Stanford



Lea Steffes

Assistant Professor of Pediatrics (Pulmonary Medicine)

Pediatrics - Pulmonary Medicine

CLINICAL OFFICE (PRIMARY)

- **Pediatric Pulmonary**

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ACADEMIC CONTACT INFORMATION

- **Administrative Contact**

  Meena Kakani - Administrative Manager

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Bio

BIO

Dr. Steffes is a pediatric pulmonologist and Assistant Professor in Pediatrics in the Division of Pulmonary Medicine at Stanford University. She has completed an advanced fellowship in Pulmonary Vascular Disease at Lucile Packard Children's Hospital Stanford. Her clinical expertise focuses on rare pediatric lung diseases, with particular specialization in heritable forms of pulmonary vascular disease and developmental lung disorders.

Dr. Steffes' research centers on understanding the cellular characteristics of occlusive neointimal lesions, the abnormal cells that obstruct pulmonary blood flow in pulmonary hypertension. Her work specifically examines the contribution of mesenchymal cell subsets to pediatric pulmonary vascular disease, delineating mechanisms within both pre- and post-capillary networks. By leveraging insights from developing human and diseased mouse lung, her research provides a mechanistic framework for understanding childhood-onset pulmonary vascular diseases with the ultimate goal of identifying novel therapeutic targets for pulmonary hypertension.

CLINICAL FOCUS

- Pediatric Pulmonology

ACADEMIC APPOINTMENTS

- Assistant Professor-Univ Med Line, Pediatrics - Pulmonary Medicine
- Member, Cardiovascular Institute
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)

PROFESSIONAL EDUCATION

- Board Certification: Pediatric Pulmonology, American Board of Pediatrics (2020)
- Fellowship: Stanford University Pediatric Pulmonary Fellowship (2022) CA
- Board Certification, American Board of Pediatrics , Pediatric Pulmonary Medicine (2020)
- Fellowship, Stanford University , Pediatric Pulmonary Medicine (2020)

- Board Certification: Pediatrics, American Board of Pediatrics (2017)
- Residency, Medical College of Wisconsin , Pediatrics (2017)
- Medical Education, Medical College of Wisconsin , Medicine (2014)

Publications

PUBLICATIONS

- **Pulmonary Hemodynamics and Long-Term Outcomes in Children withPulmonary Hypertension-Associated Bronchopulmonary Dysplasia.** *The Journal of pediatrics*
  Austin, E. D., Mullen, M. P., Avitabile, C. M., Krishnan, U. S., Rosenzweig, E. B., Keller, R. L., Kinsella, J. P., Yung, D., Steffes, L., Bates, A., Elia, E. G., Romer, L. H., McGrath-Morrow, et al
  2025: 114869
- **Left Ventricular Assist Device Implantation and Heart Transplantation in a Young Man With Duchenne Muscular Dystrophy.** *Pediatric transplantation*
  Hollander, S. A., Dykes, J., Dayan, J., Morales, E., Steffes, L., Klotz, J. M., Murray, J. M., Ma, M., Martin, E., Rosenthal, D. N., Kaufman, B. D.
  2025; 29 (6): e70162
- **Genetic Testing Utilization in the U.S. Registry for Childhood Interstitial and Diffuse Lung Diseases.** *Pediatric pulmonology*
  Voss, L. A., Nevel, R. J., Wambach, J. A., Nogee, L. M., Deterding, R. R., Casey, A. M., O'Connor, M. G., Craven, D. I., Taylor, J. B., Deutsch, G. H., Tam-Williams, J. B., Steffes, L. C., Brennan, et al
  2025; 60 (4): e71073
- **Why some and not others? Understanding vascular phenotypes in genetic developmental lung diseases.** *Current opinion in pediatrics*
  Steffes, L. C., Kumar, M. E., Varghese, N. P.
  2025
- **von Willebrand Factor Is Produced Exclusively by Endothelium, Not Neointima, in Occlusive Vascular Lesions in Both Pulmonary Hypertension and Atherosclerosis.** *Circulation*
  Steffes, L. C., Cheng, P., Quertermous, T., Kumar, M. E.
  2022; 146 (5): 429-431
- **The Tabula Sapiens: A multiple-organ, single-cell transcriptomic atlas of humans.** *Science (New York, N.Y.)*
  Jones, R. C., Karkanias, J., Krasnow, M. A., Pisco, A. O., Quake, S. R., Salzman, J., Yosef, N., Bulthaup, B., Brown, P., Harper, W., Hemenez, M., Ponnusamy, R., Salehi, et al
  2022; 376 (6594): eabl4896
- **Publisher Correction: Cell types of origin of the cell-free transcriptome.** *Nature biotechnology*
  Vorperian, S. K., Moufarrej, M. N., Tabula Sapiens Consortium, Quake, S. R., Jones, R. C., Karkanias, J., Krasnow, M., Pisco, A. O., Quake, S. R., Salzman, J., Yosef, N., Bulthaup, B., Brown, P., et al
  2022
- **Cell types of origin of the cell-free transcriptome.** *Nature biotechnology*
  Vorperian, S. K., Moufarrej, M. N., Tabula Sapiens Consortium, Quake, S. R., Jones, R. C., Karkanias, J., Krasnow, M., Pisco, A. O., Quake, S. R., Salzman, J., Yosef, N., Bulthaup, B., Brown, P., et al
  2022
- **Upfront Combination Therapy: Growing the Case to Get Ahead of Pediatric Pulmonary Arterial Hypertension.** *Annals of the American Thoracic Society*
  Steffes, L. C., Austin, E. D.
  1800; 19 (2): 163-165
- **Chronic Daily House Dust Mite Exposure in Mice is an Effective Model to Quantify the Effect of Pharmacologic Agents on Discrete Stages of Artery Remodeling in Pulmonary Hypertension.** *Bio-protocol*
  Steffes, L. C., Kumar, M. E.
  2022; 12 (1): e4273
- **Chronic Daily House Dust Mite Exposure in Mice is an Effective Model to Quantify the Effect of Pharmacologic Agents on Discrete Stages of Artery Remodeling in Pulmonary Hypertension** *BIO-PROTOCOL*

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2022; 12 (01)

- **RNA splicing programs define tissue compartments and cell types at single-cell resolution** *ELIFE*
  Olivieri, J., Dehghannasiri, R., Wang, P. L., Jang, S., de Morree, A., Tan, S. Y., Ming, J., Wu, A., Consortium, T., Quake, S. R., Krasnow, M. A., Salzman, J.
  2021; 10

- **Coronavirus disease 2019 respiratory disease in children: clinical presentation and pathophysiology.** *Current opinion in pediatrics*
  Steffes, L. C., Cornfield, D. N.
  2021; 33 (3): 302–10

- **Three Infants with Pathogenic Variants in the ABCA3 Gene: Presentation, Treatment and Clinical Course.** *The Journal of pediatrics*
  Si, n. n., X, n. n., Steffes, n. n., L C, n. n., Schymick, n. n., J C, n. n., Hazard, n. n., F K, n. n., Tracy, n. n., M C, n. n., Cornfield, n. n., D N, n. n.
  2020

- **A Notch3-Marked Subpopulation of Vascular Smooth Muscle Cells is the Cell of Origin for Occlusive Pulmonary Vascular Lesions.** *Circulation*
  Steffes, L. C., Froistad, A. A., Andruska, A. n., Boehm, M. n., McGlynn, M. n., Zhang, F. n., Zhang, W. n., Hou, D. n., Tian, X. n., Miquerol, L. n., Nadeau, K. n., Metzger, R. J., Spiekerkoetter, et al
  2020