

## **CURRICULUM VITAE**

### **I. Personal Information**

Name: **Vipul R. Sheth, MD, PhD**  
Current Position: Assistant Professor of Radiology, Body MRI Division  
Current Institution: Stanford University School of Medicine

### **II. Educational Background**

#### **Colleges & Universities Attended**

05/2004 BSE in Biomedical Engineering, May 2004, summa cum laude  
Concentration: Polymer Biomaterials, Case Western Reserve University

01/2011 PhD in Biomedical Engineering, Case Western Reserve University  
Advisor: Mark D. Pagel, PhD.

05/2012 MD, Case Western Reserve University

#### **Residency and Fellowship Training**

07/2018-06/2019 Fellowship, Body MRI, Stanford University

07/2013-06/2018 Radiology Research Track Resident, Department of Radiology  
University of California, San Diego  
CSRFP Chief Resident from 07/2017 to 06/2018  
Completed 16-month Dual Certification Pathway in Nuclear and  
Diagnostic Radiology

07/2012-06/2013 Transition Year Residency, Akron General Medical Center, Akron, OH

#### **Board Certification and License**

9/2021 Certification in Nuclear Radiology from American Board of Radiology

10/2019 Diplomate of American Board of Radiology

A135506 Physician and Surgeon License, Medical Board of California

### **III. Professional Appointments**

08/2019-Present Assistant Professor of Radiology, Body MRI Division, Stanford  
University

07/2018-06/2019 Body MRI Fellow and Clinical Instructor, Stanford University

06/2008-08/2010 Visiting Scholar, Biomedical Engineering, Contrast Agent Molecular Engineering Laboratory, University of Arizona

#### Other Positions

06/2003-08/2003 Biomedical Engineering Summer Internship Program, Laboratory of Cell Biology, National Cancer Institute National Institutes of Health, Bethesda, MD  
Advisor: Sriram Subramaniam, Ph.D.

06/2002-8/2002 Undergraduate Summer Research Program, Biomedical Engineering, Cancer Targeted Drug Delivery Laboratory, Case Western Reserve University, Cleveland, OH

06-08/2000-2001 Research Intern, Biomedical Engineering Group, Lerner Research Institute, Cleveland Clinic, Cleveland, OH

#### IV. Honors and Awards

2001 Whitaker Case Summer Research Fellow, Biomedical Engineering, CWRU  
2000-2004 Dean's High Honors List  
2000-2004 Ohio Academic Scholarship  
2000-2004 Department Stores National Merit Scholarship  
2009 ISMRM Education Stipend Award to present at 17<sup>th</sup> ISMRM, Honolulu, Hawaii  
2009 Student Stipend Travel Award to present at WMIC, Montreal Canada  
2013 First place poster for Akron General Medical Center, NEOMED Internal Med. Residency Research Day, Rootstown, Ohio  
2014 AUR Scholar Program Participant, AUR Annual Meeting, Baltimore, Maryland  
2014 ISMRM Trainee Stipend Award to present at 23<sup>rd</sup> ISMRM, Milan, Italy  
2018 Robert R. Mattrey Clinician-Scientist Award, Radiology, UC San Diego  
2020 Academy Council for Early Career Investigators in Imaging (CECI2) class of 2020

#### V. Scholarly Publications

##### Peer-reviewed journal articles (original research) - Published

1. Yebra M, Bhargava S, Kumar A, Burgoyne A, Tang C, Yoon H, Banerjee S, Aguilera J, Cordes T, **Sheth V** et al. "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* 2022 Jan; 28 (1): 187–200. PMID 34426440.
2. Frishman S, Ings RD, **Sheth V**, Daniel BL, Cutkosky MR: Extending Reach Inside the MRI Bore: A 7-DOF, Low-Friction, Hydrostatic Teleoperator. *IEEE Transactions on Medical Robotics and Bionics* 2021; 3:701–713.

3. Chen, F, Cheng JY, Taviani V, **Sheth V**, Brunsing, RL, Paul JM, Vasanaawala, SS. Data-driven self-calibration and reconstruction for non-cartesian wave-encoded single-shot fast spin echo using deep learning. *J Magn Reson Imaging*. 2020 Mar; 51(3):841-853. PMID 31322799
4. Yuan J, Hu Y, Menini A, Sandino CM, Sandberg J, **Sheth V**, Moran CJ, Alley M, Lustig M, Hargreaves B, Vasanaawala S. Near-silent distortionless DWI using magnetization-prepared RUFIS. *Magn Reson Med*. 2019 Nov 29. PMID 31782557
5. Wan L, Wu M, **Sheth V**, Shao H, Jang H, Bydder G, Du J. Evaluation of cortical bone perfusion using dynamic contrast enhanced ultrashort echo time imaging: a feasibility study. *Quant Imaging Med Surg*. 2019 Aug; 9(8): 1383-1393. PMID 31559167.
6. **Sheth VR**, Duran P, Wong J, Shah S, Du J, Christman K, Chang E, Alperin M. Multimodal Imaging Assessment and Histologic Correlation of the Female Rat Pelvic Floor Muscles' Anatomy. *J Anatomy*. 2019 Feb 10. PMID 30740685
7. He Q, Ma Y, Fan S, Shao H, **Sheth V**, Bydder GM, Du J. Direct magnitude and phase imaging of myelin using ultrashort echo time (UTE) pulse sequences: A feasibility study. *Magn Reson Imaging*. 2017 Jun; 39:194-199. PMID: 28219648
8. **Sheth VR**, Fan S, He Q, Ma Y, Annese J, Switzer R, Corey-Bloom J, Bydder GM, Du J. 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. *Magn Reson Imaging*. 2017 May; 38:87-94. PMID: 28038965
9. **Sheth VR**, Shao H, Chen J, Vandenberg S, Corey-Bloom J, Bydder GM. Magnetic Resonance Imaging of Myelin Using Ultrashort Echo Time (UTE) Pulse Sequences: Phantom, Specimen, Volunteer and Multiple Sclerosis Patient Studies. *Neuroimage*. 2016 Aug 1; 136:37-44. PMID: 275155128
10. Du J, **Sheth VR**, He Q, Carl M, Corey-Bloom J, Ellisman M, Bydder GM. Measurement of the T1 of Ultrashort T2\* Components in White Matter of the Brain at 3T. *PLoS One*. 2014 Aug 5; 9(8): e103296. PMID: 25093859
11. Yoo B, **Sheth VR**, Howison CM, Douglas MJK, Pineda CT, Maine EA, Baker AF, Pagel MD. Detection of in vivo enzyme activity with CatalyCEST MRI. *Magnetic Resonance in Medicine*. 2014 Mar; 71: 1221-30. PMID: 23640714
12. **Sheth VR**, Liu G, Li Y, Pagel MD. Improved pH measurements with a single PARACEST MRI contrast agent. *Contrast Media Mol Imaging*. 2012 Jan-Feb; 7(1): 26-34. PMID: 22344877
13. **Sheth VR**, Li Y, Chen LQ, Howison CM, Flask CA, Pagel MD. Measuring in vivo tumor pH with CEST-FISP MRI. *Magnetic Resonance in Medicine*. 2012 Mar; 67(3): 760-8. PMID: 22028287
14. Liu G, Li Y, **Sheth VR**, Pagel MD. Imaging In Vivo Extracellular pH with a Single Paramagnetic Chemical Exchange Saturation Transfer. *Magnetic Resonance Imaging Contrast Agent. Mol Imaging*. 2012 Feb; 11(1): 47-57. PMID: 22418027
15. Li Y, **Sheth VR**, Liu G, Pagel MD. A self-calibrating PARACEST MRI contrast agent that detects esterase enzyme activity. *Contrast Media Mol Imaging*. 2011 Jul-Aug; 6(4): 219-228. PMID: 21861282
16. Yoo B, **Sheth VR**, Pagel MD. An amine-derivatized, DOTA-loaded polymeric support for Fmoc Solid Phase Peptide Synthesis. *Tetrahedron Lett*. 2009 Aug; 50(31): 4459-4462. PMID 20161272

17. **Sheth VR**, van Heeckeren RC, Wilson AG, van Heeckeren AM, Pagel, MD. Monitoring Infection and Inflammation in Murine Models of Cystic Fibrosis with Magnetic Resonance Imaging. *J Magn Reson Imaging*. 2008 Aug; 28(2): 527-532. PMID 18666218.

#### **Peer-reviewed journal articles (original research) – In Press or Accepted**

1. Neshatian L, Lam JP, Gurland B, Liang T, Becker L, **Sheth VR**, MRI Biomarker of Sarcopenia is a Predictor of Pelvic Organ Prolapse. *Techniques in Coloproctology*, accepted with revisions 3/5/1011.

#### **Peer-Reviewed Publications (Other)**

1. Gurland et al. 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*. 2021 Oct; 217(4): 800-812. PMID 34505543
2. McShane EK, Gurland B, **Sheth VR**, Bruzoni M, Enemchukwu E. Adult residual rectourethral fistula and diverticulum presenting decades after imperforate anus repair: a case report. *J Med Case Rep*. 2021 Jul 15;15(1):370. doi: 10.1186/s13256-021-02921-3. PMID: 34261520

#### **Book Chapters**

1. Moradi F, Brunsing RL, **Sheth VR**, Jagaru A. “Chapter 2 Positron Emission Tomography – Magnetic Resonance Imaging.” *Molecular Imaging: Principles and Practice*. Eds. Ross BD, Gambhir SS, Academic Press 2<sup>nd</sup> ed. Vol 1. Aug 9, 2021, ISBN: 978-0-12-820635-5
2. **Sheth VR**, Pagel, MD. “Chapter 24: CEST & PARACEST Agents for Imaging Cancer Biomarkers.” *Molecular Imaging Probes for Cancer Research*. Ed. Xiaoyuan Chen. World Scientific. 1<sup>st</sup> ed. April 28, 2012 ISBN-10: 9814293679.

#### **Abstracts not published in other forms – N/A**

#### **VI. Invited Presentations**

##### **National or Regional Meetings**

1. **Sheth, VR**, ‘Amateur to Expert Overnight – Transitioning to Faculty,’ Clinician Scientist Radiology Research Program Workshop, San Diego, CA, Nov 9, 2021 6 pm.
2. **Sheth V**, Becker L, Liang T, Gurland B, Neshatian L. Sarcopenia is a Risk Factor for Pelvic Organ Prolapse Independent of Age. *The American Journal of Gastroenterology*, Oct 2021; 116: S243. This presentation won Outstanding Poster Presenter award (Neshatian L).
3. **Sheth, VR**, Multidisciplinary Team Approach to Complex Pelvic Floor Cases – Get the Radiologic and Surgical Perspective! SAR Pelvic Floor Dysfunction Disease Focused Panel. Stanford Medicine, October 26, 2021, 4 PM CT.

4. **Sheth, VR**, MRI Imaging of IBD, IBD Group, Stanford Medicine, October 20, 2021
5. **Sheth VR**, MRI of the Pelvic Floor, Female Pelvic Medicine and Reconstructive Surgery Grand Rounds, Stanford Medicine, December, 13, 2019.
6. Northern California Genitourinary Malignancy Education Conference: Discussant as radiologist for tumor boards on kidney cancers, bladder cancer, and prostate cancer, October 19, 2019.
7. **Sheth VR**, Diwakar S, Litman G. Dobutamine induced transient neuroendocrine cardiomyopathy. Poster Presentation at NEOMED Internal Medicine Residency Research Day, Rootstown, Ohio, May 16, 2013.
  - a. Received 1<sup>st</sup> Place Prize among posters from Akron General Medical Center
  - b. Also presented at Akron General Scientific Session, Akron, Ohio, June 6, 2013

### **International Meetings**

1. Duex D, **Sheth V**, Brunsing R, Ganjoo K, Avedian R, Bitton R, Ghanouni P. MR-guided high intensity focused ultrasound of extra-abdominal desmoid tumors a retrospective study of 61 patients. ISMRM 31<sup>st</sup> Annual Meeting, London, England, UK, May 12, 2022 1545 GMT.
2. Hong C, Bahrami N, **Sheth V**, Vasanaawala S. Prospective Evaluation of Machine Learning Prescription of Cardiac MRI Planes in Children with Congenital Heart Disease. ISMRM 31<sup>st</sup> Annual Meeting, London, England, UK, May 10, 2022 1645 GMT.
3. Sharma A, Lei K, Vasanaawala S, **Sheth V**. Rectal Cancer MRI Motion Quality Assessment using a Convolutional Neural Network. ISMRM 31<sup>st</sup> Annual Meeting, London, England, UK, May 09, 2022 1700 GMT.
4. Jawahar A, Subbaiah P, **Sheth V**. Role of Puborectalis thickness measurement in the assessment of pelvic floor dysfunction and its correlation with HMO classification. ISMRM 31<sup>st</sup> Annual Meeting, London, England, UK, May 09, 2022 9:15 GMT.
5. Capaldi D, Wang JY, **Sheth V**, Kidd E, Hristov D. IVIM MRI and PET in Locally Advanced Cervical Carcinoma undergoing Concurrent Chemoradiation Therapy. ISMRM 31<sup>st</sup> Annual Meeting, London, England, UK, May 09, 2022 9:15 GMT.
6. Agely A, **Sheth V**, Ghanouni P, Brunsing R, MR Guided Percutaneous Cryoablation of Extra-abdominal Desmoid Tumors: An Institutional Experience. ISMRM Virtual Conference, May 15-20 2021.
7. Lam JP, Neshatian L, Gurland B, **Sheth V**, MRI-Based Fat Fraction of Psoas and Puborectalis Muscle Increases with Severity of Rectal Prolapse. ISMRM Virtual Conference, May 15-20 2021.
8. Syed AB, Jawahar A, **Sheth VR**, Reduced field-of-view versus conventional pelvic diffusion-weighted imaging in rectal cancer. ISMRM Virtual Conference, Aug 8-14 2020.
9. Jawahar A, Subbaiah P, **Sheth VR**. Levator hiatus width measurement and its correlation with pelvic floor dysfunction. ISMRM Virtual Conference, Aug 8-14 2020.
10. **Sheth VR**, Shao H, Chen J, Corey-Bloom J, Du J, Bydder, GM. Ultrashort Echo Time (UTE) Imaging of Myelin: T2\* Analysis. Power Pitch Presentation at ISMRM, Toronto, Canada, June 3, 2015.
11. **Sheth VR**, Annese J, Shao H, He Q, Corey-Bloom J, Bydder GM, Du J. Simultaneous Imaging of Myelin and Iron using Ultrashort Echo Time (UTE) MRI, Poster Presentation at ISMRM, Toronto, Canada, June 3, 2015.

12. **Sheth VR**, He Q, Bydder GM, Corey-Bloom J, Du J. In Vivo Imaging of Myelin Using Ultrashort Echo Time (UTE) Sequences at 3T. Oral Presentation at RSNA 2014, Chicago, Illinois, Nov 30 – Dec 5, 2014.
13. **Sheth VR**, He Q, Saberi S, Vandenberg S, Bydder GM, Du J. Ultrashort Echo Time (UTE) Imaging in Multiple Sclerosis. Oral Presentation at ISMRM, Milan, Italy, May 15, 2014.
14. **Sheth VR**, He Q, Girard OM, Mattrey RF, Bydder GM, Du J. Cortical Bone Perfusion Assessment using Inversion Recovery Ultrashort TE Imaging. Oral Presentation at ISMRM, Milan, Italy, May 12, 2014.
15. **Sheth VR**, Li Y, Chen LQ, Howison CA, Pagel MD. Measuring in vivo tumor pHe with a PARACEST MRI contrast agent. Poster Presentation at the ISMRM, Montreal, Canada, May 10, 2011.
16. **Sheth VR**, Li Y, Pagel MD. Validation of pH measurements determined from a single PARACEST MRI contrast agent. Poster Presentation at World Molecular Imaging Congress Meeting, Montreal, Canada, September 26, 2009. Student Stipend Travel Award and abstract published in Journal of Molecular Imaging and Biology
17. **Sheth VR**, Liu G, Li Y, Pagel MD. Towards the Development of a Single PARACEST MRI contrast agent for tumor pH measurements. Poster Presentation at ISMRM, Honolulu, HI, USA, April 22, 2009. Awarded ISMRM Educational Stipend
18. **Sheth VR**, Liu G, Li Y, Pagel MD. Development of a Single PARACEST MRI contrast agent for tumor pH measurements. Poster Presentation at MRI of Cancer Workshop, ISMRM, Nice, France, September 27, 2008.
19. **Sheth VR**, Li Y, Liu G, Pagel MD. In vivo Measurements of Tumor Extracellular pH with a Single PARACEST MRI Contrast Agent. Poster Presentation at World Molecular Imaging Congress Meeting, Nice, France, September 25, 2008.
20. **Sheth VR**, Shah T, Flask CA, Liu G, Ali M, Pagel MD. In vivo PARACEST MRI: Overcoming Challenges of Temporal Resolution, Sensitivity, and Quantification. Poster Presentation at World Molecular Imaging Congress Meeting, Nice, France, September 25, 2008.
21. Li Y, **Sheth VR**, Liu G, Pagel MD. A self-calibrating PARACEST MRI contrast agent that detects esterase enzyme activity. Poster Presentation at the ISMRM, Montreal, Canada, May 10, 2011.
22. Chen LQ, **Sheth VR**, Howison CA, Kuo PH, Pagel MD. Measuring in vivo tumor pHe with a DIACEST MRI contrast agent. Poster Presentation at the ISMRM, Montreal, Canada, May 10, 2011.
23. Yoo B, **Sheth VR**, Sundaram AV, Ali MM, Pagel MD. Detection of urokinase Plasminogen Activator enzyme activity with PARACEST MRI. Poster Presentation at World Molecular Imaging Congress Meeting, Montreal, Canada, September 26, 2009. Abstract published in Journal of Molecular Imaging and Biology
24. Yoo B, **Sheth VR**, Raam MS, Pagel MD. Enzyme-Responsive PARACEST MRI Contrast Agents That Assess Subsets of the Human Degradome. Poster Presentation at ISMRM, Berlin Germany, May 23, 2007.
25. **Sheth VR**, Pagel MD. Longitudinal MRI Evaluations of Lung Inflammation within Cystic Fibrosis Mouse Models. Poster Presentation at ISMRM, Berlin Germany, May 19, 2007.

## VII. FUNDING

### Current/Pending Funding - None

### Prior Funding

- Title: Assessments of Tumor Extracellular pH with PARACEST MRI
  - Source of Funding: Congressionally Directed Medical Research Programs
  - Role: Principal Investigator
  - Dates: 10/2008-12/2011

## VIII. Public and Professional Service

### Editorial Service

- Peer Reviewer for NMR in Biomedicine, 2013
- Peer Reviewer for Molecular Imaging and Biology, 2020
- Peer Reviewer for Journal of Magnetic Resonance Imaging, 2021-2022

### Professional Societies

- 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 Abdominal Radiology 2019-Present
  - Member of Pelvic Floor Disease Focus Panel 2021-Present
- Member, Society for Advanced Body Imaging 2019-Present
- Pelvic Floor Disorders Consortium, (ASCRS) 2019-2020