Stanford



Suria Sudhakaran Mannil

Clinical Instructor, Ophthalmology

Bio

BIO

Dr. Mannil is glaucoma and neuro-ophthalmology trained and is currently pursuing advanced clinical experience in pediatric ophthalmology and adult strabismus at Stanford. Her clinical work includes the evaluation and management of complex pediatric ophthalmic and neuro-ophthalmic disorders, developmental and pediatric glaucoma, and strabismus. She also performs adult strabismus surgery, integrating her prior glaucoma and neuro-ophthalmology training with her expanding expertise in pediatric ophthalmology.

Dr. Mannil's academic work spans several high-impact areas, including investigations into the pathophysiology of glaucoma, intracranial pressure dynamics, and advanced imaging biomarkers using OCT, MRI, and machine-learning–based visual field analytics and trans-laminar pressure gradients. She is actively involved in Stanford's glaucoma research ecosystem, contributing to imaging-based phenotyping, structure–function correlation studies, and novel diagnostic paradigms for early glaucoma detection.

Her clinical interests encompass the full spectrum of glaucoma and neuro-ophthalmic disease, with expertise in complex diagnostic evaluations, optic neuropathies, and imaging-heavy neuro-visual syndromes. Dr. Mannil's interest areas include cortical visual disorders, dorsal midbrain syndromes, and secondary optic neuropathies.

Dr. Mannil is committed to global health, having served in multiple high-volume community outreach programs and charitable surgical initiatives in India and Nepal. She has also contributed in developing structured research and clinical documentation systems from India, Nepal, Hongkong and the US as part of data-driven research programs at Stanford.

In addition to clinical and research work, Dr. Mannil is building a strong academic portfolio that includes teaching neuro-ophthalmology and glaucoma concepts to residents and fellows, creating image-rich educational materials, and leading structured journal reviews on topics such as trans-laminar pressure physiology, optic nerve vulnerability, and advanced glaucoma diagnostics.

Her professional interests extend to medical education innovation, patient-facing learning tools, and leveraging large language models for improved ophthalmic communication and global eyecare.

Dr. Mannil has authored multiple scholarly works, book chapters, and presented as invited faculty at Asia Pacific Academy of Ophthalmology conferences, along with multiple paper presentations at AAO, ARVO, ICGS, and various international glaucoma conferences. She was awarded the prestigious Asia Pacific Academy of Ophthalmology achievement award in 2025 and has also been awarded the Woman in Ophthalmology Honor by the Women Ophthalmology Society of India in 2018. She continues to collaborate with leaders in the field. She is the recipient of the APAO Travel Grant and the APAO International Fellowship Program. Her goal is to bridge the gap between glaucoma, neuro-ophthalmology, and digital innovation to advance precision care for complex optic nerve diseases.

Beyond medicine, Dr. Mannil nurtures a deep passion for writing, creative storytelling, interior décor, exploring ancient towns and cultural preservation, particularly through folklore and heritage narratives. She enjoys curating visual art projects, exploring international cuisine, weight training, and capturing travel and nature through photography.

She lives in the Bay Area and loves exploring various cuisines and reviewing rustic cottages with her husband. The most favorite part of her day is playing sidekick to her 5 year old son.

ACADEMIC APPOINTMENTS

- Clinical Instructor, Ophthalmology

HONORS AND AWARDS

- Young Scientist Scholarship Award, International Congress on Glaucoma Surgery Conference (2016)
- Prof Yasua Tano Travel Grant, Asia Pacific Academy of Ophthalmology (2016)
- International Woman Hero in Ophthalmology, Women Ophthalmology Society, India (2018)
- Achievement Award, Asia Pacific Academy of Ophthalmology (2025)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, North American Neuro-Ophthalmology Society (2025 - present)
- Member, Glaucoma Society of India (2015 - present)
- Member, All India Ophthalmological Society (2011 - present)

PROFESSIONAL EDUCATION

- Fellowship, Aravind Eye Hospital, Madurai , Phacoemulsification (2025)
- APAO Fellowship, Jules Stein Eye Institute, UCLA, CA , Glaucoma (2017)
- Fellowship, Narayana Nethralaya, Bangalore (Affliated to Rajiv Gandhi University of Health SCiences,Bangalore) , Glaucoma (2016)
- Residency, National Board of Examinations, New Delhi, India , Ophthalmology (2014)
- Diploma in Ophthalmology, Amrita Institute of Medical Sciences, Kochi, India , Ophthalmology (2012)
- Doctor of Medicine, Amrita Institute of Medical Sciences, Kochi, India , Medicine (2009)

COMMUNITY AND INTERNATIONAL WORK

- Artificial Intelligence in Glaucoma

Publications

PUBLICATIONS

- **Swept-Source Optical Coherence Tomography Angiography (OCTA) Microvascular Dropout (MvD) as a Potential Differentiator Between Perimetric Glaucoma and Degenerative Myopia**
  Lam, J., Han, J., Mannil, S., Xiao, X., Yaisiri, P., Lee, C., Chang, R. T.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2025

- **Developing a privacy-preserving deep learning model for glaucoma detection: a multicentre study with federated learning.** *The British journal of ophthalmology*
  Ran, A. R., Wang, X., Chan, P. P., Wong, M. O., Yuen, H., Lam, N. M., Chan, N. C., Yip, W. W., Young, A. L., Yung, H. W., Chang, R. T., Mannil, S. S., Tham, et al
  2023

- **Diagnostic Accuracy of Frequency-Doubling Technology and the Moorfields Motion Displacement Test for Glaucoma** *OPHTHALMOLOGY GLAUCOMA*
  Richardson, Q. R., Kumar, R. S., Ramgopal, B., V. Rackenchath, M., Devi, A., Mannil, S. S., Nagaraj, S., Moe, C. A., Wittberg, D. M., O'Brien, K. S., Oatts, J. T., Stamper, R. L., Keenan, et al

2023; 6 (3): 239-246

- **A comprehensive update on the use of optical coherence tomography angiography in glaucoma** *INTERNATIONAL OPHTHALMOLOGY*
  Mannil, S. S., Agarwal, A., Conner, I. P., Kumar, R. S.
  2023; 43 (5): 1785-1802

- **Diagnostic accuracy of an iPad application for detection of visual field defects** *EYE*
  Richardson, Q. R., Kumar, R. S., Ramgopal, B., Rackenchath, M. V., Devi, A., Mannil, S. S., Nagaraj, S., Moe, C. A., Wittberg, D. M., O'Brien, K. S., Oatts, J. T., Stamper, R. L., Keenan, et al
  2023; 37 (8): 1690-1695

- **Three-Dimensional Multi-Task Deep Learning Model to Detect Glaucomatous Optic Neuropathy and Myopic Features From Optical Coherence Tomography Scans: A Retrospective Multi-Centre Study.** *Frontiers in medicine*
  Ran, A. R., Wang, X., Chan, P. P., Chan, N. C., Yip, W., Young, A. L., Wong, M. O., Yung, H. W., Chang, R. T., Mannil, S. S., Tham, Y. C., Cheng, C. Y., Chen, et al
  2022; 9: 860574

- **Federated Deep Learning for Classifying Glaucomatous Optic Neuropathy from Optical Coherence Tomography Volumetric Scans: A Privacy-preserving Multi-national Study**
  Ran, A., Wang, X., Chan, P. P., Chan, N. C., Wong, O., Yung, H., Chang, R. T., Mannil, S. S., Tham, Y., Cheng, C., Heng, P., Tham, C. C., Cheung, et al
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2022

- **Comparison of Structural, Functional, Tonometric, and Visual Acuity Testing for Glaucoma A Prospective Diagnostic Accuracy Study** *OPHTHALMOLOGY GLAUCOMA*
  Kumar, R. S., Ramgopal, B., Rackenchath, M., Devi, S. A., Mannil, S. S., Nagaraj, S., Moe, C. A., Wittberg, D. M., O'Brien, K. S., Stamper, R. L., Keenan, J. D.
  2022; 5 (3): 345-352

- **Deep Learning for Glaucoma Detection and Identification of Novel Diagnostic Areas in Diverse Real-World Datasets.** *Translational vision science & technology*
  Noury, E., Mannil, S. S., Chang, R. T., Ran, A. R., Cheung, C. Y., Thapa, S. S., Rao, H. L., Dasari, S., Riyazuddin, M., Chang, D., Nagaraj, S., Tham, C. C., Zadeh, et al
  2022; 11 (5): 11

- **A Multitask Deep-Learning System to Classify Diabetic Macular Edema for Different Optical Coherence Tomography Devices: A Multicenter Analysis.** *Diabetes care*
  Tang, F., Wang, X., Ran, A., Chan, C. K., Ho, M., Yip, W., Young, A. L., Lok, J., Szeto, S., Chan, J., Yip, F., Wong, R., Tang, et al
  2021

- **A Multi-Task Deep-Learning System to Classify Diabetic Macular Edema for Different Optical Coherence Tomography Devices: A Multi-Center Analysis**
  Cheung, C., Tang, F., Ran, A., Tan, G., Ting, D. S. W., Chen, H., Ma, H., Tang, S., Leng, T., Kakavand, S., Mannil, S. S., Chang, R., Liew, et al
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2021

- **A 3D Deep Learning System for Detecting Referable Glaucoma Using Full OCT Macular Cube Scans.** *Translational vision science & technology*
  Russakoff, D. B., Mannil, S. S., Oakley, J. D., Ran, A. R., Cheung, C. Y., Dasari, S., Riyazzuddin, M., Nagaraj, S., Rao, H. L., Chang, D., Chang, R. T.
  2020; 9 (2): 12

- **A 3D Deep Learning System for Detecting Referable Glaucoma Using Full OCT Macular Cube Scans** *TRANSLATIONAL VISION SCIENCE & TECHNOLOGY*
  Russakoff, D. B., Mannil, S. S., Oakley, J. D., Ran, A., Cheung, C. Y., Dasari, S., Riyazzuddin, M., Nagaraj, S., Rao, H. L., Chang, D., Chang, R. T.
  2020; 9 (2)

- **Towards multi-center glaucoma OCT image screening with semi-supervised joint structure and function multi-task learning.** *Medical image analysis*
  Wang, X. n., Chen, H. n., Ran, A. R., Luo, L. n., Chan, P. P., Tham, C. C., Chang, R. T., Mannil, S. S., Cheung, C. Y., Heng, P. A.
  2020; 63: 101695

- **Detection of glaucomatous optic neuropathy with spectral-domain optical coherence tomography: a retrospective training and validation deep-learning analysis** *LANCET DIGITAL HEALTH*

Ran, A., Cheung, C. Y., Wang, X., Chen, H., Luo, L., Chan, P. P., Wong, M. O. M., Chang, R. T., Mannil, S. S., Young, A. L., Yung, H., Pang, C., Heng, et al

2019; 1 (4): E172–E182

- **Detection of glaucomatous optic neuropathy with spectral-domain optical coherence tomography: a retrospective training and validation deep-learning analysis.** *The Lancet. Digital health*

  Ran, A. R., Cheung, C. Y., Wang, X., Chen, H., Luo, L. Y., Chan, P. P., Wong, M. O., Chang, R. T., Mannil, S. S., Young, A. L., Yung, H. W., Pang, C. P., Heng, et al

  2019; 1 (4): e172-e182

- **Humphrey visual field indices as predictors of subspecialty referral in high-risk versus low-risk glaucoma suspects**

  Garcia, G. A., Mannil, S. S.

  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019

- **A 3D Deep Learning System for Detecting Referrable Glaucoma Using Full OCT Macular Cube Scans**

  Russakoff, D. B., Mannil, S. S., Oakley, J. D., Chang, R.

  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019

- **A 3D Deep Learning System for Detecting Glaucomatous Optic Neuropathy from Volumetric and En Face Optical Coherence Tomography Scans**

  Ran, A., Wang, X., Luo, L., Chan, P., Chang, R., Mannil, S., Chen, H., Heng, P., Tham, C. C. Y., Cheung, C.

  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019

- **Diagnostic Assessment of RNFL Segmentation using a Hybrid Deep Learning Approach**

  Oakley, J. D., Mannil, S. S., Russakoff, D. B., Chang, R.

  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019

- **Novel deep learning based algorithm for Macula and Optic Nerve Head segmentation versus Cirrus Optical Coherence Tomography in identifying glaucoma**

  Mannil, S., Oakley, J. D., Russakoff, D. B., Chang, R.

  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2019

- **Rate of Visual Field Decay in Glaucomatous Eyes with Acquired Pits of the Optic Nerve**

  Lin, M., Alizadeh, R., Kim, J., Sudhakaran, S., Morales, E., Hirunpotravong, P., Sharifipour, F., Caprioli, J.

  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2018

- **Discriminant Function of Optical Coherence Tomography Angiography to Determine Disease Severity in Glaucoma** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*

  Kumar, R. S., Anegondi, N., Chandapura, R. S., Sudhakaran, S., Kadambi, S. V., Rao, H. L., Aung, T., Roy, A.

  2016; 57 (14): 6079-6088