



Emily B. Tsai

Clinical Associate Professor, Radiology

CLINICAL OFFICE (PRIMARY)

- **Stanford Radiology**

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Bio

BIO

Dr. Emily Tsai is a board certified radiologist with subspecialty training in thoracic imaging and image-guided procedures. Her clinical focus is on diseases affecting the lungs and airways, including cancer, interstitial lung disease, COPD, and infection. Her research focuses on quality improvement and patient outcomes. Recent projects include assessment of incidental findings and cost-effectiveness of CT screening for lung cancer, as well as application of clinical tools and machine learning to improve workflow and triage of emergent studies.

CLINICAL FOCUS

- Thoracic Imaging
- Image-Guided Biopsy
- Diagnostic Radiology

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Radiology

HONORS AND AWARDS

- Global Partner Society International Speaker Awards Program, American Roentgen Ray Society (ARRS) (2025)
- ReCAP Scholar, Research Career Accelerator Program (ReCAP) (2023)
- Early Career Faculty Leadership Accelerator x Bossed Up Level Up Program, Stanford Advancement of Women in Medicine (SAWM) (2021-2022)
- S. David Rockoff Research Seed Grant Award, Society of Thoracic Radiology (2021-2022)
- Comparative Effectiveness Research Program, Radiological Society of North America (2019-2020)
- Clinical Faculty Development Program, Association of University Radiologists (2019)
- Clinician Educator Development Program, American Roentgen Ray Society (2019)
- Annual Meeting Educational Exhibit Section Chair's Pick – Subspecialty Award, American Roentgen Ray Society (2018)
- Outstanding Nighthawk Resident Award, UCLA (2016)

- Health Policy Research Scholar Program – Outstanding Presentation Award, American College of Radiology (ACR) – Association of University Radiologists (2015)
- Annual Meeting and Leadership Summit Poster Winner, California Radiological Society (2014)
- Annual Meeting and Chapter Leadership Conference – Poster Winner (Quality and Safety), American College of Radiology, Resident and Fellow Section (2013)
- Annual Meeting and Leadership Summit Poster Winner, California Radiological Society (2013)
- Enabling Grant, Susan G. Komen for the Cure (Breast Cancer Foundation) (2008)
- Fellowship Award, Chinese American Physicians Society (2008)
- Spotlight on Leadership and Community, Stanford University, Center of Excellence in Diversity in Medical Education (2008)
- Medical Scholars Research Program Fellowship, Stanford University School of Medicine (2007-2010)
- Grant, California HealthCare Foundation (2007)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Affiliate Faculty, Integrative Biomedical Imaging Informatics at Stanford (IBIIS) (2022 - present)
- Affiliate Faculty, Stanford Center for Artificial Intelligence in Medicine and Imaging (AIMI) (2019 - present)
- Member, Society of Thoracic Radiology (2016 - present)
- Member, American College of Radiology (2012 - present)
- Member, American Roentgen Ray Society (2012 - present)
- Member, Radiological Society of North America (2008 - present)

PROFESSIONAL EDUCATION

- Board Certification: Diagnostic Radiology, American Board of Radiology (2017)
- Fellowship: UCLA Radiology Fellowships (2017) CA
- Residency: UCLA Radiology Residency (2016) CA
- Internship: NYU Grossman School of Medicine Internal Medicine Residency (2012) NY
- Medical Education: Stanford University School of Medicine (2011) CA
- MD, Stanford University , Scholarly Concentration: Bioinformatics (2011)
- BS, Columbia University , Biomedical Engineering (major), Computer Science (minor) (2005)

LINKS

- LinkedIn: <https://www.linkedin.com/in/emilytsai>
- Doximity: <https://www.doximity.com/cv/emily-tsai>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Lung cancer screening

Clinical applications of machine learning

Comparative effectiveness research

Image-guided biopsy and intervention

CLINICAL TRIALS

- Clinical Validation of Machine Learning Triage of Chest Radiographs, Not Specified

Publications

PUBLICATIONS

- **Lung Cancer Screening and Incidental Findings: A Research Agenda. An Official American Thoracic Society Research Statement.** *American journal of respiratory and critical care medicine*
Henderson, L. M., Kim, R. Y., Tanner, N. T., Tsai, E. B., Begnaud, A., Dako, F., Gieske, M., Kallianos, K., Richman, I., Sakoda, L. C., Schwartz, R. G., Yeboah, J., Fong, et al
2025
- **The Global Reading Room: A Discrepancy Between Artificial Intelligence and the Radiologist for Pulmonary Embolus on CT Pulmonary Angiography.** *AJR. American journal of roentgenology*
Ditkofsky, N. G., Tsai, E. B., Ugas-Charcape, C. F., Usuzaki, T.
2024
- **Volumetric Analysis: Effect on Diagnosis and Management of Indeterminate Solid Pulmonary Nodules in Routine Clinical Practice.** *Journal of computer assisted tomography*
Lim, R. S., Rosenberg, J., Willeminck, M. J., Cheng, S. N., Guo, H. H., Hollett, P. D., Lin, M. C., Madani, M. H., Martin, L., Pogatchnik, B. P., Pohlen, M., Shen, J., Tsai, et al
2024
- **AI in Radiology: Opportunities and Challenges.** *Seminars in ultrasound, CT, and MR*
Flory, M. N., Napel, S., Tsai, E. B.
2024
- **Artificial Intelligence (AI) for Lung Nodules: From the AJR Special Series on AI Applications.** *AJR. American journal of roentgenology*
Liu, J. A., Yang, I. Y., Tsai, E. B.
2022
- **Traumatic Lung Injury in Sports Stems to Sternum: Sports Imaging Inside and Out**
Tsai, E. B., Lin, M. C., Shen, J.
ARRS.2022: 98-104
- **Pragmatic Application of Computed Tomography Lung Texture Analysis in Immune Checkpoint Inhibitor Pneumonitis: An Exploratory Study**
Filsoof, D., Im, J., Garcia, P., Stedman, M., Anand, S., Neal, J. W., Wakelee, H. A., Ramchandran, K., Das, M., Padda, S. K., Sharifi, H., Mooney, J. J., Tsai, et al
AMER THORACIC SOC.2021
- **The RSNA Pulmonary Embolism CT Dataset.** *Radiology. Artificial intelligence*
Colak, E., Kitamura, F. C., Hobbs, S. B., Wu, C. C., Lungren, M. P., Prevedello, L. M., Kalpathy-Cramer, J., Ball, R. L., Shih, G., Stein, A., Halabi, S. S., Altinmakas, E., Law, et al
2021; 3 (2): e200254
- **The RSNA International COVID-19 Open Annotated Radiology Database (RICORD).** *Radiology*
Tsai, E. B., Simpson, S., Lungren, M., Hershman, M., Roshkovan, L., Colak, E., Erickson, B. J., Shih, G., Stein, A., Kalpathy-Cramer, J., Shen, J., Hafez, M., John, et al
2021: 203957
- **Dual energy chest x-ray for improved COVID-19 detection using a dual-layer flat-panel detector: Simulation and phantom studies**
Shi, L., Bennett, N., Lu, M., Sun, M., Zhang, J., Star-Lack, J., Tsai, E. B., Guo, H., Wang, A. S.
edited by Bosmans, H., Zhao, W., Yu, L.
SPIE-INT SOC OPTICAL ENGINEERING.2021
- **Data from Medical Imaging Data Resource Center (MIDRC) – RSNA International COVID Radiology Database (RICORD) Release 1c – Chest x-ray, Covid+ (MIDRC-RICORD-1C).** *The Cancer Imaging Archive*
Tsai, E. B., Simpson, S., Lungren, M. P., Hershman, M., Roshkovan, L., Colak, E., Erickson, B. J., Shih, G., Stein, A., Kalpathy-Cramer, J., Shen, J., Hafez, M., John, et al
2021

- **Improving Factual Completeness and Consistency of Image-to-Text Radiology Report Generation**
Miura, Y., Zhang, Y., Tsai, E., Langlotz, C. P., Jurafsky, D., *Assoc Computat Linguist*
ASSOC COMPUTATIONAL LINGUISTICS-ACL.2021: 5288-5304
- **Bronchopulmonary Dysplasia: From Neonate to Adult** *CONTEMPORARY DIAGNOSTIC RADIOLOGY*
Tsai, E. B., Stenback, M., Newman, B.
2020; 43 (17)
- **Bronchopulmonary Dysplasia: From Neonate to Adult** *Contemporary Diagnostic Radiology*
Tsai, E. B., Stenback, M., Newman, B.
2020; 43 (17)
- **Treatment of a benign esophagopericardial fistula with an esophageal stent—a case report** *Annals of Esophagus*
Wang, Y., Liou, D. Z., Tsai, E. B., Liu, N. S.
2020; 3
- **Cost-Effectiveness Analysis of Lung Cancer Screening Accounting for the Effect of Indeterminate Findings** *JNCI CANCER SPECTRUM*
Toumazis, I., Tsai, E. B., Erdogan, S., Han, S. S., Wan, W., Leung, A., Plevritis, S. K.
2019; 3 (3)
- **Cost-Effectiveness Analysis of Lung Cancer Screening Accounting for the Effect of Indeterminate Findings.** *JNCI cancer spectrum*
Toumazis, I., Tsai, E. B., Erdogan, S. A., Han, S. S., Wan, W., Leung, A., Plevritis, S. K.
2019; 3 (3): pkz035
- **Optimizing the Factual Correctness of a Summary: A Study of Summarizing Radiology Reports** *arXiv*
Zhang, Y., Merck, D., Tsai, E. B., Manning, C. D., Langlotz, C. P.
2019; 11
- **PVH/Pulmonary Edema (Cardiogenic)** *CT & MR in Cardiology*
Tsai, E. B., Wu, C. C., Rosado-de-Christenson, M. L.
Elsevier.2019; 1
- **Pulmonary Pseudoaneurysm** *CT & MR in Cardiology*
Tsai, E. B., Wu, C. C.
Elsevier.2019; 1
- **Pulmonary Aneurysm** *CT & MR in Cardiology*
Tsai, E. B., Wu, C. C.
Elsevier.2019; 1
- **Pulmonary Aneurysm** *CT & MR in Cardiology*
Tsai, E. B., Wu, C. C.
Elsevier.2019; 1
- **Proximal Interruption of the Pulmonary Artery** *CT & MR in Cardiology*
Tsai, E. B., Wu, C. C., Ternes, T. H.
Elsevier.2019; 1
- **Left Superior Vena Cava** *CT & MR in Cardiology*
Tsai, E. B., Wu, C. C.
Elsevier.2019; 1
- **Approach to Pulmonary Vasculature** *CT & MR in Cardiology*
Tsai, E. B., Wu, C. C.
Elsevier.2019; 1
- **Unusual Tumors of the Lung** *Contemporary Diagnostic Radiology*
Tsai, E. B., Jude, C. M., Mohammad, S. F., Deshmukh, M., Patel, M. K., Leung, A. N.
2019; 42 (3)

- **Long-Term Experience With a Mandatory Clinical Decision Rule and Mandatory D-Dimer in the Evaluation of Suspected Pulmonary Embolism** *JOURNAL OF THE AMERICAN COLLEGE OF RADIOLOGY*
Hoo, G., Tsai, E., Vazirani, S., Li, Z., Barack, B. M., Wu, C. C.
2018; 15 (12): 1673-1680
- **Incidental Findings on Lung Cancer Screening: Significance and Management** *SEMINARS IN ULTRASOUND CT AND MRI*
Tsai, E. B., Chiles, C., Carter, B. W., Godoy, M. C. B., Shroff, G. S., Munden, R. F., Truong, M. T., Wu, C. C.
2018; 39 (3): 273–81
- **Feasibility and Safety of Intrathoracic Biopsy and Repeat Biopsy for Evaluation of Programmed Cell Death Ligand-1 Expression for Immunotherapy in Non-Small Cell Lung Cancer** *RADIOLOGY*
Tsai, E. B., Pomykala, K., Ruchalski, K., Genshaft, S., Abtin, F., Gutierrez, A., Kim, H. J., Li, A., Adame, C., Jalalian, A., Wolf, B., Garon, E. B., Goldman, et al
2018; 287 (1): 326–32
- **Long-Term Experience With a Mandatory Clinical Decision Rule and Mandatory d-Dimer in the Evaluation of Suspected Pulmonary Embolism.** *Journal of the American College of Radiology : JACR*
Soo Hoo, G. W., Tsai, E. n., Vazirani, S. n., Li, Z. n., Barack, B. M., Wu, C. C.
2018
- **Hodgkin Disease** *Müller's Imaging of the Chest*
Tsai, E. B., Wu, C. C., Lee, K. S.
Elsevier.2018; 2
- **Lung Adenocarcinoma: Correlation of Quantitative CT Findings with Pathologic Findings** *RADIOLOGY*
Ko, J. P., Suh, J., Ibadapo, O., Escalon, J. G., Li, J., Pass, H., Naidich, D. P., Crawford, B., Tsai, E. B., Koo, C. W., Mikheev, A., Rusinek, H.
2016; 280 (3): 931-939
- **Reducing Unnecessary Portable Pelvic Radiographs in Trauma Patients: A Resident-Driven Quality Improvement Initiative** *JOURNAL OF THE AMERICAN COLLEGE OF RADIOLOGY*
Langer, J. M., Tsai, E. B., Luhar, A., McWilliams, J., Motamedi, K.
2015; 12 (9): 954-959
- **Atypical Carcinoid** *Specialty Imaging: Thoracic Neoplasms*
Wu, C. C., Tsai, E. B.
Elsevier.2015; 1
- **Typical Carcinoid** *Specialty Imaging: Thoracic Neoplasms*
Wu, C. C., Tsai, E. B.
Elsevier.2015; 1
- **SUVmax correlates with degree of invasiveness in early lung adenocarcinoma categorized using the new IASLC/ATS/ERS multidisciplinary classification system**
Sen, U., Friedman, K., Ko, J., Tsai, E., Koo, C., Suh, J., Naidich, D., Pass, H.
SOC NUCLEAR MEDICINE INC.2012
- **Incidental Extracardiac Findings at Coronary CT: Clinical and Economic Impact** *AMERICAN JOURNAL OF ROENTGENOLOGY*
Lee, C. I., Tsai, E. B., Sigal, B. M., Plevritis, S. K., Garber, A. M., Rubin, G. D.
2010; 194 (6): 1531-1538
- **The rise and fall of insulin secretion in type 1 diabetes mellitus** *DIABETOLOGIA*
Tsai, E. B., Sherry, N. A., Palmer, J. P., Herold, K. C.
2006; 49 (2): 261-270
- **Natural history of beta-cell function in type 1 diabetes** *6th Servier-IGIS Symposium*
Sherry, N. A., Tsai, E. B., Herold, K. C.
AMER DIABETES ASSOC.2005: S32–S39
- **Natural history of β -cell function in type 1 diabetes**
Sherry, N. A., Tsai, E. B., Herold, K. C.

