



Christin S Kuo

Assistant Professor of Pediatrics (Pulmonary Medicine)
Pediatrics - Pulmonary Medicine

CLINICAL OFFICE (PRIMARY)

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ACADEMIC CONTACT INFORMATION

- **Administrative Contact**
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Bio

BIO

Dr. Christin Kuo is a physician-scientist in the Department of Pediatrics. The ultimate goal of her research is to integrate a cellular and molecular understanding of pulmonary neuroendocrine cells (PNECs) to discover new approaches for diagnosing and treating diverse respiratory conditions associated with NE cell dysfunction and excessive proliferation, including neuroendocrine tumors. Abnormal PNECs are found in neuroendocrine cell hyperplasia of infancy (NEHI), pulmonary carcinoids, large cell neuroendocrine carcinoma, and small cell lung cancer. Her innovative approaches to studying the development and molecular diversity of rare but fascinating neurosensory cells with single cell precision, have led to fundamental discoveries. Her lab's current research aims to apply this knowledge to understanding diverse human pulmonary neuroendocrine cell disorders using interdisciplinary approaches. Dr. Kuo is a Maternal and Child Health Research Institute Faculty Scholar.

CLINICAL FOCUS

- Pediatric Pulmonology
- Interstitial Lung Diseases

ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Pediatrics - Pulmonary Medicine
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)

HONORS AND AWARDS

- Maternal and Child Health Research Institute (MCHRI) Faculty Scholar, Stanford University (2022-2027)
- Esther Ehrman Lazard Faculty Scholar, Stanford University (2020-2021)

PROFESSIONAL EDUCATION

- Board Certification: Pediatric Pulmonology, American Board of Pediatrics (2010)

- Residency: UCSF Pediatric Residency (2007) CA
- Medical Education: St Louis University School of Medicine (2004) MO
- Board Certification: Pediatrics, American Board of Pediatrics (2007)
- Fellowship: Lucile Packard Children's Hospital (2011) CA

LINKS

- Website: <https://kuo.stanford.edu/>

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Helen Yue Zhang

Publications

PUBLICATIONS

- **Cellular and molecular characterization of peripheral glia in the lung and other organs.** *PLoS one*
Hall, S., Liu, S., Liang, I., Schulz, S., Ezran, C., Tan, M., Kuo, C. S.
2024; 19 (12): e0310303
- **Interleukin(IL)-1/IL-6-inhibitor-associated drug reaction with eosinophilia and systemic symptoms (DRESS) in systemic inflammatory illnesses.** *The journal of allergy and clinical immunology. In practice*
Saper, V. E., Tian, L., Versteegen, R. H., Conrad, C. K., Cidon, M., Hopper, R. K., Kuo, C. S., Osoegawa, K., Baszis, K., Bingham, C. A., Ferguson, I., Hahn, T., Horne, et al
2024
- **Interstitial macrophages are a focus of viral takeover and inflammation in COVID-19 initiation in human lung.** *The Journal of experimental medicine*
Wu, T. T., Travaglini, K. J., Rustagi, A., Xu, D., Zhang, Y., Andronov, L., Jang, S., Gillich, A., Dehghannasiri, R., Martinez-Colon, G. J., Beck, A., Liu, D. D., Wilk, et al
2024; 221 (6)
- **An organism-wide atlas of hormonal signaling based on the mouse lemur single-cell transcriptome.** *Nature communications*
Liu, S., Ezran, C., Wang, M. F., Li, Z., Awayan, K., Long, J. Z., De Vlamincq, I., Wang, S., Epelbaum, J., Kuo, C. S., Terrien, J., Krasnow, M. A., Ferrell, et al
2024; 15 (1): 2188
- **Neuroendocrinology of the lung revealed by single-cell RNA sequencing.** *eLife*
Kuo, C. S., Darmanis, S., Diaz de Arce, A., Liu, Y., Almanzar, N., Wu, T. T., Quake, S. R., Krasnow, M. A.
2022; 11
- **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., Bulthaupt, B., Brown, P., Harper, W., Hemenez, M., Ponnusamy, R., Salehi, et al
2022; 376 (6594): eabl4896
- **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., Bulthaupt, B., Brown, P., et al
2022
- **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

- **Tissue-specific telomere shortening and degenerative changes in a patient with TINF2 mutation and dyskeratosis congenita.** *Human pathology (New York)*
Roake, C. M., Juntilla, M., Agarwal-Hashmi, R., Artandi, S., Kuo, C. S.
2021; 25
- **Cell-autonomous immune gene expression is repressed in pulmonary neuroendocrine cells and small cell lung cancer.** *Communications biology*
Cai, L., Liu, H., Huang, F., Fujimoto, J., Girard, L., Chen, J., Li, Y., Zhang, Y., Deb, D., Stastny, V., Pozo, K., Kuo, C. S., Jia, et al
2021; 4 (1): 314
- **Single-cell meta-analysis of SARS-CoV-2 entry genes across tissues and demographics.** *Nature medicine*
Muus, C., Luecken, M. D., Eraslan, G., Sikkema, L., Waghray, A., Heimberg, G., Kobayashi, Y., Vaishnav, E. D., Subramanian, A., Smillie, C., Jagadeesh, K. A., Duong, E. T., Fiskin, et al
2021
- **A molecular cell atlas of the human lung from single-cell RNA sequencing.** *Nature*
Travaglini, K. J., Nabhan, A. N., Penland, L., Sinha, R., Gillich, A., Sit, R. V., Chang, S., Conley, S. D., Mori, Y., Seita, J., Berry, G. J., Shrager, J. B., Metzger, et al
2020
- **Ageing hallmarks exhibit organ-specific temporal signatures.** *Nature*
Schaum, N. n., Lehallier, B. n., Hahn, O. n., Pálóvics, R. n., Hosseinzadeh, S. n., Lee, S. E., Sit, R. n., Lee, D. P., Losada, P. M., Zardeneta, M. E., Fehlmann, T. n., Webber, J. T., McGeever, et al
2020
- **A single-cell transcriptomic atlas characterizes ageing tissues in the mouse.** *Nature*
2020
- **Axon-like protrusions promote small cell lung cancer migration and metastasis.** *eLife*
Yang, D., Qu, F., Cai, H., Chuang, C., Lim, J. S., Jahchan, N., Gruner, B. M., S Kuo, C., Kong, C., Oudin, M. J., Winslow, M. M., Sage, J.
2019; 8
- **Rare Pulmonary Neuroendocrine Cells Are Stem Cells Regulated by Rb, p53, and Notch.** *Cell*
Ouadah, Y. n., Rojas, E. R., Riordan, D. P., Capostagno, S. n., Kuo, C. S., Krasnow, M. A.
2019; 179 (2): 403–16.e23
- **A national registry for childhood interstitial and diffuse lung diseases in the United States.**
Young, L., Nevel, R., Casey, A., Fishman, M., Welsh, S., Liptzin, D., Hagood, J., Kurland, G., Craven, D., Fiorino, E., Taylor, J., Goldfarb, S., Conrad, et al
EUROPEAN RESPIRATORY SOC JOURNALS LTD.2018
- **Single-cell transcriptomics of 20 mouse organs creates a Tabula Muris.** *Nature*
2018; 562 (7727): 367–72
- **Pulmonary arteriovenous malformations: an uncharacterised phenotype of dyskeratosis congenita and related telomere biology disorders** *EUROPEAN RESPIRATORY JOURNAL*
Khincha, P. P., Bertuch, A. A., Agarwal, S., Townsley, D. M., Young, N. S., Keel, S., Shimamura, A., Boulad, F., Simoneau, T., Justino, H., Kuo, C., Artandi, S., McCaslin, et al
2017; 49 (1)
- **Respiratory System Involvement in Costello Syndrome** *AMERICAN JOURNAL OF MEDICAL GENETICS PART A*
Gomez-Ospina, N., Kuo, C., Ananth, A. L., Myers, A., Brennan, M., Stevenson, D. A., Bernstein, J. A., Hudgins, L.
2016; 170 (7): 1849-1857
- **Formation of a Neurosensory Organ by Epithelial Cell Slithering** *CELL*
Kuo, C. S., Krasnow, M. A.
2015; 163 (2): 394-405
- **Cellular mechanisms of alveolar pathology in childhood interstitial lung diseases: current insights from mouse genetics** *CURRENT OPINION IN PEDIATRICS*

Kuo, C. S., Desai, T. J.
2015; 27 (3): 341-347

- **Interstitial lung disease in children.** *Current opinion in pediatrics*

Kuo, C. S., Young, L. R.
2014; 26 (3): 320-327

- **PML-dependent apoptosis after DNA damage is regulated by the checkpoint kinase hCds1/Chk2** *NATURE CELL BIOLOGY*

Yang, S. T., Kuo, C., Bisi, J. E., Kim, M. K.
2002; 4 (11): 865-870

- **Localization, dynamics, and protein interactions reveal distinct roles for ER and Golgi SNAREs** *JOURNAL OF CELL BIOLOGY*

Hay, J. C., Klumperman, J., Oorschot, V., Steegmaier, M., Kuo, C. S., Scheller, R. H.
1998; 141 (7): 1489-1502

- **Protein interactions regulating vesicle transport between the endoplasmic reticulum and Golgi apparatus in mammalian cells** *CELL*

Hay, J. C., Chao, D. S., Kuo, C. S., Scheller, R. H.
1997; 89 (1): 149-158