal Tumor Models For Predicting Therapeutic Response.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Yebra, M., Bhargava, S., Kumar, A., Burgoyne, A. M., Tang, C., Yoon, H., Banerjee, S., Aguilera, J., Cordes, T., Sheth, V., Noh, S., Ustoy, R., Li, et al
2021
- **Adult residual rectourethral fistula and diverticulum presenting decades after imperforate anus repair: acase report.** *Journal of medical case reports*
McShane, E. K., Gurland, B., Sheth, V. R., Bruzoni, M., Enemchukwu, E.
2021; 15 (1): 370
- **Extending Reach Inside the MRI Bore: A 7-DOF, Low-Friction, Hydrostatic Teleoperator**
S, F., RD, I, V, S., BL, D., MR, C.
IEEE Transactions on Medical Robotics and Bionics .
2021
- **Evaluation of cortical bone perfusion using dynamic contrast enhanced ultrashort echo time imaging: a feasibility study.** *Quantitative imaging in medicine and surgery*
Wan, L., Wu, M., Sheth, V., Shao, H., Jang, H., Bydder, G., Du, J.
2019; 9 (8): 1383-1393
- **Multimodal imaging assessment and histologic correlation of the female rat pelvic floor muscles' anatomy.** *Journal of anatomy*
Sheth, V. R., Duran, P., Wong, J., Shah, S., Du, J., Christman, K. L., Chang, E. Y., Alperin, M.
2019; 234 (4): 543-550
- **Data-driven self-calibration and reconstruction for non-cartesian wave-encoded single-shot fast spin echo using deep learning.** *Journal of magnetic resonance imaging : JMRI*
Chen, F. n., Cheng, J. Y., Taviani, V. n., Sheth, V. R., Brunsing, R. L., Pauly, J. M., Vasanawala, S. S.
2019
- **Near-silent distortionless DWI using magnetization-prepared RUFIS.** *Magnetic resonance in medicine*
Yuan, J. n., Hu, Y. n., Menini, A. n., Sandino, C. M., Sandberg, J. n., Sheth, V. n., Moran, C. J., Alley, M. n., Lustig, M. n., Hargreaves, B. n., Vasanawala, S. n.
2019
- **Direct magnitude and phase imaging of myelin using ultrashort echo time (UTE) pulse sequences: A feasibility study.** *Magnetic resonance imaging*
He, Q., Ma, Y., Fan, S., Shao, H., Sheth, V., Bydder, G. M., Du, J.
2017; 39: 194-199
- **Inversion recovery ultrashort echo time magnetic resonance imaging: A method for simultaneous direct detection of myelin and high signal demonstration of iron deposition in the brain - A feasibility study.** *Magnetic resonance imaging*

- Sheth, V. R., Fan, S., He, Q., Ma, Y., Annese, J., Switzer, R., Corey-Bloom, J., Bydder, G. M., Du, J.
2017; 38: 87-94
- **Magnetic resonance imaging of myelin using ultrashort Echo time (UTE) pulse sequences: Phantom, specimen, volunteer and multiple sclerosis patient studies.** *NeuroImage*
Sheth, V., Shao, H., Chen, J., Vandenberg, S., Corey-Bloom, J., Bydder, G. M., Du, J.
2016; 136: 37-44
 - **Chapter 2 Positron Emission Tomography – Magnetic Resonance Imaging** *Molecular Imaging: Principles and Practice*
F, M., RL, B., VL, S., A, I.
2016
 - **Measurement of T1 of the ultrashort T2* components in white matter of the brain at 3T.** *PloS one*
Du, J., Sheth, V., He, Q., Carl, M., Chen, J., Corey-Bloom, J., Bydder, G. M.
2014; 9 (8): e103296
 - **Detection of in vivo enzyme activity with CatalyCEST MRI.** *Magnetic resonance in medicine*
Yoo, B., Sheth, V. R., Howison, C. M., Douglas, M. J., Pineda, C. T., Maine, E. A., Baker, A. F., Pagel, M. D.
2014; 71 (3): 1221-30
 - **Measuring in vivo tumor pH with CEST-FISP MRI.** *Magnetic resonance in medicine*
Sheth, V. R., Li, Y., Chen, L. Q., Howison, C. M., Flask, C. A., Pagel, M. D.
2012; 67 (3): 760-8
 - **Improved pH measurements with a single PARACEST MRI contrast agent.** *Contrast media & molecular imaging*
Sheth, V. R., Liu, G., Li, Y., Pagel, M. D.
2012; 7 (1): 26-34
 - **Imaging in vivo extracellular pH with a single paramagnetic chemical exchange saturation transfer magnetic resonance imaging contrast agent.** *Molecular imaging*
Liu, G., Li, Y., Sheth, V. R., Pagel, M. D.
2012; 11 (1): 47-57
 - **Chapter 24: CEST & PARACEST Agents for Imaging Cancer Biomarkers** *Molecular Imaging Probes for Cancer Research*
VR, S., MD, P.
2012
 - **A self-calibrating PARACEST MRI contrast agent that detects esterase enzyme activity.** *Contrast media & molecular imaging*
Li, Y., Sheth, V. R., Liu, G., Pagel, M. D.
2010; 6 (4): 219-28
 - **An amine-derivatized, DOTA-loaded polymeric support for Fmoc Solid Phase Peptide Synthesis.** *Tetrahedron letters*
Yoo, B., Sheth, V. R., Pagel, M. D.
2009; 50 (31): 4459-4462
 - **Monitoring infection and inflammation in murine models of cystic fibrosis with magnetic resonance imaging.** *Journal of magnetic resonance imaging : JMRI*
Sheth, V. R., van Heeckeren, R. C., Wilson, A. G., van Heeckeren, A. M., Pagel, M. D.
2008; 28 (2): 527-32