Stanford



Charles Yu MD

Assistant Professor of Ophthalmology

CLINICAL OFFICE (PRIMARY)

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Bio

BIO

Dr. Yu is a board certified ophthalmologist and fellow of the American Academy of Ophthalmology. In addition to treating patients with cataract, cornea and other anterior segment disorders, he teaches residents and leads an active research laboratory focused on developing new treatments for cornea blindness. His research is supported by the National Eye Institute and the U.S. Department of Defense.

CLINICAL FOCUS

- Cornea
- Cataract
- Cornea and External Diseases Specialist

ACADEMIC APPOINTMENTS

- Assistant Professor-Univ Med Line, Ophthalmology

HONORS AND AWARDS

- Vision Research Program, U.S. Department of Defense (2019)
- Dean's Clinical Translational Research Award, University of Illinois Chicago (2018)
- K08 Early Career Award, National Eye Institute (2017)
- Golden Apple Teaching Award, Illinois Eye and Ear Infirmary (2016)
- Eversight Research Award, Eversight (2015)
- K12 Scholar, University of Illinois Chicago (2015)
- Member, Alpha Omega Alpha (2010)
- Regents Scholar, University of California (2009)

PROFESSIONAL EDUCATION

- Fellowship: Weill Cornell Medical College Dept of Ophthalmology (2015) NY
- Residency: Stanford University Ophthalmology Residency (2014) CA

- Internship: Santa Clara Valley Medical Center Dept of Medicine (2011) CA
- Medical Education: University of California Davis School of Medicine (2010) CA
- Board Certification: Ophthalmology, American Board of Ophthalmology (2016)

PATENTS

- Charles Yu, Mark Rosenblatt. "United States Patent 11446137 Flexible keratoprosthesis devices and uses there of", University of Illinois, Sep 20, 2022
- Charles Yu,. "United States Patent 11376163 Devices, systems, and methods for vision restoration", Charles Yu, Mark Rosenblatt, Songbin Gong, Sarah Yoonji Shim, Jul 5, 2022

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Corneal opacity is a leading cause of blindness. Cornea transplantation is at high risk of rejection when there is pre-existing vascularization of the cornea and in pediatric patients. Cornea transplant shortage remains a worldwide problem with millions on waitlists. Our laboratory is developing multiple strategies for treatment of corneal blindness. We are testing advanced materials and designs for keratoprostheses with the goal of reducing complications and easing surgical implantation. We are also developing intraocular electronic display prostheses for bypassing cornea opacity, a novel strategy that could allow for high quality vision without corneal clarity.

Publications

PUBLICATIONS

- **A novel IDS variant associated with an isolated ocular phenotype in Hunter syndrome.** *Documenta ophthalmologica. Advances in ophthalmology*
  Yeh, T. C., Velez, G., Lee, S. H., Ngo, G. H., Kumar, A., Al-Moujahed, A., Yu, C., Leung, L. S., Mruthyunjaya, P., Mahajan, V. B.
  2026
- **Update on pellucid marginal degeneration.** *Graefe's archive for clinical and experimental ophthalmology = Albrecht von Graefes Archiv fur klinische und experimentelle Ophthalmologie*
  Vieira, I. V., Fan, V. H., Yu, C. Q.
  2025
- **In Vivo Stability of Electronic Intraocular Lens Implant for Corneal Blindness.** *Translational vision science & technology*
  Vieira, I. V., Fan, V. H., Wiemer, M. W., Lemoff, B. E., Sood, K. S., Mussa, M. J., Yu, C. Q.
  2025; 14 (6): 33
- **Enhanced genotype-phenotype analysis using multimodal adaptive optics and 3D protein structure in Bietti Crystalline Dystrophy.** *American journal of ophthalmology case reports*
  Kumar, A., Sun, Y. J., Rasmussen, D. K., Hargrave, A., Phillips, C., Vu, J. T., Costa, M. G., Leung, L. B., Yu, C., Dubra, A., Mahajan, V. B.
  2025; 38: 102312
- **Design, Production and Study of Flexible Acrylic Keratoprosthesis.** *Current eye research*
  Fan, V. H., Sun, M. G., Al-Qahtani, A. F., Vieira, I. V., Yu, C. Q.
  2025: 1-7
- **Outcome after Intraoperative Ejection of Descemet Membrane Endothelial Keratoplasty Graft: A Case Report** *CASE REPORTS IN OPHTHALMOLOGY*
  Sood, K. S., Ma, K. K., Yu, C. Q.
  2025; 16 (1): 37-40
- **Primary cilia formation requires the Leigh syndrome-associated mitochondrial protein NDUFAF2.** *The Journal of clinical investigation*
  Lo, C. H., Liu, Z., Chen, S., Lin, F., Berneshawi, A. R., Yu, C. Q., Koo, E. B., Kowal, T. J., Ning, K., Hu, Y., Wang, W. J., Liao, Y. J., Sun, et al
  2024; 134 (13)

- **A Randomized Trial of Topical Fibrinogen-Depleted Human Platelet Lysate Treatment of Dry Eye Secondary to Chronic Graft-versus-Host Disease.** *Ophthalmology science*
  Sugar, A., Hussain, M., Chamberlain, W., Dana, R., Kelly, D. P., Ta, C., Irvine, J., Daluvoy, M., Perez, V., Olson, J., Jhanji, V., Walts, T. A., Stulting, et al
  2022; 2 (3): 100176

- **Chronic bilateral multifocal superficial keratitis in a pediatric patient** *American Journal of Ophthalmology Case Reports*
  Vieira, I. V., Fan, V. H., Duan, C., Yu, C. Q.
  2022

- **Temperature Elevation in the Human Eye Due To Intraocular Projection Prosthesis Device.** *Journal of thermal science and engineering applications*
  Gongal, D., Thakur, S., Panse, A., Stark, J. A., Yu, C. Q., Foster, C. D.
  2021; 13 (6)

- **Axisymmetric Thermal Finite Element Analysis of Effects of Intraocular Projector in the Human Eye.** *American journal of undergraduate research*
  Stark, J. A., Foster, C. D., Yu, C.
  2021; 17 (4): 49-57

- **Transgenic models for investigating the nervous system: Currently available neurofluorescent reporters and potential neuronal markers.** *Biochimica et biophysica acta. General subjects*
  Yamakawa, M., Santosa, S. M., Chawla, N., Ivakhnitskaia, E., Del Pino, M., Giakas, S., Nadel, A., Bontu, S., Tambe, A., Guo, K., Han, K. Y., Cortina, M. S., Yu, et al
  2020: 129595

- **Thermal analysis of intraocular electronic display projector visual prosthesis** *Numerical Heat Transfer, Part A: Applications*
  Gongal, D., Thakur, S., Panse, A., Pawar, R., Yu, C. Q., Foster, C. D.
  2020; 78 (5)

- **Characterization of an Electronic Corneal Prosthesis System.** *Current eye research*
  Shim, S. Y., Gong, S., Fan, V. H., Rosenblatt, M. I., Al-Qahtani, A. F., Sun, M. G., Zhou, Q., Kanu, L., Vieira, I. V., Yu, C. Q.
  2019

- **Feasibility of Intraocular Projection for Treatment of Intractable Corneal Opacity** *CORNEA*
  Shim, S. Y., Gong, S., Rosenblatt, M. I., Palanker, D., Al-Qahtani, A., Sun, M. G., Zhou, Q., Kanu, L., Chau, F., Yu, C. Q.
  2019; 38 (4): 523–27

- **Late detachment of Descemet's membrane after penetrating keratoplasty for pellucid marginal degeneration.** *American journal of ophthalmology case reports*
  Lin, J., Hassanaly, S., Hyde, R. A., Brown, J., Yoon, D., Yu, C. Q.
  2019; 13: 151-153

- **Season and Allergic Conjunctivitis** *Cornea: Fundamentals, Diagnosis and Management*
  Yu, C. Q., Ta, C. N.
  Elsevier.2019; 4: 526–532

- **Fluorescent reporter transgenic mice for in vivo live imaging of angiogenesis and lymphangiogenesis.** *Angiogenesis*
  Doh, S. J., Yamakawa, M., Santosa, S. M., Montana, M., Guo, K., Sauer, J. R., Curran, N., Han, K. Y., Yu, C., Ema, M., Rosenblatt, M. I., Chang, J. H., Azar, et al
  2018

- **Potential lymphangiogenesis therapies: Learning from current antiangiogenesis therapies-A review.** *Medicinal research reviews*
  Yamakawa, M., Doh, S. J., Santosa, S. M., Montana, M., Qin, E. C., Kong, H., Han, K. Y., Yu, C., Rosenblatt, M. I., Kazlauskas, A., Chang, J. H., Azar, D. T.
  2018

- **3D printing for low cost, rapid prototyping of eyelid crutches.** *Orbit (Amsterdam, Netherlands)*
  Sun, M. G., Rojdamrongratana, D., Rosenblatt, M. I., Aakalu, V. K., Yu, C. Q.
  2018: 1-5

- **Iris suture fixation: Push-knot needle.** *Journal of cataract and refractive surgery*
  Liu, F., Zhou, Q., Yu, C. Q., Guaiquil, V., Geng, Y., Chen, X., Rosenblatt, M. I.
  2017; 43 (4): 456-458
- **Subjective Quality of Vision After Myopic LASIK: Prospective 1-Year Comparison of Two Wavefront-Guided Excimer Lasers.** *Journal of refractive surgery*
  Yu, C. Q., Manche, E. E.
  2016; 32 (4): 224-229
- **Biomaterials: Impact on Keratoprosthesis Implantation** *Current Ophthalmology Reports*
  Li, J., Yu, C. Q.
  2016; 4 (3): 106-115
- **Biocompatibility of poly(ethylene glycol) and poly(acrylic acid) interpenetrating network hydrogel by intrastromal implantation in rabbit cornea.** *Journal of biomedical materials research. Part A*
  Zheng, L. L., Vanchinathan, V., Dalal, R., Noolandi, J., Waters, D. J., Hartmann, L., Cochran, J. R., Frank, C. W., Yu, C. Q., Ta, C. N.
  2015; 103 (10): 3157-3165
- **Comparison of 2 femtosecond lasers for flap creation in myopic laser in situ keratomileusis: One-year results.** *Journal of cataract and refractive surgery*
  Yu, C. Q., Manche, E. E.
  2015; 41 (4): 740-748
- **Day 1 Wavefront Aberrometry for Prediction of Refractive Outcomes at Year 1 in Myopic LASIK** *JOURNAL OF REFRACTIVE SURGERY*
  Yu, C. Q., Manche, E. E.
  2015; 31 (3): 170-174
- **Successful DMEK After Intraoperative Graft Inversion** *CORNEA*
  Yu, C. Q., Ta, C. N., Terry, M. A., Lin, C. C.
  2015; 34 (1): 97-98
- **Mobile Virtual Reality for Ophthalmic Image Display and Diagnosis** *Journal of Mobile Technology in Medicine*
  Zheng, L., He, L., Yu, C. Q.
  2015; 4 (3): 35–38
- **Subretinal fluid is common in experimental non-arteritic anterior ischemic optic neuropathy** *EYE*
  Yu, C., Ho, J. K., Liao, Y. J.
  2014; 28 (12): 1494-1501
- **A Comparison of LASIK Flap Thickness and Morphology Between the Intralase 60-and 150-kHz Femtosecond Lasers** *JOURNAL OF REFRACTIVE SURGERY*
  Yu, C. Q., Manche, E. E.
  2014; 30 (12): 827-830
- **Prevention and treatment of injection-related endophthalmitis** *GRAEFES ARCHIVE FOR CLINICAL AND EXPERIMENTAL OPHTHALMOLOGY*
  Yu, C. Q., Ta, C. N.
  2014; 252 (7): 1027-1031
- **Comparison of 2 wavefront-guided excimer lasers for myopic laser in situ keratomileusis: One-year results** *JOURNAL OF CATARACT AND REFRACTIVE SURGERY*
  Yu, C. Q., Manche, E. E.
  2014; 40 (3): 412-422
- **Prevention of postcataract endophthalmitis: evidence-based medicine** *CURRENT OPINION IN OPHTHALMOLOGY*
  Yu, C. Q., Ta, C. N.
  2012; 23 (1): 19-25
- **Feeding the vertebrate retina from the Cambrian to the Tertiary** *JOURNAL OF ZOOLOGY*
  Yu, C. Q., Schwab, I. R., Dubielzig, R. R.

2009; 278 (4): 259–69

- **Vascular endothelial growth factor mediates corneal nerve repair** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
  Yu, C. Q., Zhang, M., Matis, K. I., Kim, C., Rosenblatt, M. I.
  2008; 49 (9): 3870-3878
- **Transgenic corneal neurofluorescence in mice: A new model for in vivo investigation of nerve structure and regeneration** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
  Yu, C. Q., Rosenblatt, M. I.
  2007; 48 (4): 1535-1542