Stanford

Lea Steffes

Instructor, 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, a Wisconsin native, completed medical school and pediatric residency at the Medical College of Wisconsin. She then moved to the Bay Area and completed her clinical fellowship in pediatric pulmonary medicine at Stanford University in 2020. Additionally, Dr. Steffes received further post-doctoral training in the laboratories of Dr. Maya Kumar and Dr. David Cornfield, studying the cellular and molecular mechanism driving pulmonary vascular disease. In addition to her role as an Instructor in Pediatrics in the division of Pulmonary Medicine, Dr. Steffes is also completing an advanced clinical fellowship in Pulmonary Hypertension at Lucile Packard Children's Hospital Stanford. Her clinical work consists of caring for patients with pediatric pulmonary and pulmonary vascular diseases such as pulmonary hypertension, bronchopulmonary dysplasia, interstitial lung disease, respiratory failure, chronic cough and asthma. Her research is focused on the vascular changes seen in pulmonary hypertension, more specifically understanding the cellular characteristics of occlusive neointimal lesions, the abnormal cells that block pulmonary blood flow in pulmonary hypertension. In her most recent work, Dr. Steffes identified a subset of healthy vascular smooth muscle cells that are the cell of origin for the pathologic neointimal cells and a specific signaling pathway, that when blocked, inhibits the formation of neointimal lesions.

Dr. Steffes is currently employing advanced single cell sequencing technologies to further understand neointimal cells with the ultimate goal identifying new therapies for pulmonary hypertension, a fatal disease with no known cure.

CLINICAL FOCUS

- Pediatric Pulmonology

ACADEMIC APPOINTMENTS

- Instructor, Pediatrics - Pulmonary Medicine
- Member, Cardiovascular Institute
- 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

- **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*
  Steffes, L. C., Kumar, M. E.
  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