



Paul A. Sieving, M.D., Ph.D.

Clinical Interests

Paul Sieving, MD, PhD, is Professor of Ophthalmology at the UC Davis. He is recognized internationally for his expertise in clinical conditions of genetic retinal and macular degeneration. These can affect all ages from birth through childhood to adult. They are termed Inherited Retinal Dystrophies (IRD) and include retinitis pigmentosa, Stargardt macular degeneration, cone-rod degeneration and other retinal genetic conditions. He specializes in diagnosing patients with these conditions and works with them to understand their clinical course and consequences. These conditions can be genetically inherited and have family implications, and the medical evaluation may include DNA genotyping to search for the genetic cause. Additional specialized testing includes the electroretinogram (ERG), visual field sensitivity, and retinal imaging studies of rod and cone photoreceptors using adaptive optics photography and OCT imaging. Dr. Sieving limits his practice to IRD conditions and does not accept patients with diabetic retinopathy or inflammatory conditions.

Research/Academic Interests

Dr. Sieving's research focuses on working with patients who have genetic retinal diseases and on developing laboratory approaches to repairing injured retinal cells and tissues. He works to understand eye diseases toward developing therapies for inherited retinal dystrophies. He established the Center for Ocular Regenerative Therapy (CORT) at UC Davis Health in 2020. CORT physicians and scientists are developing gene and stem cell therapies for these conditions. He currently is conducting a human gene therapy clinical trial for X-Linked Retinoschisis (XLRs) disease. Dr. Sieving holds elected membership in the National Academy of Medicine USA, in 2006, and in the German Academy of Science in 2013. He has published more than 250 scientific papers and book chapters. He previously was Director of the National Eye Institute at NIH.

Title

Neil and MJ Kelly Presidential Chair
Director, Clinical Service for Inherited Retinal Dystrophies
Research Director, Department of Ophthalmology
Director, Center for Ocular Regenerative Therapy (CORT)
Director, Center for Visual Sciences (CVS)
Professor, Department of Ophthalmology

Specialty

Inherited Retinal and Macular Dystrophies

Department

[Ophthalmology & Vision Science](#)

Division

Ophthalmology



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| Education | M.D., University of Illinois College of Medicine, Chicago IL 1978 Ph.D., Biomedical Engineering, University of Illinois Graduate School, Chicago IL 1981 M.S., Nuclear Physics, Yale University, New Haven CT 1973 J.D. Degree Program, Law, Yale Law School, New Haven CT 1973-1974 B.A., Valparaiso University, Valparaiso IN 1970 |
| Internships | University of Illinois College of Medicine, Chicago IL 1978-1979 |
| Residency | Ophthalmology, University of Illinois College of Medicine, Chicago IL 1979-1982 |
| Fellowships | Ophthalmology/Inherited Retinal Dystrophies, Harvard Medical School/Massachusetts Eye and Ear Infirmary, Boston MA 1984-1985 Ophthalmology / Retinal Physiology, UC San Francisco, San Francisco CA 1982-1984 |
| Board Certifications | American Board of Ophthalmology |
| Professional Memberships | American Academy of Ophthalmology ClinGen - Clinical Domain Working Groups, X-linked Inherited Retinal Disease Variant Curation Expert Panel European Research Network (ERN) – EYE, Advisory Committee German National Academy of Science Institute of Molecular and Clinical Ophthalmology - Advisory Board, Basel, Switzerland U.S. National Academy of Medicine |
| Honors and Awards | Distinguished Service Award, American Academy of Ophthalmology, 2020 SOI Honorary Award in Ophthalmology, Societa Oftalmologica Italiana, Milan, Italy, 2016 German National Academy of Sciences, Elected, 2013 National Academy of Medicine, USA, Elected member, 2006 Pisart Vision Award, Lighthouse for the Blind International, New York, 2005 |



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Select Recent Publications

Complete List of Published Work:

<https://www.ncbi.nlm.nih.gov/sites/myncbi/11MhpmLS36GQW/bibliography/49385352/public/?sort=date%26amp%3Bdirection=ascending>

Vijayasarathy C, Sardar Pasha SPB, Sieving PA. Of men and mice: Human X-linked retinoschisis and fidelity in mouse modeling. *Prog Retin Eye Res.* 2021 Aug 11:100999. doi:10.1016/j.preteyeres.2021.100999. Epub ahead of print. PMID:34390869.

Vijayasarathy C, Zeng Y, Brooks MJ, Fariss RN, Sieving PA. Genetic Rescue of X-Linked Retinoschisis Mouse (Rsl-/y) Retina Induces Quiescence of the Retinal Microglial Inflammatory State Following AAV8-RS1 Gene Transfer and Identifies Gene Networks Underlying Retinal Recovery. *Hum Gene Ther.* 2021 Jul;32(13-14):667-681. doi:10.1089/hum.2020.213. Epub 2020 Dec 14. PMID:33019822.

Mishra A, Vijayasarathy C, Cukras CA, Wiley HE, Sen HN, Zeng Y, Wei LL, Sieving PA. Immune function in X-linked retinoschisis subjects in an AAV8-RS1 phase I/IIa gene therapy trial. *Mol Ther.* 2021 Jun 2;29(6):2030-2040. doi:10.1016/j.ymthe.2021.02.013. Epub 2021 Feb 15. PMID:33601057.

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Paul A. Sieving, M.D., Ph.D.

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Song H, Bush RA, Zeng Y, Qian H, Wu Z, Sieving PA. Trans-ocular Electric Current In Vivo Enhances AAV-Mediated Retinal Gene Transduction after Intravitreal Vector Administration. *Mol Ther Methods Clin Dev*. 2018 Dec 21;13:77-85. doi:10.1016/j.omtm.2018.12.006. PMID: 30719486.

Heymann JB, Vijayasarathy C, Huang RK, Dearborn AD, Sieving PA, Steven AC. Cryo-EM of retinoschisin branched networks suggests an intercellular adhesive scaffold in the retina. *J Cell Biol*. 2019 Mar 4;218(3):1027-1038. doi:10.1083/jcb.201806148. Epub 2019 Jan 10. PMID:30630865.

Cukras C, Wiley HE, Jeffrey BG, Sen HN, Turriff A, Zeng Y, Vijayasarathy C, Marangoni D, Ziccardi L, Kjellstrom S, Park TK, Hiriyanna S, Wright JF, Colosi P, Wu Z, Bush RA, Wei LL, Sieving PA. Retinal AAV8-RS1 Gene Therapy for X-Linked Retinoschisis: Initial Findings from a Phase I/IIa Trial by Intravitreal Delivery. *Mol Ther*. 2018 Sep 5;26(9):2282-2294. doi:10.1016/j.ymthe.2018.05.025. Epub 2018 Jul 7. PMID:30196853.

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