



Sean Ku Wang

Clinical Instructor, Ophthalmology

Bio

ACADEMIC APPOINTMENTS

- Clinical Instructor, Ophthalmology

HONORS AND AWARDS

- Career Award for Medical Scientists, Burroughs Wellcome Fund (2026)
- Emerging-Generation Award, American Society for Clinical Investigation (2026)
- Young Scientist Retina Research Grant, Juliette RP Vision Foundation (2024)
- AUPO/RPB Resident and Fellow Research Forum, Association of University Professors of Ophthalmology (2024)
- Career-Starter Research Grant, Knights Templar Eye Foundation (2023)
- Healthcare 30 Under 30, Forbes (2021)
- National Eye Institute T32 Postdoctoral Fellowship, Stanford University (2021)
- STAT Wunderkind, STAT News (2020)
- Elizabeth D. Hay Prize for Basic Science Research, Harvard Medical School (2019)
- HHMI Medical Research Fellowship, Howard Hughes Medical Institute (2018)
- J.E. Wallace Sterling Award for Scholastic Achievement, Stanford University (2014)

PROFESSIONAL EDUCATION

- Fellowship, Massachusetts Eye and Ear, Harvard Medical School
- Postdoc, Stanford University
- Residency, Byers Eye Institute at Stanford
- M.D., Harvard Medical School
- B.S., Stanford University

Publications

PUBLICATIONS

- **RNA delivery to the corneal endothelium using charge-altering releasable transporters.** *Science advances*
Wang, S. K., Li, Z., Shah, S. H., Edwards, Q. A., Bouffard, R., Hines, E. S., Inventarza, J. A., Korte, S., Lawrence, M. S., Song, E., Helmy, E., Amaya, L., Kang, et al
2026; 12 (34): eady8161
- **Multomics and deep learning dissect regulatory syntax in human development.** *Nature*

- Liu, B. B., Jessa, S., Kim, S. H., Ng, Y. T., Higashino, S. I., Marinov, G. K., Chen, D. C., Parks, B. E., Li, L., Nguyen, T. C., Wang, A. T., Wang, S. K., Tan, et al
2026
- **P-Score Variability as a Function of Retinopathy of Prematurity Severity.** *Investigative ophthalmology & visual science*
Shah, S. V., Brant, A. R., Zhao, C. S., Wang, S. K., Lin, J. B., Koo, E., Cakir, B., Deboer, C. M., Ahya, A., Wallace, H., Moshfeghi, D. M.
2026; 67 (2): 59
 - **Deep learning-guided design of cell type-specific AAV promoters.** *bioRxiv : the preprint server for biology*
Wang, S. K., Deng, B., Nair, S., Ren, X., Li, J., Tijerina, J., Prakhar, P., Luo, Z., Nnebe, C., Kim, S. H., Zhou, Y., Shah, S. H., Davis, et al
2026
 - **Single-cell multiome and enhancer connectome of human retinal pigment epithelium and choroid nominate causal variants in macular degeneration.** *Cell reports*
Wang, S. K., Li, J., Nair, S., Kosaraju, R., Chen, Y., Zhang, Y., Kundaje, A., Liu, Y., Wang, N., Chang, H. Y.
2026; 45 (1): 116814
 - **Genetic elements promote retention of extrachromosomal DNA in cancer cells.** *Nature*
Sankar, V., Hung, K. L., Gnanasekar, A., Wong, I. T., Shi, Q., Kraft, K., Jones, M. G., He, B. J., Yan, X., Belk, J. A., Liu, K. J., Agarwal, S., Wang, et al
2025
 - **Discrete Immolative Guanidinium Transporters deliver mRNA to specific organs and red blood cells.** *Nature communications*
Li, Z., Ee, A., Amaya, L., Hamad, J. L., Yadav, P. K., Wang, S. K., Chang, H. Y., Wender, P. A.
2025; 16 (1): 7055
 - **ERG responses to high-frequency flickers require FAT3 signaling in mouse retinal bipolar cells.** *The Journal of general physiology*
Avilés, E. C., Wang, S. K., Patel, S., Cordero, S., Shi, S., Lin, L., Kefalov, V. J., Goodrich, L. V., Cepko, C. L., Xue, Y.
2025; 157 (2)
 - **Linking Iris Cis-Regulatory Variants to Primary Angle-Closure Glaucoma Via Clinical Imaging and Multiomics.** *Investigative ophthalmology & visual science*
Li, J., Chen, Y., Wang, W., Zhang, Y., Su, G., Wang, S. K., Zhang, Y., Yao, Y., Wu, S., Lu, W., Zhang, K., Qiao, C., Li, et al
2024; 65 (14): 18
 - **Comparing a Head-Mounted Smartphone Visual Field Analyzer to Standard Automated Perimetry in Glaucoma: A Prospective Study.** *Journal of glaucoma*
Wang, S. K., Tran, E. M., Yan, W., Kosaraju, R., Sun, Y., Chang, R. T.
2024
 - **Organ- and Cell-Selective Delivery of mRNA In Vivo Using Guanidinylated Serinol Charge-Altering Releasable Transporters.** *Journal of the American Chemical Society*
Li, Z., Amaya, L., Ee, A., Wang, S. K., Ranjan, A., Waymouth, R. M., Chang, H. Y., Wender, P. A.
2024
 - **Ocular Ischemic Syndrome in the Setting of Normal Carotid Duplex Ultrasound.** *Retinal cases & brief reports*
Ghoraba, H. H., Yu, M., Yu, G., Wang, S., Or, C., Karaca, I., Nguyen, Q. D.
2023
 - **Charge-altering releasable transporters enhance mRNA delivery in vitro and exhibit in vivo tropism.** *Nature communications*
Li, Z., Amaya, L., Pi, R., Wang, S. K., Ranjan, A., Waymouth, R. M., Blish, C. A., Chang, H. Y., Wender, P. A.
2023; 14 (1): 6983
 - **Telemedicine retinopathy of prematurity severity score (TeleROP-SS) versus modified activity score (mROP-ActS) retrospective comparison in SUNDROP cohort.** *Scientific reports*
Xu, C. L., Adu-Brimpong, J., Moshfeghi, H. P., Rosenblatt, T. R., Yu, M. D., Ji, M. H., Wang, S. K., Zaidi, M., Ghoraba, H., Michalak, S., Callaway, N. F., Kumm, J., Nudleman, et al
2023; 13 (1): 15219
 - **Chromophore supply modulates cone function and survival in retinitis pigmentosa mouse models.** *Proceedings of the National Academy of Sciences of the United States of America*
Xue, Y., Sun, X., Wang, S. K., Collin, G. B., Kefalov, V. J., Cepko, C. L.

2023; 120 (23): e2217885120

- **Effective field of view of wide-field fundus photography in the Stanford University Network for Diagnosis of Retinopathy of Prematurity (SUNDROP).** *Scientific reports*
Ji, M. H., Zaidi, M., Bodnar, Z., Wang, S. K., Kumm, J., Moshfeghi, D. M.
2022; 12 (1): 19276
- **Single-cell multiome of the human retina and deep learning nominate causal variants in complex eye diseases.** *Cell genomics*
Wang, S. K., Nair, S., Li, R., Kraft, K., Pampari, A., Patel, A., Kang, J. B., Luong, C., Kundaje, A., Chang, H. Y.
2022; 2 (8)
- **Engineering circular RNA for enhanced protein production.** *Nature biotechnology*
Chen, R., Wang, S. K., Belk, J. A., Amaya, L., Li, Z., Cardenas, A., Abe, B. T., Chen, C., Wender, P. A., Chang, H. Y.
2022
- **Modeling absolute zone size in retinopathy of prematurity in relation to axial length.** *Scientific reports*
Wang, S. K., Korot, E., Zaidi, M., Ji, M. H., Al-Moujahed, A., Callaway, N. F., Kumm, J., Moshfeghi, D. M.
2022; 12 (1): 4717
- **Targeting Microglia to Treat Degenerative Eye Diseases.** *Frontiers in immunology*
Wang, S. K., Cepko, C. L.
2022; 13: 843558
- **Augmentation of CD47-SIRPalpha signaling protects cones in genetic models of retinal degeneration.** *JCI insight*
Wang, S. K., Xue, Y., Cepko, C. L.
2021
- **AAV-Txnip prolongs cone survival and vision in mouse models of retinitis pigmentosa** *ELIFE*
Xue, Y., Wang, S. K., Rana, P., West, E. R., Hong, C. M., Feng, H., Wu, D. M., Cepko, C. L.
2021; 10
- **Engineering adeno-associated viral vectors to evade innate immune and inflammatory responses** *SCIENCE TRANSLATIONAL MEDICINE*
Chan, Y., Wang, S. K., Chu, C. J., Copland, D. A., Letizia, A. J., Verdera, H., Chiang, J. J., Sethi, M., Wang, M. K., Neidermyer, W. J., Chan, Y., Lim, E. T., Graveline, et al
2021; 13 (580)
- **Nrf2 overexpression rescues the RPE in mouse models of retinitis pigmentosa** *JCI INSIGHT*
Wu, D. M., Ji, X., Ivanchenko, M., Chung, M., Piper, M., Rana, P., Wang, S. K., Xue, Y., West, E., Zhao, S. R., Xu, H., Cicconet, M., Xiong, et al
2021; 6 (2)
- **In Situ Detection of Adeno-associated Viral Vector Genomes with SABER-FISH** *MOLECULAR THERAPY-METHODS & CLINICAL DEVELOPMENT*
Wang, S. K., Lapan, S. W., Hong, C. M., Krause, T. B., Cepko, C. L.
2020; 19: 376-386
- **Microglia modulation by TGF-beta 1 protects cones in mouse models of retinal degeneration** *JOURNAL OF CLINICAL INVESTIGATION*
Wang, S. K., Xue, Y., Cepko, C. L.
2020; 130 (8): 4360-4369
- **Meeting the need for corrective spectacles in visually impaired Chinese school children: the potential of ready-made spectacles** *BRITISH JOURNAL OF OPHTHALMOLOGY*
Zhu, Z., Ellwein, L. B., Wang, S. K., Zhao, J., He, M.
2019; 103 (8): 1106-1111
- **Circumventing cellular immunity by miR142-mediated regulation sufficiently supports rAAV-delivered OVA expression without activating humoral immunity** *JCI INSIGHT*
Xiao, Y., Muhuri, M., Li, S., Qin, W., Xu, G., Luo, L., Li, J., Letizia, A. J., Wang, S. K., Chan, Y., Wang, C., Fuchs, S. P., Wang, et al
2019; 4 (13)
- **Soluble CX3CL1 gene therapy improves cone survival and function in mouse models of retinitis pigmentosa** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

- Wang, S. K., Xue, Y., Rana, P., Hong, C. M., Cepko, C. L.
2019; 116 (20): 10140-10149
- **AAV cis-regulatory sequences are correlated with ocular toxicity** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Xiong, W., Wu, D. M., Xue, Y., Wang, S. K., Chung, M. J., Ji, X., Rana, P., Zhao, S. R., Mai, S., Cepko, C. L.
2019; 116 (12): 5785-5794
 - **Mineralocorticoid Receptor Antagonists in Central Serous Chorioretinopathy: A Meta-Analysis of Randomized Controlled Trials.** *Ophthalmology. Retina*
Wang, S. K., Sun, P., Tandias, R. M., Seto, B. K., Arroyo, J. G.
2019; 3 (2): 154-160
 - **Incidence of and Factors Associated With Myopia and High Myopia in Chinese Children, Based on Refraction Without Cycloplegia** *JAMA OPHTHALMOLOGY*
Wang, S. K., Guo, Y., Liao, C., Chen, Y., Su, G., Zhang, G., Zhang, L., He, M.
2018; 136 (9): 1017-1024
 - **Qualitative and quantitative assessment of posterior segment optical coherence tomography images using standard photos: the Liwan Eye Study** *BMJ OPEN*
Wang, S. K., Guo, X., Xiao, O., Chen, Y., Liu, R., Huang, W., He, M.
2017; 7 (12): e017923
 - **Trends in Hospitalization and Incidence Rate for Syphilitic Uveitis in the United States from 1998-2009.** *American journal of ophthalmology*
Albini, T., Callaway, N. F., Pershing, S., Wang, S. K., Moshfeghi, A. A., Moshfeghi, D. M.
2017
 - **Comparison of Peristat Online Perimetry with the Humphrey Perimetry in a Clinic-Based Setting** *TRANSLATIONAL VISION SCIENCE & TECHNOLOGY*
Lowry, E. A., Hou, J., Hennein, L., Chang, R. T., Lin, S., Keenan, J., Wang, S. K., Ianchulev, S., Pasquale, L. R., Han, Y.
2016; 5 (4)
 - **Hoxb5 marks long-term haematopoietic stem cells and reveals a homogenous perivascular niche** *NATURE*
Chen, J. Y., Miyanishi, M., Wang, S. K., Yamazaki, S., Sinha, R., Kao, K. S., Seita, J., Sahoo, D., Nakauchi, H., Weissman, I. L.
2016; 530 (7589): 223-?
 - **SUNDROP: six years of screening for retinopathy of prematurity with telemedicine.** *Canadian journal of ophthalmology. Journal canadien d'ophtalmologie*
Wang, S. K., Callaway, N. F., Wallenstein, M. B., Henderson, M. T., Leng, T., Moshfeghi, D. M.
2015; 50 (2): 101-106
 - **Expression of glypican 3 enriches hepatocellular carcinoma development-related genes and associates with carcinogenesis in cirrhotic livers** *CARCINOGENESIS*
Liu, X., Wang, S. K., Zhang, K., Zhang, H., Pan, Q., Liu, Z., Pan, H., Xue, L., Yen, Y., Chu, P. G.
2015; 36 (2): 232-242
 - **Gender differences in compensation in academic medicine: the results from four neurological specialties within the University of California Healthcare System** *SCIENTOMETRICS*
Henderson, M. T., Fijalkowski, N., Wang, S. K., Maltenfort, M., Zheng, L. L., Ratliff, J., Moshfeghi, A. A., Moshfeghi, D. M.
2014; 100 (1): 297-306
 - **Stanford University Network for Diagnosis of Retinopathy of Prematurity (SUNDROP): five years of screening with telemedicine.** *Ophthalmic surgery, lasers & imaging retina*
Fijalkowski, N., Zheng, L. L., Henderson, M. T., Wang, S. K., Wallenstein, M. B., Leng, T., Moshfeghi, D. M.
2014; 45 (2): 106-113
 - **An emerging treatment option for glaucoma: Rho kinase inhibitors.** *Clinical ophthalmology (Auckland, N.Z.)*
Wang, S. K., Chang, R. T.
2014; 8: 883-890
 - **Discovery and diagnostic value of a novel oncofetal protein: glypican 3.** *Advances in anatomic pathology*

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- **A new paradigm for incorporating the joint statement screening guidelines for retinopathy of prematurity into clinical practice: outcomes from a quaternary referral program.** *Ophthalmic surgery, lasers & imaging retina*
Henderson, M. T., Wang, S. K., Moshfeghi, D. M.
2013; 44 (5): 442-447