



Luyao Shen, MD

Clinical Associate Professor, Radiology

CLINICAL OFFICE (PRIMARY)

- **Dept Of Radiology**

300 Pasteur Dr

MC 5105

Stanford, CA 94305

Tel (650) 723-6855

Fax (650) 723-6036

Bio

CLINICAL FOCUS

- Genitourinary Imaging
- Urology Imaging
- Gynecology Imaging
- Body Imaging

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Radiology

ADMINISTRATIVE APPOINTMENTS

- Associate Medical Director, Cancer Radiology, (2025- present)
- Co-Medical Director, Point of Care Ultrasound, (2021- present)

HONORS AND AWARDS

- Peer Review Excellence Award, Abdominal Radiology, Abdominal Radiology (Journal) (2023)
- RSNA educational exhibit Cum Laude award, Radiological Society of North America (RSNA) (2023)
- SAR Best Overall Paper, Roscoe E. Miller Award, Society of Abdominal Radiology (SAR) (2023)
- Selected for Council of Early Career Investigators in Imaging (CECI-2), Society of Radiologists in Ultrasound (SRU) (2023)
- SAR educational exhibit Cum Laude award, Society of Abdominal Radiology (SAR) (2022)
- Selected for the AUR Academic Faculty Development Program, Association of University Radiologists (AUR) (2022)
- Selected for the Stanford Junior Leadership Bootcamp Series, Stanford Office of Faculty Development and Diversity (OFDD) (2022)
- Selected for the Stanford Medicine Physician Leadership Certification Program (SPLC), Stanford Office of Faculty Development and Diversity (OFDD) (2022)
- ARRS educational exhibit Certificate of Merit, American Roentgen Ray Society (ARRS) (2020)
- SAR educational exhibit Certificate of Merit, Society of Abdominal Radiology (SAR) (2020)

- RSNA educational exhibit Certificate of Merit, Radiological Society of North America (RSNA) (2014)
- Alpha Omega Alpha Honor Medical Society, University of Cincinnati College of Medicine (2011)
- Distinguished Honors Scholar, University of Cincinnati Honors Program (2008)
- Phi Beta Kappa Society, University of Cincinnati (2008)
- Summa Cum Laude, University of Cincinnati (2008)
- University of Cincinnati College of Medicine ROSE early acceptance program, University of Cincinnati College of Medicine (2006)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate editor, Abdominal Radiology (NY) (2023 - present)
- Co-chair, Society of Radiologists in Ultrasound (SRU) Early Career Interest Group (2023 - present)
- Editorial board member, American Journal of Kidney Disease (AJKD) (2023 - present)
- Member, Society of Abdominal Radiology (SAR) Scientific Program Committee (2023 - present)
- Co-chair (since 2024); chair of research committee (2022-2024), member (since 2022), Society of Abdominal Radiology (SAR) Advanced Ultrasound Techniques committee (2022 - present)
- Member, Society of Radiologists in Ultrasound (SRU) Research Committee (2022 - present)
- Member, Society of Abdominal Radiology (SAR) Disease Focused Panel (DFP) Renal Cell Carcinoma (2022 - present)
- Member, Society of Abdominal Radiology (SAR) Disease Focused Panel (DFP) Endometriosis (2022 - present)
- Member, steering committee, Society of Abdominal Radiology (SAR) Disease Focused Panel (DFP) Uterine and Ovarian Cancer (2022 - present)
- Peer reviewer, RadioGraphics (2022 - present)
- Peer reviewer, American Journal of Roentgenology (AJR) (2022 - present)
- Member, Society of Abdominal Radiology (SAR) Disease Focused Panel (DFP) Pelvic Floor Dysfunction (2021 - present)
- Member, Society of Radiologists in Ultrasound (SRU) (2021 - present)
- Editorial board member, European Journal of Radiology Open (EJRO) (2021 - 2023)
- Member, Society of Abdominal Radiology (SAR) International Task Force Committee (2021 - 2023)
- Member, American College of Radiology (ACR) (2019 - present)
- Member, Society of Abdominal Radiology (SAR) (2019 - present)
- Peer reviewer, European Journal of Radiology (2019 - 2020)
- Peer reviewer, Abdominal Radiology (NY) (2018 - present)
- Member, Radiological Society of North America (RSNA) (2013 - present)

PROFESSIONAL EDUCATION

- Internship: UC Irvine Dept of Internal Medicine (2013) CA
- Fellowship: UCLA Radiology Fellowships (2018) CA
- Residency: UCLA Radiology Residency (2017) CA
- Medical Education: University of Cincinnati College of Medicine Registrar (2012) OH
- Board Certification: Diagnostic Radiology, American Board of Radiology (2018)

COMMUNITY AND INTERNATIONAL WORK

- RAD-AID Radiology Serving the World, China

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

GU and Gyn clinical imaging

Publications

PUBLICATIONS

- **Benign Lesions Scored as O-RADS US v2022 4 and 5 Categories: Prevalence and Morphologic Analysis.** *Radiology*
Jha, P., Sadowski, E. A., Gupta, A., Maturen, K. E., Patel-Lippmann, K. K., Zafar, H. M., Kamaya, A., Antil, N., Guo, Y., Barroilhet, L. M., Shen, L.
2026; 319 (2): e252310
- **Qualitative assessment of hepatic steatosis on modern grayscale ultrasound: more accurate than previously thought?** *Abdominal radiology (New York)*
Shen, L., Patel, R., Negrete, L., Shon, A., Lemieux, S., Liang, T., Altmayer, S., Jha, P., Kamaya, A.
2025
- **Development of a Deep Learning Model for Classification of Hepatic Steatosis from Clinical Standard Ultrasound.** *Ultrasound in medicine & biology*
Kaffas, A. E., Bhatraju, K. C., Vo-Phamhi, J. M., Tiyyarattanachai, T., Antil, N., Negrete, L. M., Kamaya, A., Shen, L.
2024
- **The Ovarian-Adnexal Reporting and Data System (O-RADS) US Score Effect on Surgical Resection Rate.** *Radiology*
Shen, L., Sadowski, E. A., Gupta, A., Maturen, K. E., Patel-Lippmann, K. K., Zafar, H. M., Kamaya, A., Antil, N., Guo, Y., Barroilhet, L. M., Jha, P.
2024; 313 (1): e240044
- **World Health Organization (WHO) 2022 Classification Update: Radiologic and Pathologic Features of Papillary Renal Cell Carcinomas.** *Academic radiology*
Shen, L., Yoon, L., Mullane, P. C., Liang, T., Tse, J. R.
2024
- **Beta-Catenin-Mutated Hepatocellular Adenomas at Hepatobiliary Phase MRI: A Systematic Review and Meta-Analysis** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Shen, L., Altmayer, S., Tse, J. R.
2024
- **Beta-Catenin-Mutated Hepatocellular Adenomas at Hepatobiliary Phase MRI: A Systematic Review and Meta-Analysis.** *Journal of magnetic resonance imaging : JMIR*
Shen, L., Altmayer, S., Tse, J. R.
2024
- **Establishing a Point-of-Care Ultrasound (POCUS) Program: An Institutional Approach for Developing a POCUS Program Infrastructure.** *Journal of the American College of Radiology : JACR*
Shen, L., Lobo, V. E., Cordova, D., Larson, D. B., Kamaya, A.
2023
- **Risk of malignancy in T1-hyperintense Bosniak version 2019 class II and IIF cystic renal masses.** *Abdominal radiology (New York)*
Shen, L., Tse, J. R., Lemieux, S., Yoon, L., Mullane, P. C., Liang, T., Davenport, M. S., Pedrosa, I., Silverman, S. G.
2023
- **Diagnostic performance of the "drooping" sign in CT diagnosis of exophytic renal angiomyolipoma.** *Abdominal radiology (New York)*
Shen, L., Nawaz, R., Tse, J. R., Negrete, L. M., Lubner, M. G., Toia, G. V., Liang, T., Wentland, A. L., Kamaya, A.
2023
- **Outcomes of Bosniak Classification Version 2019 Class IIF Cystic Renal Masses at Imaging Surveillance.** *AJR. American journal of roentgenology*
Shen, L., Yoon, L., Chung, B. I., Kamaya, A., Tse, J. R.
2022

- **Predictive value and prevalence of refractive edge shadow in diagnosis of ovarian dermoids.** *Abdominal radiology (New York)*
Shen, L., Tse, J. R., Negrete, L. M., Lo, E., Yoon, L., Kamaya, A.
2022
- **Clinical and ultrasound features of dermoid-associated adnexal torsion.** *Abdominal radiology (New York)*
Shen, L., Tse, J. R., Negrete, L. M., Flory, M. N., Yoon, L., Kamaya, A.
2022
- **Site-specific limitations of ctDNA in PDAC surveillance: imaging detects pulmonary and local recurrence missed by liquid biopsy.** *Abdominal radiology (New York)*
Elsherif, S. B., Shen, L., Yoon, L., Kamaya, A., Tse, J. R.
2026
- **Incidental Adnexal Lesions: CT Diagnosis and Interreader Agreement.** *Radiology*
Guo, Y., Sadowski, E. A., Lan, Z., Kim, N., Liu, X., Maheshwari, E., Nougaret, S., Patel-Lippmann, K. K., Pectasides, M., Roller, L. A., Shen, L., Wahab, S. A., Maturen, et al
2026; 318 (2): e243477
- **Imaging surveillance outcomes of hepatocellular adenomas: systematic review and meta-analysis.** *Abdominal radiology (New York)*
Shen, L., Altmayer, S., Tse, J. R.
2025
- **Multidisciplinary conferences to enhance care for pelvic floor dysfunction: A descriptive study at a tertiary center** *CONTINENCE REPORTS*
Akeel, N., Neshatian, L., Sheth, V., Enemchukwu, E., Hoy, S., Gurland, B. H., Atashroo, D., Chodakiewitz, Y., Dinh, J., Elisha, H., Garcia, P. A., Hah, J. M., Hicks, et al
2025; 16
- **The Current Role of Renal Mass Biopsy.** *Radiologic clinics of North America*
Shen, L., Kwon, D. H., Sonn, G. A., Tse, J. R.
2025; 63 (6): 889-897
- **Defining minimum image quality criteria for common diagnostic point-of-care ultrasound images: A position statement of the Society of Hospital Medicine.** *Journal of hospital medicine*
Anstey, J., Bhasin, A., Franco-Sadud, R., Maw, A., Mathews, B. K., Dancel, R., Tierney, D. M., Haro, E. K., Cho, J., Schott, C., Boesch, B., Liu, G. Y., Reiersen, et al
2025
- **Vesical Imaging Reporting and Data System: Overcoming Barriers to Global Implementation-AJR Expert Panel Narrative Review.** *AJR. American journal of roentgenology*
Dehghanpour, A., Davenport, M. S., Muglia, V. F., Nicola, R., Shen, L., Shinagare, A. B., Vargas, H. A., Panebianco, V.
2025
- **US of the Neck beyond the Thyroid Gland: Parathyroid Glands.** *Radiographics : a review publication of the Radiological Society of North America, Inc*
Khot, R., Dixe de Oliveira Santo, I., Shen, L., Itani, M., Sailer, A., Kirsch, J. D., Revzin, M. V.
2025; 45 (6): e240182
- **Ultrasound-derived fat fraction for diagnosing hepatic steatosis: a systematic review and meta-analysis.** *European radiology*
Verdan, S., Torri, G. B., Marcos, V. N., Moreira, M. H., Defante, M. L., Fagundes, M. d., de Barros, E. M., Dias, A. B., Shen, L., Altmayer, S.
2025
- **Bowel Endometriosis: Systematic Approach to Diagnosis with US and MRI.** *Radiographics : a review publication of the Radiological Society of North America, Inc*
Dave, H. B., Chamié, L. P., Young, S. W., Sakala, M. D., VanBuren, W. M., Jha, P., Shen, L., Pectasides, M., Movilla, P., Laifer-Narin, S., Glanc, P., Shenoy-Bhangle, A. S.
2025; 45 (4): e240102
- **Editorial Comment: Focused and Structured Radiology Reporting With Multidisciplinary Approach.** *AJR. American journal of roentgenology*
Shen, L.
2025

- **Improving Diagnosis of Acute Cholecystitis with US: New Paradigms.** *Radiographics : a review publication of the Radiological Society of North America, Inc*
Patel, R., Tse, J. R., Shen, L., Bingham, D. B., Kamaya, A.
2024; 44 (12): e240032
- **Radiology State-of-the-art Review: Endometriosis Imaging Interpretation and Reporting.** *Radiology*
VanBuren, W., Feldman, M., Shenoy-Bhangle, A. S., Sakala, M. D., Young, S., Chamie, L. P., Giudice, L., Hindman, N. M., Tong, A., Rabban, J. T., Yano, M., Kilcoyne, A., Dave, et al
2024; 312 (3): e233482
- **Differentiation of Hepatocellular Adenoma Subtypes and Focal Nodular Hyperplasia on Gadoxetate Disodium-Enhanced MRI: An Updated Diagnostic Algorithm.** *AJR. American journal of roentgenology*
Cao, J. J., Shen, L., Yoon, L., Kamaya, A., Tse, J. R.
2024
- **Follow-up imaging and surgical costs associated with different guidelines for management of incidentally detected gallbladder polyps.** *Academic radiology*
Vo-Phamhi, J. M., Tiyyarattanachai, T., Matuszczak, M., Shen, L., Kim, S., Kamaya, A.
2024
- **Gastrointestinal devices: common and uncommon foreign bodies.** *Abdominal radiology (New York)*
Shen, L., Aslan, E., Cao, J. J., Shen, J., Tse, J. R.
2024
- **External Validation of a Five-Tiered CT Algorithm for the Diagnosis of Clear-Cell Renal Cell Carcinoma: A Retrospective Five-Reader Study.** *AJR. American journal of roentgenology*
Lemieux, S., Shen, L., Liang, T., Lo, E., Chu, Y., Kamaya, A., Tse, J. R.
2023
- **Hepatocellular Adenomas: Molecular Basis and Multimodality Imaging Update.** *Radiographics : a review publication of the Radiological Society of North America, Inc*
Tse, J. R., Felker, E. R., Naini, B. V., Shen, L., Shen, J., Lu, D. S., Kamaya, A., Raman, S. S.
2023; 43 (3): e220134
- **Bosniak Classification, Version 2019 Class IIF: Follow-up Strategy Should be Revised.** *The Journal of urology*
Tse, J. R., Shen, L.
2023: 101097JU00000000000003365
- **Editorial Comment: Meta-Analysis Supports ACR TI-RADS for Risk Stratification of Thyroid Nodules Over Other Systems.** *AJR. American journal of roentgenology*
Shen, L.
2023
- **Growth Kinetics of Pancreatic Neuroendocrine Neoplasms by Histopathologic Grade.** *Pancreas*
Cao, J. J., Shen, L., Visser, B. C., Yoon, L., Kamaya, A., Tse, J. R.
2023; 52 (2): e135-e143
- **Diagnostic performance of hypoechoic perinephric fat as a predictor of prediabetes and diabetes.** *Abdominal radiology (New York)*
Shen, L., Tse, J. R., Negrete, L. M., Shon, A., Yoon, L., Liang, T., Kamaya, A.
2022
- **Differentiation of benign from malignant solid renal lesions using CT-based radiomics and machine learning: comparison with radiologist interpretation.** *Abdominal radiology (New York)*
Wentland, A. L., Yamashita, R., Kino, A., Pandit, P., Shen, L., Brooke Jeffrey, R., Rubin, D., Kamaya, A.
2022
- **I saw the "bear paw" sign - Massive renal xanthogranulomatous pyelonephritis.** *Clinical imaging*
Mynarski, N. J., Shen, L., Negrete, L. M.
2022; 93: 70-74

- **Positive predictive value of LI-RADS US-3 observations: multivariable analysis of clinical and imaging features.** *Abdominal radiology (New York)*
Tse, J. R., Shen, L., Tiyyarattachai, T., Bird, K. N., Liang, T., Yoon, L., Kamaya, A.
2022
- **Interobserver agreement between eight observers using IOTA simple rules and O-RADS lexicon descriptors for adnexal masses.** *Abdominal radiology (New York)*
Antil, N., Raghu, P. R., Shen, L., Tiyyarattachai, T., Chang, E. M., Ferguson, C. W., Ho, A. A., Lutz, A. M., Mariano, A. J., Morimoto, L. N., Kamaya, A.
2022
- **Outcomes of LI-RADS US-2 Subthreshold Observations Detected on Surveillance Ultrasound.** *AJR. American journal of roentgenology*
Tse, J. R., Shen, L., Bird, K. N., Yoon, L., Kamaya, A.
2022
- **Nyquist sampling theorem and Bosniak classification, version 2019: effect of thin axial sections on categorization and agreement.** *European radiology*
Tse, J. R., Shen, L., Shen, J., Yoon, L., Kamaya, A.
2022
- **Safety of percutaneous, image-guided biopsy of hepatocellular carcinoma with and without concurrent ablation.** *Abdominal radiology (New York)*
Tse, J. R., Terashima, K., Shen, L., McWilliams, J. P., Lu, D. S., Raman, S. S.
2022
- **Growth kinetics and progression rates of cystic renal masses on active surveillance.**
Tse, J., Shen, L., Yoon, L., Kamaya, A.
LIPPINCOTT WILLIAMS & WILKINS.2022
- **Evaluation of early sonographic predictors of gangrenous cholecystitis: mucosal discontinuity and echogenic pericholecystic fat.** *Abdominal radiology (New York)*
Tse, J. R., Gologorsky, R., Shen, L., Bingham, D. B., Jeffrey, R. B., Kamaya, A.
1800
- **Growth Kinetics and Progression Rate of Bosniak Classification, Version 2019 III and IV Cystic Renal Masses on Imaging Surveillance.** *AJR. American journal of roentgenology*
Tse, J. R., Shen, L., Shen, J., Yoon, L., Chung, B. I., Kamaya, A.
2022
- **Inflammatory pseudotumor-like follicular dendritic cell tumor of the spleen: a case report and approach to differential diagnosis.** *Radiology case reports*
Nguyen, A., Negrete, L. M., Bulterys, P. L., Shen, L.
2021; 16 (11): 3213-3216
- **Prevalence of Malignancy and Histopathologic Association of Bosniak Classification, Version 2019 Class III and IV Cystic Renal Masses.** *The Journal of urology*
Tse, J. R., Shen, L., Shen, J., Yoon, L., Kamaya, A.
2020: 101097JU0000000000001438
- **Bosniak Classification of Cystic Renal Masses Version 2019: Comparison of Categorization using CT and MRI.** *AJR. American journal of roentgenology*
Tse, J. R., Shen, J. n., Shen, L. n., Yoon, L. n., Kamaya, A. n.
2020
- **Human-machine partnership with artificial intelligence for chest radiograph diagnosis.** *NPJ digital medicine*
Patel, B. N., Rosenberg, L. n., Willcox, G. n., Baltaxe, D. n., Lyons, M. n., Irvin, J. n., Rajpurkar, P. n., Amrhein, T. n., Gupta, R. n., Halabi, S. n., Langlotz, C. n., Lo, E. n., Mammarrappallil, et al
2019; 2: 111
- **Erratum: Author Correction: Human-machine partnership with artificial intelligence for chest radiograph diagnosis.** *NPJ digital medicine*

Patel, B. N., Rosenberg, L. n., Willcox, G. n., Baltaxe, D. n., Lyons, M. n., Irvin, J. n., Rajpurkar, P. n., Amrhein, T. n., Gupta, R. n., Halabi, S. n., Langlotz, C. n., Lo, E. n., Mammarrappallil, et al
2019; 2: 129

● **Author Correction: Human-machine partnership with artificial intelligence for chest radiograph diagnosis.** *NPJ digital medicine*

Patel, B. N., Rosenberg, L. n., Willcox, G. n., Baltaxe, D. n., Lyons, M. n., Irvin, J. n., Rajpurkar, P. n., Amrhein, T. n., Gupta, R. n., Halabi, S. n., Langlotz, C. n., Lo, E. n., Mammarrappallil, et al
2019; 2 (1): 129

● **Translabial US: Preoperative Detection of Midurethral Sling Erosion in Stress Urinary Incontinence.** *Radiology*

Viragh, K. A., Cohen, S. A., Shen, L., Kurzbard-Roach, N., Raz, S., Raman, S. S.
2018; 289 (3): 721-727

● **Pathological and 3 Tesla Volumetric Magnetic Resonance Imaging Predictors of Biochemical Recurrence after Robotic Assisted Radical Prostatectomy: Correlation with Whole Mount Histopathology.** *The Journal of urology*

Tan, N., Shen, L., Khoshnoodi, P., Alcalá, H. E., Yu, W., Hsu, W., Reiter, R. E., Lu, D. Y., Raman, S. S.
2018; 199 (5): 1218-1223

● **Automatic Classification of Ultrasound Screening Examinations of the Abdominal Aorta.** *Journal of digital imaging*

Morioka, C., Meng, F., Taira, R., Sayre, J., Zimmerman, P., Ishimitsu, D., Huang, J., Shen, L., El-Saden, S.
2016; 29 (6): 742-748

● **MR anatomy and pathology of the ulnar nerve involving the cubital tunnel and Guyon's canal.** *Clinical imaging*

Shen, L., Masih, S., Patel, D. B., Matcuk, G. R.
2015; 40 (2): 263-74