Stanford

Vinit B. Mahajan, MD, PhD

Professor of Ophthalmology

CONTACT INFORMATION

- **ADMINISTRATIVE CONTACT (No clinic appointments)**

  Sara Horca - Administrative Associate IV

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Bio

BIO

Dr. Mahajan is a Professor and vitreoretinal surgeon and scientist in the Department of Ophthalmology at Stanford University. He directs the NIH-funded Molecular Surgery and Omics Laboratory that uses high-throughput methods in genomics, proteomics, and phenomics to identify molecules involved in vitreoretinal disease.

His research team discovered the first gene to cause non syndromic uveitis and is now using protein crystallography to design therapeutic inhibitors for calpain-5. Mahajan and his team performed the first CRISPR gene editing therapy for eye disease in human stem cells. They have also created in vivo models for diabetic retinopathy and uveitis.

Using translational proteomics, Mahajan's multidisciplinary team is developing new precision health approaches using molecular biomarkers to diagnose retinal disease, select personalized therapies, and decode the anatomic structures of the human eye.

Dr. Mahajan has trained numerous surgical fellows that now operate around the world. He has developed enhanced surgeries for complex cases of retinal detachment, macular hole, macular edema, diabetes, macular degeneration, proliferative vitreoretinopathy, optic maculopathy, uveitis, and others. He has identified safer approaches for vitreoretinal surgery in children and adults, and provides second opinions for complex cases. Dr. Mahajan is among only a handful of surgeons to perform human gene therapy for retinal disease. He has published new surgical biomarker studies that are the first to use personalized proteomics to precisely diagnose and treat otherwise problematic retinal diseases.

Dr. Mahajan earned his bachelor's degree in Molecular and Cell Biology at the University of California, Berkeley. He then entered the Medical Scientist Training Program at the University of California, Irvine. Upon completion, he joined the residency program at the Jules Stein Eye Institute at the University of California, Los Angeles. At UCLA he completed post doctoral laboratory research as an EyeSTAR Fellow. He next specialized in vitreoretinal diseases and surgery at the University of Iowa's Retina Fellowship Program and joined as faculty in 2008. He joined Stanford University in 2017.

ACADEMIC APPOINTMENTS

- Professor - University Medical Line, Ophthalmology

- Member, Bio-X
- Faculty Fellow, Sarafan ChEM-H
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Vice Chair for Research, Department of Ophthalmology, (2019- present)

HONORS AND AWARDS

- 16th Straatsma Lecturer Award, Stein Eye Institute, UCLA (2018)
- Alumni Achievement Award, Fight for Sight (2017)
- Staff Student Volunteer Supervisor Leadership Award, University of Iowa (2015)
- Clinician Scientist Award, Doris Duke Charitable Foundation (2013)
- Doris Duke Physician Scientist Fellowship, Doris Duke Foundation (2013)
- P.J. Leinfelder Research Award, University of Iowa (2008)
- Heed Fellowship Merit Award, Heed Foundation (2006)
- Nesburn Resident Research Award, UCLA (2006)
- Giannini Foundation Fellowship Award, Giannini Foundation (2005)

LINKS

- Mahajan lab: https://mahajanlab.stanford.edu

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our focus is the development of personalized medicine for eye diseases through translation of our discoveries in proteomics, genomics, and phenomics in humans, mice and tissue culture models.

My laboratory team is composed of scientists, surgeons, engineers, and students who are dedicated to curing blindness. We use high-throughput technologies (proteomics, genomics, phenomics) to identify candidate disease molecules. These are validated using biochemistry, tissue culture, and animal models. The findings are then directly translated into personalized medical therapies in humans. Major projects include: 1. Protein crystallography of Calpain-5 and its signaling mechanisms in the retina. 2. Proteomics of vitreoretinal disease. 3. Genome-wide knockout screen of mouse eye phenotypes. 4. CRISPR gene therapy for eye disease.

We identified CAPN5 as the first gene to cause uveitis. The gene encodes the calcium-activated cysteine protease. We are investigating the structure-function effects of mutations on its crystal structure and enzymatic activity, structure, function within photoreceptor cells, and activation of intracellular signaling pathways. We also conduct clinical and human genetic studies into the etiology and therapy of autoimmune eye disease.

Our unique access to human surgical eye tissues allowed us to map the human proteome in normal and diseased eyes with vitreoretinal conditions. We have identified major enzymatic pathways associated with diseases such as age-related macular degeneration, diabetic retinopathy, and autoimmunity. Specific molecules have been validated in mice and in cultured cells.

In partnership with the Sanger Institute, we are conducting a high-throughput phenotype screen in genetically modified mice. We have identified numerous genes that cause eye diseases in mice and their human correlates. The strategic integration of this genotype-phenotype platform provides excellent projects for mechanistic investigations.

Using mouse models of eye disease and human stem cells, we are exploring the application of CRISPR to treat blinding conditions.

The laboratory allows highly motivated individuals to be creative in an immersive, interactive environment intensely focused on the restoration of sight. Please contact us to learn more.

CLINICAL TRIALS

- EXPLORE: A Phase II Study to Evaluate the Safety and Efficacy of Two Doses of GT005, Recruiting
- GTSCOPE - To Evaluate the Natural Progression of Dry Age-related Macular Degeneration (AMD), Recruiting
- HORIZON: A Phase II Study to Evaluate the Safety and Efficacy of Two Doses of GT005, Recruiting
- National Eye Institute Biorepository for Retinal Diseases, Recruiting
- Natural History Study of Patients With X-linked Retinal Dystrophy Associated With Mutations in Retinitis Pigmentosa GTPase Regulator (RPGR), Recruiting

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Tsai-Chu Yeh

Publications

PUBLICATIONS

- **Integrating the analysis of human biopsies using post-translational modifications proteomics.** *Protein science : a publication of the Protein Society*
  Bhardwaj, S., Bulluss, M., D'Aubeterre, A., Derakhshani, A., Penner, R., Mahajan, M., Mahajan, V. B., Dufour, A.
  2024; 33 (4): e4979
- **In-Office Vitreous Biopsy With a Vitreous Cutter and Manual Actuation** *OPHTHALMIC SURGERY LASERS & IMAGING RETINA*
  Deboer, C. T., Mahajan, V. B., Sanislo, S. R.
  2024; 55 (2): 116-118
- **Macular dystrophy in Kabuki syndrome due to de novo KMT2D variants: refining the phenotype with multimodal imaging and follow-up over 10 years: insight into pathophysiology.** *Graefe's archive for clinical and experimental ophthalmology = Albrecht von Graefes Archiv fur klinische und experimentelle Ophthalmologie*
  Vaclavik, V., Navarro, A., Jacot-Guillarmod, A., Bottani, A., Sun, Y. J., Franco, J. A., Mahajan, V. B., Smirnov, V., Bouvet-Drumare, I.
  2024
- **Liquid Biopsy Proteomics in Ophthalmology.** *Journal of proteome research*
  Wolf, J., Franco, J. A., Yip, R., Dabaja, M. Z., Velez, G., Liu, F., Bassuk, A. G., Mruthyunjaya, P., Dufour, A., Mahajan, V. B.
  2024
- **AI-Human Hybrid Workflow Enhances Teleophthalmology for the Detection of Diabetic Retinopathy.** *Ophthalmology science*
  Dow, E. R., Khan, N. C., Chen, K. M., Mishra, K., Perera, C., Narala, R., Basina, M., Dang, J., Kim, M., Levine, M., Phadke, A., Tan, M., Weng, et al
  2023; 3 (4): 100330
- **Artificial Intelligence Improves Patient Follow-Up in a Diabetic Retinopathy Screening Program.** *Clinical ophthalmology (Auckland, N.Z.)*
  Dow, E. R., Chen, K. M., Zhao, C. S., Knapp, A. N., Phadke, A., Weng, K., Do, D. V., Mahajan, V. B., Mruthyunjaya, P., Leng, T., Myung, D.
  2023; 17: 3323-3330

- **Cross-Platform Identification and Validation of Uveal Melanoma Vitreous Protein Biomarkers.** *Investigative ophthalmology & visual science*
  Velez, G., Wolf, J., Dufour, A., Mruthyunjaya, P., Mahajan, V. B.
  2023; 64 (14): 14

- **Liquid-biopsy proteomics combined with AI identifies cellular drivers of eye aging and disease in vivo.** *Cell*
  Wolf, J., Rasmussen, D. K., Sun, Y. J., Vu, J. T., Wang, E., Espinosa, C., Bigini, F., Chang, R. T., Montague, A. A., Tang, P. H., Mruthyunjaya, P., Aghaeepour, N., Dufour, et al
  2023

- **Autosomal dominant neovascular inflammatory vitreoretinopathy with CAPN5 c.731T > C gene mutation; clinical management of a family cohort and review of the literature.** *Ophthalmic genetics*
  Tabbaa, T., Mehra, A. A., Kesav, N. P., Mahajan, V. B., Swanson, R. D., Zubricky, R., Sobol, W. M.
  2023: 1-9

- **Simultaneous Bilateral Open-Globe Repair and Vitreoretinal Surgery for Explosive-Related Ocular Injury.** *Journal of vitreoretinal diseases*
  Mishra, K., Roybal, C. N., Mahajan, V. B.
  2023; 7 (6): 540-544

- **Unleashing the potential of CRISPR multiplexing: Harnessing Cas12 and Cas13 for precise gene modulation in eye diseases.** *Vision research*
  Bigini, F., Lee, S. H., Sun, Y. J., Sun, Y., Mahajan, V. B.
  2023; 213: 108317

- **Biobanking of Human Aqueous and Vitreous Liquid Biopsies for Molecular Analyses.** *Journal of visualized experiments : JoVE*
  Wolf, J., Chemudupati, T., Kumar, A., Rasmussen, D. K., Wai, K. M., Chang, R. T., Montague, A. A., Tang, P. H., Bassuk, A. G., Dufour, A., Mruthrunjaya, P., Mahajan, V. B.
  2023

- **Hardwiring tissue-specific AAV transduction in mice through engineered receptor expression.** *Nature methods*
  Zengel, J., Wang, Y. X., Seo, J. W., Ning, K., Hamilton, J. N., Wu, B., Raie, M., Holbrook, C., Su, S., Clements, D. R., Pillay, S., Puschnik, A. S., Winslow, et al
  2023

- **Overexpression of PRDM13 Leads to Photoreceptor Degeneration in a Novel, Inducible Murine Model**
  Nettesheim, E., Rowe, A., Cepica, T., Yee, T., Alshaikhsalama, A., Wickersham, G., Mahajan, V., Small, K., Wert, K.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2023

- **Real world outcomes from artificial intelligence to detect diabetic retinopathy in the primary care setting: 12 month experience**
  Knapp, A. N., Dow, E., Chen, K., Khan, N. C., Do, D. V., Mahajan, V., Mruthyunjaya, P., Leng, T., Myung, D.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2023

- **Cilia-associated wound repair mediated by IFT88 in retinal pigment epithelium.** *Scientific reports*
  Ning, K., Bhuckory, M. B., Lo, C. H., Sendayen, B. E., Kowal, T. J., Chen, M., Bansal, R., Chang, K. C., Vollrath, D., Berbari, N. F., Mahajan, V. B., Hu, Y., Sun, et al
  2023; 13 (1): 8205

- **Intraoperative Complications With Vitreous Biopsy for Molecular Proteomics** *OPHTHALMIC SURGERY LASERS & IMAGING RETINA*
  Mishra, K., Velez, G., Chemudupati, T., Tang, P. H., Mruthyunjaya, P., Sanislo, S. R., Mahajan, V. B.
  2023; 54 (1): 32-36

- **Conjunctival Swabs Reveal Higher Detection Rate Compared to Schirmer Strips for SARS-CoV-2 RNA Detection in Tears of Hospitalized COVID-19 Patients.** *Journal of clinical medicine*
  Sabage, L. E., Sun, Y. J., Wolf, J., Sabage, J., Mazzo, A., Santos, C. F., Mahajan, V. B., Manzoni Lourençone, L. F.
  2022; 11 (23)

- **Chorioretinal atrophy following voretigene neparvovec despite the presence of fundus autofluorescence.** *Molecular genetics & genomic medicine*
  Kolesnikova, M., Lima de Carvalho, J. R., Parmann, R., Kim, A. H., Mahajan, V. B., Tsang, S. H., Sparrow, J. R.
  2022: e2038

- **Protocol to quantify enzymatic effects on vitreous liquefaction in porcine eyes using a transwell-plate system.** *STAR protocols*
  Wolf, J., Sabage, L. E., Sun, Y. J., Mahajan, V. B.
  2022; 3 (4): 101754

- **Clinical characteristics of high myopia in female carriers of pathogenic RPGR mutations: a case series and review of the literature.** *Ophthalmic genetics*
  Tran, M., Kolesnikova, M., Kim, A. H., Kowal, T., Ning, K., Mahajan, V. B., Tsang, S. H., Sun, Y.
  2022: 1-9

- **Reproductive Ophthalmology: The Intersection of Inherited Eye Diseases and Reproductive Technologies.** *Retina (Philadelphia, Pa.)*
  Park, J. G., Xu, C. L., Boyd, A., Aghajanova, L., Mahajan, V. B., Wood, E. H.
  2022

- **Predicting Systemic Health Features from Retinal Fundus Images Using Transfer-Learning-Based Artificial Intelligence Models.** *Diagnostics (Basel, Switzerland)*
  Khan, N. C., Perera, C., Dow, E. R., Chen, K. M., Mahajan, V. B., Mruthyunjaya, P., Do, D. V., Leng, T., Myung, D.
  2022; 12 (7)

- **Retinal artery and vein occlusion in calciphylaxis.** *American journal of ophthalmology case reports*
  Naranjo, A., Rayess, N., Ryan, E., Iv, M., Mahajan, V. B.
  2022; 26: 101433

- **Predicting systemic health features from retinal fundus images using transfer-learning based AI models**
  Khan, N. C., Perera, C., Dow, E. R., Leng, T., Mahajan, V. B., Mruthyunjaya, P., Do, D. V., Myung, D.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2022

- **Integration of Artificial Intelligence into a Telemedicine-Based Diabetic Retinopathy Screening Program**
  Chen, K., Dow, E. R., Khan, N. C., Levine, M., Perera, C., Phadke, A., Dang, J., Weng, K., Do, D. V., Mahajan, V. B., Mruthyunjaya, P., Mishra, K., Leng, et al
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2022

- **IFT88 Mediates Cilia-Associated Wound Repair in Retinal Pigment Epithelium**
  Ning, K., Bhuckory, M., Kowal, T., Chen, M., Bansal, R., Palanker, D. V., Vollrath, D., Berbari, N., Mahajan, V. B., Hu, Y., Sun, Y.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2022

- **Proteomic analysis of autoimmune retinopathy implicates NrCAM as a potential biomarker.** *Ophthalmology science*
  Al-Moujahed, A., Velez, G., Vu, J. T., Lima de Carvalho, J. R., Levi, S. R., Bassuk, A. G., Sepah, Y. J., Tsang, S. H., Mahajan, V. B.
  2022; 2 (2)

- **Bacillary Layer Detachment after Photodynamic Therapy** *OPHTHALMOLOGY RETINA*
  Mishra, K., Mahajan, V.
  2022; 6 (6): 500

- **Bacillary Layer Detachment after Photodynamic Therapy.** *Ophthalmology. Retina*
  Mishra, K., Mahajan, V. B.
  2022; 6 (6): 500

- **Multimodal imaging reveals retinoschisis masquerading as retinal detachment in patients with choroideremia.** *American journal of ophthalmology case reports*
  Greig, L. C., Gutierrez, K. G., Oh, J. K., Levi, S. R., Korot, E., Tsang, S. H., Mahajan, V. B.
  2022; 26: 101543

- **Calpains as mechanistic drivers and therapeutic targets for ocular disease.** *Trends in molecular medicine*
  Vu, J. T., Wang, E., Wu, J., Sun, Y. J., Velez, G., Bassuk, A. G., Lee, S. H., Mahajan, V. B.
  2022

- **Author Correction: Investigation of Cas9 antibodies in the human eye.** *Nature communications*
  Toral, M. A., Charlesworth, C. T., Ng, B., Chemudupati, T., Homma, S., Nakauchi, H., Bassuk, A. G., Porteus, M. H., Mahajan, V. B.
  2022; 13 (1): 2109

- **Expanding the phenotype of TTLL5-associated retinal dystrophy: a case series.** *Orphanet journal of rare diseases*
  Oh, J. K., Vargas Del Valle, J. G., Lima de Carvalho, J. R., Sun, Y. J., Levi, S. R., Ryu, J., Yang, J., Nagasaki, T., Emanuelli, A., Rasool, N., Allikmets, R., Sparrow, J. R., Izquierdo, et al
  2022; 17 (1): 146

- **A protocol to inject ocular drug implants into mouse eyes.** *STAR protocols*

Lin, C., Sun, Y. J., Lee, S. H., Mujica, E. M., Kunchur, C. R., Wu, M., Yang, J., Jung, Y. S., Chiang, B., Wang, S., Mahajan, V. B.
2022; 3 (1): 101143

- **New COL6A6 Variant Causes Autosomal Dominant Retinitis Pigmentosa in a Four-Generation Family.** *Investigative ophthalmology & visual science*
Vaclavik, V., Tiab, L., Sun, Y. J., Mahajan, V. B., Moulin, A., Allaman-Pillet, N., Munier, F. L., Schorderet, D. F.
2022; 63 (3): 23

- **Surgical management of acanthamoeba chorioretinitis.** *American journal of ophthalmology case reports*
Mishra, K., Velez, G., Roybal, C. N., Mahajan, V. B.
2022; 25: 101388

- **Investigation of Cas9 antibodies in the human eye.** *Nature communications*
Toral, M. A., Charlesworth, C. T., Ng, B., Chemudupati, T., Homma, S., Nakauchi, H., Bassuk, A. G., Porteus, M. H., Mahajan, V. B.
2022; 13 (1): 1053

- **Proteomics in uveal melanoma.** *Current opinion in ophthalmology*
Heiferman, M. J., Mahajan, V. B., Mruthyunjaya, P.
1800

- **An intravitreal implant injection method for sustained drug delivery into mouse eyes.** *Cell reports methods*
Sun, Y. J., Lin, C., Wu, M., Lee, S. H., Yang, J., Kunchur, C. R., Mujica, E. M., Chiang, B., Jung, Y. S., Wang, S., Mahajan, V. B.
2021; 1 (8)

- **Intravitreal Fluocinolone Acetonide (Retisert) Implantation Using a Keratome Blade.** *Journal of vitreoretinal diseases*
Pasricha, M. V., Callaway, N. F., Mahajan, V. B.
2021; 5 (1): 66-67

- **The Present and Future of Mitochondrial-Based Therapeutics for Eye Disease.** *Translational vision science & technology*
Ji, M. H., Kreymerman, A., Belle, K., Ghiam, B. K., Muscat, S. P., Mahajan, V. B., Enns, G. M., Mercola, M., Wood, E. H.
2021; 10 (8): 4

- **Molecular Characterization of a Rare Case of Bilateral Vitreoretinal T Cell Lymphoma through Vitreous Liquid Biopsy** *INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES*
Cani, A. K., Toral, M. A., Balikov, D. A., Betz, B. L., Hu, K., Liu, C., Prifti, M. V., Chinnaiyan, A. M., Tomlins, S. A., Mahajan, V. B., Rao, R. C.
2021; 22 (11)

- **Telegenetics for Inherited Retinal Diseases during the COVID-19 pandemic**
Kumar, A., Al Moujahed, A., Chemudupati, T., Tsang, S. H., Mahajan, V. B.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2021

- **Proteomic identification of candidate biomarkers that distinguish lens-induced uveitis from infectious endophthalmitis**
Al Moujahed, A., Velez, G., Vu, J., Ferguson, P., Bassuk, A., Mahajan, V. B.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2021

- **Telegenetics for inherited retinal diseases in the COVID-19 environment.** *International journal of retina and vitreous*
Al-Moujahed, A., Kumar, A., Chemudupati, T., Tsang, S. H., Mahajan, V. B.
2021; 7 (1): 25

- **Peptidomimetics Therapeutics for Retinal Disease.** *Biomolecules*
Parsons, D. E., Lee, S. H., Sun, Y. J., Velez, G., Bassuk, A. G., Smith, M., Mahajan, V. B.
2021; 11 (3)

- **Liquid biopsy proteomics of uveal melanoma reveals biomarkers associated with metastatic risk.** *Molecular cancer*
Velez, G., Nguyen, H. V., Chemudupati, T., Ludwig, C. A., Toral, M., Reddy, S., Mruthyunjaya, P., Mahajan, V. B.
2021; 20 (1): 39

- **Genetics of Uveitis.** *Ocular immunology and inflammation*
Cunningham, E. T., Pichi, F., Mahajan, V. B., Rosenbaum, J. T., Zierhut, M.
2021; 29 (2): 215–18

- **Structure-based phylogeny identifies Avoralstat as a TMPRSS2 inhibitor that prevents SARS-CoV-2 infection in mice.** *The Journal of clinical investigation*
  Sun, Y. J., Velez, G. n., Parsons, D. E., Li, K. n., Ortiz, M. E., Sharma, S. n., McCray, P. B., Bassuk, A. G., Mahajan, V. B.
  2021
- **Intravitreal Fluocinolone Acetonide (Retisert) Implantation Using a Keratome Blade** *JOURNAL OF VITREORETINAL DISEASES*
  Pasricha, M., Callaway, N. F., Mahajan, V. B.
  2021; 5 (1): 66-67
- **Molecular Surgery: Proteomics of a Rare Genetic Disease Gives Insight into Common Causes of Blindness.** *iScience*
  Velez, G., Mahajan, V. B.
  2020; 23 (11): 101667
- **Retinal Manifestations of Mitochondrial Oxidative Phosphorylation Disorders.** *Investigative ophthalmology & visual science*
  Oh, J. K., Lima de Carvalho, J. R., Nuzbrokh, Y., Ryu, J., Chemudupati, T., Mahajan, V. B., Sparrow, J. R., Tsang, S. H.
  2020; 61 (12): 12
- **Untitled Reply** *RETINA-THE JOURNAL OF RETINAL AND VITREOUS DISEASES*
  Mahajan, V. B., Wood, E.
  2020; 40 (8): E37
- **Whole-Exome Sequencing of Patients with Posterior Segment Uveitis.** *American journal of ophthalmology*
  Li, A. S., Velez, G., Darbro, B., Toral, M. A., Yang, J., Tsang, S. H., Ferguson, P. J., Folk, J. C., Bassuk, A. G., Mahajan, V. B.
  2020
- **Novel PRPF31 gene loss of function for retinitis pigmentosa 11**
  Chemudupati, T., Sun, Y., Yang, J., Ng, B., Mahajan, V. B.
  ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2020
- **Structural Insights into the Unique Activation Mechanisms of a Non-classical Calpain and Its Disease-Causing Variants.** *Cell reports*
  Velez, G., Sun, Y. J., Khan, S., Yang, J., Herrmann, J., Chemudupati, T., MacLaren, R. E., Gakhar, L., Wakatsuki, S., Bassuk, A. G., Mahajan, V. B.
  2020; 30 (3): 881
- **Metabolite therapy guided by liquid biopsy proteomics delays retinal neurodegeneration.** *EBioMedicine*
  Wert, K. J., Velez, G. n., Kanchustambham, V. L., Shankar, V. n., Evans, L. P., Sengillo, J. D., Zare, R. N., Bassuk, A. G., Tsang, S. H., Mahajan, V. B.
  2020; 52: 102636
- **Optical Gap Biomarker in Cone-Dominant Retinal Dystrophy.** *American journal of ophthalmology*
  Oh, J. K., Ryu, J. n., Lima de Carvalho, J. R., Levi, S. R., Lee, W. n., Tsamis, E. n., Greenstein, V. C., Mahajan, V. B., Allikmets, R. n., Tsang, S. H.
  2020
- **Reply.** *Retina (Philadelphia, Pa.)*
  Mahajan, V. B., Wood, E. n.
  2020
- **Phenotypic variance in Calpain-5 retinal degeneration.** *American journal of ophthalmology case reports*
  Tang, P. H., Chemudupati, T. n., Wert, K. J., Folk, J. C., Mahajan, M. n., Tsang, S. H., Bassuk, A. G., Mahajan, V. B.
  2020; 18: 100627
- **Proteomic analysis of intermediate uveitis suggests myeloid cell recruitment and implicates IL-23 as a therapeutic target.** *American journal of ophthalmology case reports*
  Sepah, Y. J., Velez, G. n., Tang, P. H., Yang, J. n., Chemudupati, T. n., Li, A. S., Nguyen, Q. D., Bassuk, A. G., Mahajan, V. B.
  2020; 18: 100646
- **Intravitreal methotrexate and fluocinolone acetonide implantation for Vogt-Koyanagi-Harada uveitis.** *American journal of ophthalmology case reports*
  Park, J. G., Callaway, N. F., Ludwig, C. A., Mahajan, V. B.
  2020; 19: 100859
- **Modulation of post-traumatic immune response using the IL-1 receptor antagonist anakinra for improved visual outcomes.** *Journal of neurotrauma*
  Evans, L. P., Woll, A. W., Wu, S. n., Todd, B. P., Hehr, N. N., Hedberg-Buenz, A. n., Anderson, M. G., Newell, E. A., Ferguson, P. J., Mahajan, V. B., Harper, M. M., Bassuk, A. G.

2020

- **Sex Does Not Influence Visual Outcomes After Blast-Mediated Traumatic Brain Injury but IL-1 Pathway Mutations Confer Partial Rescue.** *Investigative ophthalmology & visual science*
  Evans, L. P., Boehme, N. n., Wu, S. n., Burghardt, E. L., Akurathi, A. n., Todd, B. P., Newell, E. A., Ferguson, P. J., Mahajan, V. B., Dutca, L. M., Harper, M. M., Bassuk, A. G.
  2020; 61 (12): 7

- **Quantitative Autofluorescence Following Gene Therapy With Voretigene Neparvovec.** *JAMA ophthalmology*
  Levi, S. R., Oh, J. K., de Carvalho, J. R., Mahajan, V. B., Tsang, S. H., Sparrow, J. R.
  2020

- **Sex Differences in the Repair of Retinal Detachments in the United States.** *American journal of ophthalmology*
  Callaway, N. F., Vail, D. n., Al-Moujahed, A. n., Ludwig, C. n., Ji, M. H., Mahajan, V. B., Pershing, S. n., Moshfeghi, D. M.
  2020

- **Fundoscopy-directed genetic testing to re-evaluate negative whole exome sequencing results.** *Orphanet journal of rare diseases*
  Cho, A. n., Lima de Carvalho, J. R., Tanaka, A. J., Jauregui, R. n., Levi, S. R., Bassuk, A. G., Mahajan, V. B., Tsang, S. H.
  2020; 15 (1): 32

- **Compound heterozygous novel frameshift variants in the PROM1 gene result in Leber congenital amaurosis.** *Cold Spring Harbor molecular case studies*
  Ragi, S. D., Lima de Carvalho, J. R., Tanaka, A. J., Park, K. S., Mahajan, V. B., Maumenee, I. H., Tsang, S. H.
  2019; 5 (6)

- **A Reversible Silicon Oil-Induced Ocular Hypertension Model in Mice.** *Journal of visualized experiments : JoVE*
  Zhang, J., Fang, F., Li, L., Huang, H., Webber, H. C., Sun, Y., Mahajan, V. B., Hu, Y.
  2019

- **Limbal Trocar-Cannulas for Complex Vitrectomy Surgery** *RETINA-THE JOURNAL OF RETINAL AND VITREOUS DISEASES*
  Mears, K. A., Mahajan, V. B.
  2019; 39: 119–22

- **Hypoxic drive caused Type 3 neovascularization in a preclinical model of exudative age-related macular degeneration.** *Human molecular genetics*
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