# AMD FAST TRACK℠

## September 15, 2025

Clarion Congress Hotel

Prague, Czech Republic

brightfocus.org/AMDFastTrack

#AMDFastTrack

BrightFocus® Foundation

Cure in Mind. Cure in Sight.

## Welcome To the BrightFocus AMD Fast Track℠ 2025 Workshop!

For more than 50 years, BrightFocus Foundation has supported early-career scientists in their quest to discover cures for diseases of mind and sight. We are proud to organize and sponsor the third AMD Fast Track workshop, a unique immersive opportunity for emerging researchers to learn from, and interact with, leaders in this field. We are especially excited to hold AMD Fast Track as a pre-symposium to the 16th International Symposium on Retinal Degeneration (RD2025) Meeting.

At BrightFocus, our mission is clear: harness the power of science to end the conditions we fear most—loss of sight and loss of mind. Through our support of research on macular degeneration, glaucoma, and Alzheimer's, we serve as an umbrella for scientific innovation in neurodegenerative disease research, uniquely positioned for experts to share discoveries about one disease to inform another. I encourage you to bring your most creative, most innovative ideas to BrightFocus.

We offer postdoctoral fellowship and new investigator grants to support early-stage scientists in macular degeneration research. We are an independent nonprofit organization, free to support investigator-initiated research that crosses borders and disciplines. The world-class members of our scientific review committees seek out the untried, the unexpected, and the most promising. Since our inception, we have funded more than $300 million research grants across 28 countries..

For more information on our research opportunities, please visit **brightfocus.org/apply** or email us at researchgrants@brightfocus.org.

I hope that your time at AMD Fast Track is meaningful and rewarding, accelerating your path toward scientific discovery. Please remember that your journey doesn't stop at the end of this workshop or the accompanying 16th International Meeting on Retinal Degeneration. As alumni of the BrightFocus AMD Fast Track, please keep in touch with each other and with BrightFocus. We hope this experience sparks collaboration for years to come.

Sincerely,

Diane Bovenkamp irs

## About the Workshop

### Workshop Goals

AMD Fast Track helps speed progress toward a cure for macular degeneration by investing in promising scientists in the field of vision research.

This workshop offers graduate students, postdocs, and other early-career researchers an immersive environment to learn and discuss foundational knowledge and recent discoveries through close interaction with established leaders in the field. As a participant in this workshop, by its end you will have immersed yourself in the latest discoveries in macular degeneration research and connected with preeminent vision scientists and early-stage researchers from across the globe.

Share your photos and key takeaways from AMD Fast Track on social media using the #AMDFastTrack hashtag.

Thank you to this year's co-organizers and co-chairs: Diane Bovenkamp, PhD; Sarah Doyle, PhD; and Florian Sennlaub, MD, PhD.

## Thank You to Our Fast Track Sponsors

**BrightFocus Foundation Board of Directors**

RKD GROUP

J.P.Morgan PRIVATE BANK

Sandy Spring Bank

*Sponsors as of August 16, 2025*

# BrightFocus AMD Fast Track Session Schedule

*All times are listed in the local time (CET–Central European Time)*

8:45
**Welcome and Introduction**
*Diane Bovenkamp, PhD*
*BrightFocus Foundation (USA)*

**Introduction of Fast Track Speakers**
*Sarah Doyle, PhD, Trinity College Dublin (Ireland) and Florian Sennlaub, MD, PhD, Institut de la Vision, Paris (France)*

9:00
**From Drusen to Vision Loss: What is AMD?**
*Usha Chakravarthy, FRCOphth, PhD, CBE*
*Queen's University of Belfast (UK)*

9:45
**AMD: A Tale of Two Stages**
*Tiarnan D. L. Keenan, BM BCh, PhD*
*National Eye Institute (USA)*

10:30 - 11:00
**Morning Coffee Break**

11:00
**Mapping Causal Genes and Variants in AMD Using a Multi-Omics Approach**
*Rui Chen, PhD*
*University of California, Irvine (USA)*

11:45
**The Choroid**
*Robert Mullins, PhD*
*University of Iowa (USA)*

12:30 - 13:45
**BrightFocus Networking Lunch**

13:45
**Underappreciated Roles of the Glycocalyx in Endothelial Biology**
*Patricia A. D'Amore, PhD*
*Schepens Eye Institute, Massachusetts Eye and Ear Infirmary (USA)*

14:30
**The Role of the Inner Blood Retina Barrier in AMD**
*Matthew Campbell, PhD*
*Trinity College Dublin (Ireland)*

15:15
**Innate Immune Memory in AMD**
*Mike (Przemyslaw) Sapieha, PhD, FCAHS*
*Université de Montréal (Canada)*

16:00 - 16:30
**Afternoon Coffee Break**

16:30
**iPSC-derived Retinal Tissues to Model and Understand AMD Disease Pathogenesis**
*Ruchi Sharma, PhD*
*National Eye Institute (USA)*

17:15
**Mitophagy at the Crossroads of Neuroinflammation During Retina Aging and Disease**
*Patricia Boya, PhD*
*University of Fribourg (Switzerland)*

18:00
**END**

## Speakers and Organizers

### Diane Bovenkamp, PhD | Co-Chair, AMD Fast Track Organizing Committee

BrightFocus Foundation, Clarksburg, MD
dbovenkamp@brightfocus.org

Diane Bovenkamp, PhD, Vice President of Scientific Affairs, is the chief scientist at BrightFocus Foundation, overseeing global operations of the organization's research programs. She serves as the scientific liaison in local, national, and international forums, and identifies and develops new research initiatives, partnerships, and funding policies consistent with the mission of BrightFocus.

Dr. Bovenkamp obtained her PhD in Biochemistry from Queen's University in Kingston, Ontario, Canada, discovering and studying Eph receptors in angiogenesis and neural development in zebrafish and mice. She completed a Postdoctoral Fellowship in the Vascular Biology Program at Boston Children's Hospital/Harvard Medical School, isolating and characterizing zebrafish neuropilins. Dr. Bovenkamp conducted further research at the Johns Hopkins University Bayview Proteomics Center in the Division of Cardiology at Johns Hopkins School of Medicine in Baltimore, Maryland, using proteomic techniques for biomarker detection in human serum.

## Sarah Doyle, PhD | Co-Chair, AMD Fast Track Organizing Committee

doyles8@tcd.ie

Sarah Doyle is an assistant professor and lecturer in immunology in the Department of Clinical Medicine at Trinity College Dublin's School of Medicine, where she leads the Inflammation and Aging Research Group and serves as course coordinator for Junior Freshman Human Health and Disease. Her scientific interests surround the molecular dialogue associated with how the immune system recognizes infection or injury, reacts, and directs an inflammatory response to resolve the insult. One major aspect of her research focuses on elucidating the cellular mechanisms and signaling events that regulate the effects of Toll/interleukin 1 receptor (TIR) and pattern recognition receptor (PRR) family responses of the innate immune system to both pathogen-derived and endogenous damage-associated immunomodulatory.

## Florian Sennlaub, PhD | Co-Chair, AMD Fast Track Organizing Committee

florian.sennlaub@inserm.fr

Dr. Florian Sennlaub, an MD-PhD ocular immunologist, is a research director at the French National Institute of Health and Medical Research (Inserm). He leads a laboratory at the Institut de la Vision in Paris investigating the role of innate immunity in retinal diseases, with a focus on how chronic low-grade inflammation contributes to the pathogenesis of age-related macular degeneration (AMD). His research has demonstrated how both genetic and environmental risk factors directly promote subretinal inflammation and tip the balance from a beneficial inflammation that helps control debris accumulation to detrimental chronic inflammation and destructive late AMD. These insights highlight the central role of inflammation in AMD and open new avenues for therapies aimed at restoring immune balance and resolving chronic inflammation.

**Patricia Boya, PhD**

Professor, Department of Neuroscience
University of Fribourg, Switzerland
patricia.boya@unifr.ch

Our lab uses cellular and animal models to understand the physiological roles of autophagy and its implications during disease. Autophagy is an essential intracellular degradation pathway that recycles cell components generating new building blocks and energy to maintain cellular homeostasis. Autophagy plays an important role in the response to nutrient starvation; the recycling of damaged organelles and is a survival mechanism under stress conditions.

We are interested in the relationships between autophagy and basic processes such as proliferation, differentiation and cell death to gain insight into development and physiological aging. We want to understand how the selective removal of organelles via autophagy, such as mitophagy impacts the physiology of our cells and how these selective processes are regulated in vitro, in vivo and in animal models of retinal diseases. We also seek to identify new therapies that target autophagy pathways by screening for new autophagy-modulating drugs with a view to discovering new treatments for these diseases.

**Matthew Campbell, PhD**

Professor of Neurovascular Genetics, Smurfit Institute of Genetics, Trinity College Dublin, Ireland
campbem2@tcd.ie

The Campbell lab at TCD studies the role of the blood-brain and blood retina barriers in health and disease. Specifically, the lab is interested in the biology of endothelial tight junctions and how these junctions are regulated in health and disease. The lab generates molecular genetic tools and pre-clinical models of disease to explore the contribution of dysfunctional brain and retinal blood vessels to neurological and ophthalmological conditions, respectively. In that regard, the group is also heavily involved in numerous clinical research programs where we use advanced quantitative imaging approaches to determine neural vascular integrity in a range of human disease including age-related macular degeneration, retinitis pigmentosa, glioblastoma multiforme, and chronic traumatic encephalopathy, to name a few.

**Usha Chakravarthy, FRCOphth, PhD, CBE**

Honorary and Emerita Professor of Ophthalmology, Queen's University of Belfast
U.Chakravarthy@qub.ac.uk

Usha Chakravarthy is a retina trained ophthalmologist from the UK. Her research interests include cellular mechanisms involved in the pathogenesis of age-related macular degeneration and diabetic retinopathy. Her current focus is on the molecular changes that drive fibrosis and atrophy in neovascular macular degeneration. Her work also involves exploring the relationships between function and retinal morphology and a deep dive into the earliest anatomical changes that precede onset of neuronal loss in the retina. Regarding diabetic retinopathy her current interests lie in harnessing large electronic records of clinical data along with high resolution retinal imaging and applying machine learning methods to determine risk factors for progression from pre-clinical diabetic retinopathy to overt retinopathy.

**Rui Chen, PhD**

Professor, Gavin Herbert Eye Institute - Center for Translational Vision Research, University of California Irvine School of Medicine
rui.chen@uci.edu

Our research is dedicated to identifying the genes and mutations that underlie human diseases, with the goal of systematically predicting and assessing the functional consequences of genetic variants across the genome. Leading the effort of generating the human eye cell atlas, we investigate changes in the transcriptome and epigenome at single-cell resolution, exploring how these changes manifest during development and under disease conditions. Additionally, we are committed to developing novel therapeutic approaches—including gene therapy, genome editing, and neural regeneration—to effectively treat these diseases. Through this comprehensive approach, we aim to deepen our understanding of disease mechanisms and drive the development of targeted, transformative treatments.

**Patricia A. D'Amore, PhD**

Charles L. Schepens Professor of Ophthalmology; Professor of Pathology; Vice Chair of Basic and Translational Research, Department of Ophthalmology
Harvard Medical School
Patricia_damore@meei.harvard.edu

For over 40 years, I have been involved in the study of ocular pathologies in two major areas: vascular development and pathology, and the pathogenesis and treatment of dry age-related macular degeneration (AMD).

My current focus in vascular biology is on the role of the glycocalyx in the regulation of vascular inflammation and angiogenesis. We have shown that endomucin, a component of the vascular glycocalyx, functions to maintain a non-inflammatory surface. In addition, endomucin is a critical component of clathrin-mediated endocytosis of activated VEGFR2, a step that is essential for VEGF signaling.

In our study of the pathogenesis of dry AMD, we have been motivated by strong genetic, epidemiological and histological data to investigate the role of lipids and have shown that oxidized-LDL (ox-LDL) is toxic to human retinal pigment epithelium (RPE). Mechanistically, oxLDL is taken up by RPE via CD36 into lysosomes up where it can lead to lysosomal destabilization and NLRP3 inflammasome activation, which generates IL-1ß and RPE damage. Accordingly, using the ox-LDL-induced RPE cytotoxicity assay as a screen, we identified sterically hindered phenol compounds with potent protective activities for RPE against ox-LDL. Our recent studies have begun to reveal the mechanism underlying this protection.

**Tiarnan D. L. Keenan, BM BCh, PhD**

Stadtman Tenure-Track Investigator, Division of Epidemiology and Clinical Applications, National Eye Institute, National Institutes of Health
tiarnan.keenan@nih.gov

My research is focused on adult retinal disease, particularly age-related macular degeneration (AMD). This includes research into the diagnosis, treatment, and prevention of AMD, together with disease mechanism discovery. My work is aimed at presenting an integrated view of AMD. To this end, my experience and research span multiple disciplines, including AI, big data/epidemiology, genetics/multi-omics, nutritional science, retinal image analysis, and clinical trials. One major focus is on improving our understanding of the risk and protective factors both for progression to late AMD and for geographic atrophy expansion. This includes the roles of diet and oral supplements at different disease stages. Another major focus is on making data-driven improvements to AMD diagnosis/classification and prognostic risk prediction, by applying both traditional and deep learning approaches to retinal image analysis. Overall, the goal of my research is to understand why and how AMD comes about, so that new treatments can be designed that target the underlying disease more effectively.

**Robert F. Mullins, PhD**

Martin Carver Chair in Ocular Cell Biology; Professor of Ophthalmology and Visual Sciences, University of Iowa Institute for Vision Research
mullinsr@uiowa.edu

Dr. Mullins is a cell biologist with an interest in diseases of the macula. He has been studying AMD and other retinal diseases for over 25 years. A major focus of his laboratory is utilizing human donor eyes to understand human disease and to use this knowledge in the development of model systems and treatment paradigms. This work has led the lab to focus on the two related areas of (1) pathogenic complement activation and (2) choriocapillaris loss in the aging macula, with the goal of preventing and repairing vascular damage that occurs in A MD. In addition, the Mullins lab has been active in studying gene expression at the RNA and protein level in normal and diseased human samples, including extensive single cell studies of the choroid and RPE in aging and AMD. Finally, the lab is interested in making single cell expression data available to the wider community on a free and user-friendly web site, Spectacle.

**Mike (Przemyslaw) Sapieha, PhD, FCAHS**

FROUM Endowed Chair & Canada Research Chair in Retinal Cell Biology, University of Montreal
mike.sapieha@umontreal.ca

Mike's research laboratory is based at the Maisonneuve-Rosemont Hospital Research Center and focuses on elucidating the causes of retinal diseases such as diabetic retinopathy and age-related macular degeneration. His team elucidated mechanisms implicating deregulation of neuronal metabolism, innate immune memory and cellular senescence in retinal vascular diseases such as diabetic retinopathy and age-related macular degeneration (AMD). Notably, his work identified roles for guidance cues such as Semaphorins and Netrins in these diseases. To translate his work, Mike engineered novel drug candidates for vascular regeneration and founded the biotech company SemaThera Inc. He is also the Chief Scientist of UNITY Biotechnology in San Francisco where they are developing the first senolytic therapies for eye disease. Currently, there are advanced clinical trials in diabetic eye disease based on this work.

**Ruchi Sharma, PhD**

Staff Scientist, National Eye Institute, National Institutes of Health
fnu.ruchi2@nih.gov

Dr. Sharma is a Senior Scientist at the National Eye Institute, NIH, USA. She is a stem cell expert with a decade of experience using iPS cell-derived retinal cells to discover treatments for retinal degeneration using small-molecules, gene therapies, and cell-based therapies. She has published 25 manuscripts in this area, including developing an autologous iPS cell derived-RPE cell therapy and patient iPS cell derived in vitro disease models for AMD, Stargardt disease, albinism, and ciliopathies. At the National Eye Institute, she co-heads a group of 25 people, including graduate students, postdoctoral fellows, and senior scientists.

## 2025 Travel Award Recipients

BrightFocus Foundation congratulates the recipients of travel awardees attending the 2025 AMD Fast Track and RD Meeting. As part of our commitment to increasing access to training and networking opportunities, BrightFocus is covering the cost of the one-day AMD Fast Track workshop, food, and one night extra lodging for each travel fellow, in addition to any sponsorship support they may be receiving from other organizations to attend the 16th RD meeting.

### Riley Arbuckle

University of Pittsburgh
ria28@pitt.edu

Riley grew up in the Bay Area of California with her two older sisters. For university she pursued a B.S. in Microbiology and Molecular Genetics, with a minor in Public Health at Michigan State University – Go Green! She is currently a fourth year PhD candidate studying Human Genetics at the Graduate School of Public Health at the University of Pittsburgh, where she works in retinal research in the Department of Ophthalmology. In Dr. Yuanyuan Chen's lab she is researching two GPCRs and their relationship to inherited retinal diseases. Beyond the bench Riley enjoys playing with her two cats, reading, film, and traveling.

### Alexandra Azarkevich

Michigan State University College of Veterinary Medicine
chiusan1@msu.edu

Alexandra Azarkevich earned her Bachelor of Science in Animal Science from Cornell University in 2017. She is in her fifth year of a dual Doctor of Veterinary Medicine (DVM) and PhD program at Michigan State University, where veterinary training has enriched her research with meaningful clinical insight. Her thesis focuses on detailed characterization of a spontaneous canine model of ABCA4-associated maculopathy using advanced retinal imaging and electrophysiologic techniques with the goal of testing therapeutic approaches. Before graduate school, Alexandra gained diverse experience in regulatory veterinary medicine at the state government level and in preclinical research across multiple animal species at a contract research organization. Passionate about advancing vision science, she aims to build a career as a clinician-scientist working with comparative models of ocular disease. In her free time, she enjoys spending time with her two dogs, two cats, and exploring the outdoors.

**Andrea Barabino**
NIH
andrea.barabino@nih.gov

Andrea Barabino, PhD, is a postdoctoral fellow at the National Eye Institute (NEI), NIH, specializing in stem cell biology, tissue engineering, and disease modeling for retinal diseases. He focuses on creating advanced, physiologically relevant 3D in vitro retinal models, leveraging innovative techniques such as biological 3D printing and synthetic adhesion molecules. His work emphasizes the development of complex retinal tissues, including retinal organoids, retinal pigment epithelium (RPE), and choroidal vasculature to accurately model age-related macular degeneration (AMD) and other retinal degenerations.

**Nicholas Bariesheff**
The Australian National University (Australia)
nicholas.bariesheff@anu.edu.au

I am a final-year PhD candidate in the Clear Vision Research Group at the John Curtin School of Medical Research, at the Australian National University (ANU), where I investigate the molecular mechanisms underlying retinal aging and explore how physical exercise can be utilised to preserve vision as we age. My research integrates molecular biology, omics analysis, and fundamental physiology to understand how oxidative stress and inflammation drive age-related retinal degeneration.

**Billie Beckwith-Cohen**
Michigan State University College of Veterinary Medicine
billiebc@msu.edu

I am a DVM/PhD comparative ophthalmologist and aspiring clinician-scientist focused on retinal research and disease processes which interfere with natural physiology and methods to treat them. I am pursuing a career focused on translational vision rescuing treatments using large animal models. I completed a PhD in Vision Science at UC Berkeley and then pursued residency training in comparative ophthalmology at Michigan State University, which houses a large canine and feline colony to study IRDs and advanced methods for vision restoration. I am passionate about retinal neuroplasticity as it relates to retinal degeneration and unmasking powerful potentials of vision restoration. I am a strong believer in bridging the gap between our knowledge in basic neuroscience, including retinal circuitry and synaptogenesis and clinical therapeutic approaches. Understanding the underlying physiologic dysfunction is imperative to clinical success, and both successful and failed clinical approaches can showcase dynamic physiological and pathophysiological retinal processes.

**Mohajeet Bhuckory**
Stanford University
bhuckory@stanford.edu

Mohajeet Bhuckory, PhD, is an instructor in the Department of Ophthalmology and Hansen Experimental Physics Laboratory at Stanford University. He earned his PhD in vision science from Queen's University Belfast and completed postdoctoral training at Stanford. His research focuses on restoring vision in patients with retinal degenerative diseases like age-related macular degeneration (AMD). Dr. Bhuckory develops next-generation subretinal prosthetic implants that interface with surviving retinal neurons to restore high-resolution vision—work that earned him a Pascal RoI nomination at SPIE2025 and the POV award at ARVO2025. His approach integrates biomedical engineering, materials science, and in vivo testing to create safe, biocompatible implants delivering stimulation at cellular resolution. He recently received the BrightFocus Macular Degeneration Research New Investigator award to further his independent work on electronic photoreceptors. Dr. Bhuckory is passionate about mentoring and committed to expanding access to visual prosthetic technologies.

**Pooja Biswas**
Shiley Eye Institute, University of California San Diego
pobiswas@ucsd.edu

Pooja Biswas is a postdoctoral fellow in Dr. Ayyagari's lab at the University of California, San Diego, where she studies the genetic causes of inherited retinal diseases. Her research focuses on identifying disease-causing variants and functionally characterizing novel genes using patient-derived iPSCs, single-cell genomics, and CRISPR-based genome editing tools. She is currently leading projects aimed at understanding gene-disease mechanisms and exploring potential therapeutic strategies.

**Priyanka Boro**
University of California, Los Angeles
pboro@mednet.ucla.edu

Priyanka Boro is a postdoctoral researcher at the Jules Stein Eye Institute, UCLA, under the supervision of Dr. Xian-Jie Yang. Priyanka investigates retinal neurodegeneration, focusing mainly on the role of mitochondrial dynamics in cone photoreceptors. With a strong background in cellular and molecular biology, she is interested in how subcellular changes contribute to retinal disease progression and potential therapeutic strategies. Her current research utilizes advanced imaging tools and genetic mouse models to understand the structural and functional remodeling of cones during photoreceptor degeneration. Prior to joining UCLA, during her PhD, she studied molecular signaling pathways under cellular stress. She is passionate about applying foundational biological knowledge to solve translational challenges in vision science. Outside her lab, she enjoys mentoring students, science communication, exploring local cafés, gardening and cooking. Priyanka is excited to connect with fellow researchers at RD2025 to share ideas, gain insights, and build future collaborations in retinal biology.

**Kiva Brennan**
Trinity College Dublin (Ireland)
kbrenna@tcd.ie

Kiva Brennan, PhD, is a research assistant professor in the School of Medicine at Trinity College Dublin. Kiva earned her bachelor's degree in Biochemistry from Trinity College Dublin and her PhD in Immune signaling from the Royal College of Surgeons in Ireland, spending time in UMASS Medical School. Her postdoctoral studies in Trinity College and the National Children's Research Centre in Ireland have involved a broad range of biomedical research relating to ocular biology, pediatric immunology, obesity, innate immune regulation and evasion, and the role of the immune system in the pathogenesis of disease. Kiva was awarded the Trinity Faculty of Health Sciences Dean's Award for Research (2021) and the Trinity School of Medicine Research Award (2022). In 2022, Kiva was awarded the title of Senior Research Fellow while working with Prof. Sarah Doyle, and was awarded the SFI-IRC Pathways Award in 2023, to establish her independent research program.

**Brooke Brothers**
West Virginia University
bab0042@mix.wvu.edu

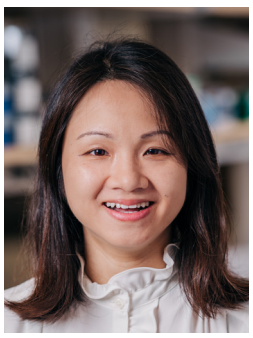
I am a fourth-year PhD candidate in the Biochemistry & Molecular Medicine graduate program at West Virginia University, under the mentorship of Dr. Wen-Tao Deng. My dissertation project involves the design and execution of ocular AAV gene therapies for the inherited retinal disease blue cone monochromacy (BCM), with a focus on "ablate & replace" therapeutic approaches. I generate custom AAV vectors that incorporate RNA interference systems and gene supplementation through plasmid cloning and perform subretinal delivery of the AAV therapies in novel BCM mouse models. I evaluate the therapeutic efficacy and window of treatability by various functional, histological, and quantitative assessments. I also have a passion for mentorship and outreach, and I serve as president of the student organization Graduate Women Advocating Science and student representative for the Biochemistry & Molecular Medicine Student Research Forum. In my downtime, I enjoy crocheting, painting, and creative writing.

**Alicia Brunet**
University of Western Australia/Lions Eye Institute
alicia.brunet@research.uwa.edu.au

I completed my PhD at The University of Western Australia based at the Lions Eye Institute, working under Dr. Livia Carvalho in 2024, and I am now a postdoctoral researcher within the same lab. My research focuses on the molecular mechanisms underlying cone photoreceptor degeneration in inherited retinal diseases (IRDs), including retinitis pigmentosa and achromatopsia. My work involves leveraging transcriptomic approaches to understand cone degeneration and identify neuroprotective strategies for cone survival independent of the IRD-causing mutation. These strategies involve both pharmaceutical-based treatments and gene therapies which are evaluated in mouse models of IRDs. I am the primary investigator on LEI's Strategic Funding grant to further this research initiative. My long-term goal is to translate these findings into therapies that preserve vision for a wide range of IRD patients that currently have no treatment options available.

**Anil Chekuri**
Schepens Eye Research Institute
anil_chekuri@meei.harvard.edu

Dr. Anil Chekuri is an instructor in ophthalmology at Harvard Medical School, leading a translational research program at the Schepens Eye Research Institute of Mass Eye and Ear Infirmary, dedicated to understanding and treating inherited retinal diseases, with a strong focus on retinitis pigmentosa (RP). His research integrates gene therapy, disease modeling, and multi-omic approaches to identify disease-driving mechanisms and develop targeted interventions. His early contributions include identifying HTRA1 as a key regulator of retinal degeneration and co-developing a therapeutic for optic neuropathy in familial dysautonomia. His current NIH-funded work aims to define gene-agnostic therapeutic targets and develop AAV-based strategies for RP, including innovative approaches for isoform-specific gene replacement and cell-type–specific neuroprotection. Dr. Chekuri also mentors a diverse group of trainees and actively contributes to institutional training programs. His work promises to accelerate therapeutic development for RP and other inherited retinal dystrophies, advancing toward durable treatments for currently incurable forms of blindness.



**Holly Chen**
University of Alabama at Birmingham
chenh@uab.edu

Dr. Holly Chen is an assistant professor in the Department of Cell, Development and Integrative Biology at the University of Alabama at Birmingham, United States. Her postdoctoral training at the National Eye Institute of the U.S. NIH focused on disease modeling and drug screening for inherited retinal diseases (IRD) using patient induced pluripotent stem cells-derived retinal organoids. In her independent lab, Dr. Chen continues to apply this organoid platform to study the molecular mechanisms of photoreceptor degeneration, with a focus on cilia-related IRD. Her work examines how photoreceptors and Müller glia interact during early stages of disease, with particular emphasis on the role of autophagy and its regulatory pathways. By integrating stem cell-based models with super-resolution imaging, proteomic, and functional analyses, her research aims to define shared cellular processes disrupted in IRD for understanding early disease pathogenesis and supporting the development of broadly applicable therapeutic strategies.

**Lindsey Chew**
Duke University
lindsey.chew@duke.edu

Lindsey A. Chew is an MD/PhD candidate at Duke University. Inspired by her time raising guide dog puppies for the blind, she became especially interested in ophthalmology and vision research. Under the guidance of Dr. Catherine Bowes Rickman, Lindsey is completing her PhD in Cellular and Molecular Biology. Her thesis work focuses on the development of gene therapies to treat age-related macular degeneration (AMD). In the Bowes Rickman Lab's AMD-like mouse model, Lindsey is harnessing adeno-associated virus technology and an innovative, minimally invasive subretinal injection technique for therapeutic delivery of complement factor H. After completing her graduate studies, Lindsey will pursue a clinical residency in ophthalmology. As an aspiring physician–scientist, she will pursue a lifelong career contributing to translational vision research and the development of therapies for her future patients.

**Julio Cesar Corral Serrano**
University College London (UK)
j.serrano@ucl.ac.uk

Julio C. Corral Serrano obtained his PhD in Human Genetics from the Radboud University Nijmegen (The Netherlands), which focused on the investigation of the molecular mechanisms behind C2orf71/PCARE-associated retinal dystrophy using fish and mouse models as well as protein:protein interactions. These studies revealed for the first time that PCARE and WASF3 are important for the actin-dependent process of outer segment disc formation in photoreceptors. Julio has now six years of postdoctoral experience working in different human stem cell models of IRDs, in particular ciliopathies, including CEP290, LCA5, ARL3 and IFT140. Currently, he is a Senior Research Fellow at the UCL Institute of Ophthalmology (London, UK), supported by a Moorfields Eye Charity Career Development Award. His research is dedicated to understanding retinal ciliopathies, genetic disorders that affect the structure and function of photoreceptor cilia, using patient-derived and CRISPR-engineered human retinal organoids and RPE. His aim is to dissect the molecular mechanisms underlying cilia-associated retinal disease and to develop novel therapeutic strategies, including gene targeted and gene agnostic approaches.

**Elena Daniele**
National Eye Institue/NIH
elena.daniele@nih.gov

I am a postdoctoral fellow at the National Eye Institute (NEI/NIH) with a strong passion for stem cell biology and biomedical research. My experience spans basic molecular studies to translational and clinical applications. I completed a PhD in Advanced Therapies and Experimental Pharmacology, where my research focused on developing cell-based therapies for retinal degenerative diseases. Currently, my work aims to understand how cellular metabolism influences epigenetic regulation, particularly in the context of age-related retinal conditions. I have hands-on experience in pluripotent stem cell culture, retinal differentiation, and in vivo models. Throughout my academic journey, I have worked in highly collaborative, multidisciplinary research environments that have enriched both my scientific and professional skills. I have presented my work at several international conferences and enjoy engaging with the broader scientific community.

**Maria Elia**

Newcastle University (UK)
Maria.Elia@newcastle.ac.uk

I am a second-year PhD student at Newcastle University, where I am investigating gene therapy strategies for inherited retinal diseases. My research focuses on adeno-associated virus (AAV) to restore PRPF31 expression and function in patient-derived iPSC retinal cells, aiming to develop a potential treatment for PRPF31-related autosomal dominant retinitis pigmentosa (RP11). My academic background includes a BSc in Biomedical Sciences, during which I gained experience in disease modelling and therapeutic screening using 3D liver cancer models. This interest in translational research deepened during my MRes in Cancer Research, where I explored copy number alterations and developed a genomic complexity score for children with acute lymphoblastic leukaemia (ALL) using bioinformatics tools such as RStudio. These experiences shaped my passion for understanding molecular disease mechanisms and developing targeted therapies. Through my PhD, I aim to contribute to the advancement of gene-based treatments and improve outcomes for individuals with inherited retinal disorders.

**Michelle Geigenfeind**

University of Regensburg (Germany)
Michelle.Geigenfeind@vkl.uni-regensburg.de

Michelle C. Geigenfeind is a postdoctoral researcher at the Institute of Human Anatomy and Embryology at the University of Regensburg (Prof. Dr. Ernst R. Tamm). She completed her doctorate at the same institute, where her research focused on the role of choriocapillaris fenestrations in maintaining the integrity of the retinal pigment epithelium and photoreceptors — an area she continues to investigate. Her academic background is in biology, with both a bachelor's and an international master's degree from the University of Regensburg, completed with consistently strong performance. Her PhD project was supported by the PRO RETINA Foundation with a doctoral scholarship. Her work has been presented at national and international conferences on retinal degeneration. Alongside her academic work, she has been actively involved in academic initiatives, including as a graduate representative and in public outreach.

**Sayan Ghosh**
The Johns Hopkins University School of Medicine
sghosh25@jh.edu

I am Dr. Sayan Ghosh, a research associate at the Wilmer Eye Institute, The Johns Hopkins University School of Medicine. My research focuses on unraveling immune regulatory mechanisms and organelle dysfunction in dry age-related macular degeneration (AMD). I earned my PhD in Neuroscience from the University of Calcutta. I was also awarded the Fulbright fellowship for doctoral research and have 2 US patents along with over 35 peer-reviewed papers, including Autophagy, Nature Communications, and Communications Biology. I developed a novel RPE-specific Akt2 knock-in mouse model to investigate the role of inflammation during AMD pathogenesis, supported by the BrightFocus Foundation Postdoctoral Fellowship for Macular Degeneration and the NIH K99/R00 Pathway to Independence Award. I also received UPPDA, ARVO, and ISER travel awards. I actively serve as a peer reviewer for journals like Redox Biology, Free Radical Biology and Medicine, Biology, International Journal of Molecular Science and Science Advances.

**John Han**
University of Michigan
sghosh25@jh.edu

I completed my PhD in 2023 at Thomas Jefferson University, working in the lab of Dr. Nancy Philp, on the role of glucose and lactate transporters in outer retinal function. I am currently pursuing my postdoctoral training in the laboratory of Dr. Jason Miller at the University of Michigan, where I am working on lipid handling in the retinal pigment epithelium (RPE). My current project involves understanding the roles of lipid droplets and peroxisomes in RPE lipid handling and exploring how they may be therapeutically targeted for the treatment of AMD. I would ultimately like to lead my own research program studying the intersection of metabolism and cell differentiation in the eye.

## Daniel Hass

University of Washington
dhass@uw.edu

Daniel Hass is a postdoctoral scholar at the University of Washington. He is broadly focused on understanding how mitochondria are altered by eye disease, and whether preserving or changing mitochondrial function can maintain the eye. As a PhD student with Colin Barnstable (Penn State University), this manifested as an exploration into the role of a mitochondrial uncoupling protein, UCP2, in glaucoma. Daniel's postdoctoral studies now focus on the interaction between fatty acids and age-related macular degeneration. He is motivated to determine whether mitochondrial fatty acid oxidation can control lipid levels in the eye. This question is particularly relevant because lipids are a major component of drusen, a major risk factor for macular degeneration.

## Catherine Hottin

University Hospital Tuebingen (Germany)
catherine.hottin@uni-tuebingen.de

Dr. Catherine Hottin is a postdoctoral researcher in Prof. Paquet-Durand's group at the Institute for Ophthalmic Research in Tuebingen. She specializes in retinal degeneration, focusing on the mechanisms of photoreceptor cell death. Her current work is part of the RD Treat project, which aims to provide clinical proof of concept for gene-therapeutic and pharmacological treatments targeting PDE6A-linked retinopathies and related disorders. She investigates the role of cGMP signaling in the pathogenesis of retinitis pigmentosa and evaluates the therapeutic potential of cGMP analogues. Dr. Hottin is committed to translational research and to bridging the gap between fundamental science and clinical application in inherited retinal diseases.

## Lia Huo

University of Toronto (Canada)
lia.huo@utoronto.ca

**Shlomit Jaskoll**
Hebrew University of Jerusalem (Israel)
shlomit.bardugo@mail.huji.ac.il

Shlomit Jaskoll is a second-year PhD student in Prof. Itay Chowers' lab at the Hadassah Medical Center, enrolled in the dual MD-PhD program at the Hebrew University of Jerusalem. She earned a BSc in Medical Sciences through the 'Tzameret' military medicine program. Her doctoral research focuses on the genetic and molecular mechanisms underlying age-related macular degeneration (AMD), with additional interests in imaging biomarkers and genotype–phenotype correlations. Shlomit has presented her work at multiple conferences and co-authored peer-reviewed publications in the field. As a future physician-scientist, she is committed to translating basic science discoveries into clinical advances that improve early detection and personalized treatment of retinal degenerative diseases.

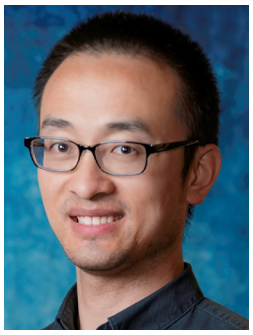
**Dogan Kirman**
UT Southwestern Medical Center
dogan.kirman@utsouthwestern.edu

Dogan Can Kirman, PhD, is a postdoctoral researcher at UT Southwestern Medical Center, where he investigates CRISPR-generated mouse models of retinal degeneration. His research focuses on identifying novel gene mutations critical for retinal homeostasis through an unbiased forward genetic screening pipeline. He explores the molecular mechanisms and disease pathology associated with these models, uncovering distinct cellular pathways and potential therapeutic targets. His recent work incorporates high-throughput omics approaches to study the role of immune system activation in retinal degeneration and vision loss. These research efforts have resulted in several ARVO presentations and peer-reviewed publications.

**Anders Knudsen**
Columbia University
ask2293@columbia.edu

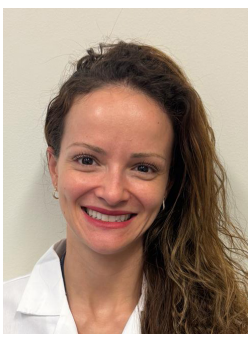
**Beatrice Le**
UC Berkeley
beatricele@berkeley.edu

Beatrice is a third-year Vision Science PhD candidate at Herbert Wertheim School of Optometry at the University of California, Berkeley, where she is co-advised by Dr. John Flannery and Dr. Rowland Taylor. Her projects focus on developing AAV-based optogenetic gene therapy strategies for vision restoration. Her research ambitions center around developing novel gene therapies that could restore vision in severe cases of retinal degeneration by acquiring and using knowledge of retinal circuits to target genetic constructs for maximized therapeutic efficacy. During her spare time, she enjoys painting, reading, hiking, escape rooms, and nature walks.



**Haitao Liu**
University of Pittsburgh
hal140@pitt.edu

Haitao Liu, MD, PhD, is a Research Instructor in the Department of Ophthalmology at the University of Pittsburgh School of Medicine. He received his medical degree in China and earned his PhD in Vision Science at Case Western Reserve University, with a focus on retinal neurovascular disease and neuroprotection. With over 12 years of experience in ophthalmic research, Dr. Liu has led projects investigating the molecular mechanisms underlying photoreceptor and vascular degeneration, as well as retinal stress responses. His current work integrates bulk and single-cell RNA sequencing with CUT&RUN epigenomic profiling to study how neuroprotective factors—particularly LIF/STAT3—regulate retinal cell survival, aiming to identify novel therapeutic targets. Dr. Liu is dedicated to advancing basic and translational research to improve our understanding of retinal diseases and inform future therapeutic development.



**Bruna Lopes da Costa**
University of Pennsylvania
bruna.lopesdacosta@pennmedicine.upenn.edu

I am a Brazilian researcher passionate about translational science that brings therapeutic solutions to inherited retinal diseases. I earned my master's degree in Pharmaceutical Sciences in 2018, where I worked on projects involving drug delivery systems and ocular diseases. In 2025, I completed my PhD in Biomedical Engineering at Columbia University, focusing on retinal disease modeling using iPSC-derived retinal organoids and developing both gene-dependent and gene-independent therapies.

Currently, I am a postdoctoral researcher at the University of Pennsylvania, continuing my work on therapeutic approaches for genetic retinal disorders. My research integrates biomedical engineering, stem cell biology, and molecular therapies to explore new treatment avenues for patients at risk of blindness.

**W. Kyle McPherson**
Duke University
kyle.mcpherson@duke.edu

I am a third-year PhD student at Duke University. I work in the lab of Dr. Catherine Bowes Rickman, where we study and develop therapies for the molecular and cellular mechanisms that contribute to AMD. In my work, I am attempting to develop a gene therapy to prevent lipid accumulation and clear drusen in early AMD. This project is strongly influenced by my overall interests in studying the interactions between metabolism dysregulation and aging and conducting translational research. Before starting graduate school, I received my B.S. from the University of Virginia, where I trained in the lab of Dr. Michelle Bland. There, I worked to understand the interplay between nutrient storage and immune responses in the context of chronic juvenile infections. Outside of the lab, I enjoy running, hiking, baking, and reading with my cats: Socrates and Play-Doh.

**Roly Megaw**
University of Edinburgh
roly.megaw@ed.ac.uk

Roly Megaw is a clinical lecturer at the University of Edinburgh and a consultant ophthalmologist at NHS Lothian whose interests lie in the inherited retinal dystrophies (IRDs). Clinically, he runs the Lothian IRD service and is site principal investigator for interventional gene therapy and antisense oligonucleotide clinical trials for IRDs, as well as natural history studies. Pre-clinically he uses mouse models and human samples to better understand the molecular mechanisms that contribute to photoreceptor death in IRDs, with the long-term aim of identifying novel therapeutic targets.

**Jason Miller**
University of Michigan
miljason@umich.edu

Jason Miller, MD, PhD, is the James Grosfeld Endowed Professor and Assistant Professor in the Department of Ophthalmology at University of Michigan, where he focuses on dry age-related macular degeneration (AMD). He completed his undergraduate degree in biology at Stanford University, where he was active in development of microsurgical devices with the Department of Ophthalmology, his MD/PhD at University of California, San Francisco (UCSF), internal medicine internship at Kaiser Permanente Oakland, and post-doc, residency, and medical retina fellowships at University of Michigan Kellogg Eye Center. Joining Kellogg as faculty in fall 2021, his clinical focus is on AMD and other macular diseases. His research program seeks to establish primary and iPS RPE culture models of dry AMD as a platform for testing therapeutic interventions. The lab has a particular focus on RPE lipid handling and its relationship to pathologic extracellular deposit formation in AMD.

**Blanca Molins**
Institut d'Investigacions Biomèdiques August Pi i Sunyer (Spain)
bmolins@recerca.clinic.cat

I am a bioengineer with a special interest in understanding the drivers of retinal inflammatory-based disorders and their translation into medicine. I hold a MS degree in Chemical Engineering (IQS, Spain) and a PhD in Biomedicine (University of Barcelona, Spain). After different research stays abroad as a graduate student (MIT and Scripps) and postdoc (University of Bristol) I returned to Barcelona to the Group of Ocular Inflammation at IDIBAPS.

By closely working with clinicians, I aim to identify inflammatory biomarkers for a range of cular disorders while addressing the hypothesis that the acute phase-reactant C-Reactive rotein may play a role in age-related macular degeneration (AMD), beyond merely being a systemic marker. My experience at IBEC allowed me to learn new skills in biomaterial engineering and stem cell technologies that I am now applying to better understand the molecular basis of AMD.

**Anupam Mondal**
National Eye Institute/NIH
anupam.mondal@nih.gov

My research interests center around application of network medicine to better understand inherited retinal diseases and the mechanisms of aging with a goal of discovering novel treatments and therapies. I am also interested in exploring how environment and lifestyle variables moderate vision health throughout the human lifespan. I have extensive experience in integrative omics and in application for information theory approaches to diverse research programs involving the retina and beyond. With a background of engineering followed by graduate training in bioinformatics, I approach complex biological problems from a systems level perspective. After an enriching stint in Anand Swaroop's lab at the NIH, Bethesda, first as a postdoc and later as a research fellow, I am joining the UT Southwestern Medical Center in Dallas. There I will be establishing an independent research group dedicated to addressing key challenges in the vision field and fostering translational breakthroughs through data-driven research.

**Belén Moreno Jimenez**
Centro de Investigaciones Biológicas (Spain)
belen.moreno@cib.csic.es

Belén Moreno is a biochemist with a master's degree in pharmacological research, specializing in neuropsychopharmacology. After graduating, she joined the Neuroinflammation Unit at the Instituto de Salud Carlos III, where she contributed to the development of a human microglia model using pluripotent stem cells, to study neuroinflammation in Alzheimer disease. This experience deepened her interest in the interplay between inflammation and neurodegeneration.

Since October 2023, she has been pursuing her doctoral thesis in the Molecular Biology, Biochemistry and Biomedicine program at the Centro de Investigaciones Biológicas "Margarita Salas" in Madrid under the supervision of Dra. Catalina Hernández and Dr. Enrique de la Rosa. Her current work focuses on developing mutation-independent therapies for Retinitis Pigmentosa by targeting common hallmarks of the disease, such as inflammation. Specifically, she is investigating the topical application of a small peptide, the Preimplantation Factor (PIF) as a potential treatment.

**Emma Navratil**
University of Iowa
emma-navratil@uiowa.edu

Emma grew up in Minnesota and received a Bachelor of Science in Biochemistry and Molecular Biology from North Dakota State University in 2021. She is currently a PhD candidate in the Interdisciplinary Graduate Program in Genetics at the University of Iowa and a graduate research assistant in the lab of Dr. Robert Mullins. Her thesis research is focused on understanding the molecular mechanisms involved in the development and progression of age-related macular degeneration, with an emphasis on the role of choroidal endothelial cells. Specifically, she is interested in the roles that glycans, metabolomic disturbances, and senescence may play during degeneration of the choriocapillaris in early AMD. She utilizes human donor eyes and iPSC-derived endothelial cells to investigate these questions.

**Rafail Nikola**
Newcastle University (UK)
rafail.nikola@newcastle.ac.uk

I am a PhD student in the Retinal Stem Cell Research Group (RSCR), led by Professor Majlinda Lako in the Biosciences Institute at Newcastle University, specialising in stem cell therapy for retinal degeneration. My research focuses on developing hypoimmunogenic stem cell-derived photoreceptor precursors for transplantation, aiming to overcome immune rejection and improve long-term graft survival. This aligns closely with the group's central focus on stem cells and retinal regeneration. With a background in Biomedical Science (BSc) and Genomic Medicine (MSc), I combine expertise in molecular biology, immunology, and regenerative medicine to address translational challenges in vision restoration. My work integrates gene editing, 2D/3D retinal differentiation protocols, and immune profiling to evaluate cell–immune interactions in vitro. I am particularly interested in engineering universal donor cell lines for allogeneic therapy. My long-term goal is to contribute to the development of safe, effective, and accessible cell-based treatments for retinal diseases and advance ocular therapeutics.

**Eleanor Noone**
Trinity College Dublin (Ireland)
nooneel@tcd.ie

Dr. Eleanor Noone is a postdoctoral researcher in the laboratory of Professor Sarah Doyle at Trinity College Dublin. She was awarded her PhD in 2025 under Professor Doyle's supervision, with her doctoral research focused on investigating the impact of age-related changes in the immune system in the pathogenesis of age-related macular degeneration (AMD). She has previously presented her work at national and international conferences and was the recipient of competitive travel grants to attend the International Society for Eye Research (ISER) and the European Congress of Immunology (ECI) in 2024.

**Laura Patak**
University of California, Berkeley
laura_patak@berkeley.edu

I am a fourth-year PhD candidate in the Vision Science Program at the University of California, Berkeley, working with Dr. Teresa Puthussery. Prior to starting my PhD, I earned a degree in neuroscience at Colgate University and then worked with Dr. Wei Li at the National Eye Institute, where I studied the development of photoreceptors. My current research in the Puthussery Lab focuses on retinal degeneration and photoreceptor replacement therapy. Specifically, I aim to understand how retinal circuits remodel after injury or disease, and to assess the integration of transplanted stem cell-derived photoreceptors in the primate retina. My long-term career goal is to become a successful independent researcher in the field of retinal neurobiology, with a focus on retinal degenerations and therapeutic strategies for vision loss.

**Maria Pavlou**
Center for Molecular and Cellular Bioengineering
maria.pavlou@tu-dresden.de

I was always intrigued by all the molecular processes that make up life. This enthusiasm drove me to acquire a bachelor's degree in Biochemistry and Biotechnology from the University of Thessaly in Greece, giving me the fundamentals on plant and human biology. As I wanted to orient my knowledge towards human pathogenesis and therapies, I then pursued a master's degree in Biomedicine at Karolinska Institutet in Sweden. Through my studies, I was able to participate in neuroscience-oriented projects which further accentuated my interest in translational research. I continued my academic journey starting a PhD in 2022 in the lab of Marius Ader at the Center of Regenerative Therapies TU Dresden to study how the host microenvironment of the pathological retinae might have an effect on cell replacement therapies to treat retinal degenerative diseases.

**Davide Piccolo**
UCL
d.piccolo@ucl.ac.uk

Dr. Davide Piccolo is a research scientist with a background in molecular biology, genome editing and drug discovery, with a particular interest in protein misfolding diseases and retinal degeneration. He is currently a Research Fellow at the UCL Institute of Ophthalmology, where his work focuses on developing therapeutic strategies for inherited retinal dystrophies. His research explores the correction of membrane protein misfolding using small molecules and high-throughput screening platforms.

Davide completed his PhD in Cellular and Molecular Neuroscience at UCL where he developed a proximity complementation assay to study trafficking defects in ABCA4 and applied CRISPR/Cas9 genome editing to generate iPSC-derived retinal organoids. Before beginning his doctoral studies, Davide completed a master's thesis at TIGEM, investigating microRNA-based modulation strategies in mouse models. He later expanded his expertise in stem cell biology during an Erasmus internship at the Max Planck Institute of Psychiatry, developing brain organoids to model neurodevelopmental disorders.

**Peter M.J. Quinn**
University of Pennsylvania
peter.quinn1@pennmedicine.upenn.edu

Peter M.J. Quinn, PhD, is director of the PrimeSight Laboratory and Assistant Professor of Ophthalmology at the University of Pennsylvania. His research focuses on clinically translatable work, applying iPSC-derived retinal organoid models to further understand and treat ophthalmic genetic diseases. The Quinn Lab is developing gene editing therapeutics to ameliorate the phenotypic, histopathological, and molecular changes in retinal degeneration models.

Dr. Quinn earned his PhD at Leiden University under the guidance of Dr. Jan Wijnholds, his doctoral thesis was entitled "The Retinal Crumbs Complex: From Animal Models and Retinal Organoids to Therapy." He completed Postdoctoral training in IRD research under the mentorship of Drs. Stephen H. Tsang and Irene H. Maumenee at Columbia University.

## Avril Reddy

Trinity College Dublin (Ireland)
reddyav@tcd.ie

Dr. Avril Reddy is a postdoctoral researcher in Professor Matthew Campbell's lab at Trinity College Dublin. She completed her PhD in 2024, where she investigated the role of the inner blood-retinal barrier in the pathogenesis of age-related macular degeneration (AMD). Her current research focuses on how barrier dysfunction, immune dysregulation, and high dietary cholesterol contribute to the development and progression of geographic atrophy. Dr. Reddy employs a multidisciplinary approach, combining in vitro systems, mouse models, and human retinal imaging, to explore the complex interplay between vascular, immune, and metabolic factors in retinal degeneration. In other work, she has investigated cell-based therapeutic strategies for AMD, inducible treatment approaches, and the role of mononuclear phagocyte dysregulation in disease progression.

## Kaitryn Ronning

Sorbonne University
kaitrynronning@gmail.com

Dr. Kaitryn Ronning is a postdoctoral fellow in Dr. Florian Sennlaub's lab at the Vision Institute in Paris, having completed her PhD under the mentorship of Dr. Marie Burns at the University of California Davis. Her research focuses on the roles of immune cells in age-related macular degeneration. To study this intersection between the immune and nervous systems during disease, Dr. Ronning employs a broad range of approaches, ranging from single-cell transcriptomics to in vivo retinal imaging and a variety of mouse models. Her goals are to improve our understanding of AMD pathogenesis and explore the therapeutic potential of modulating immune responders during retinal disease.

**Miranda Scalabrino**

Medical College of Wisconsin
mirandascalabrino@gmail.com

Dr. Miranda Scalabrino is an assistant professor of ophthalmology at the Medical College of Wisconsin. She earned her PhD in Biomedical Sciences from the University of Florida in 2016, followed by postdoctoral training at Duke University. Dr. Scalabrino's research has revealed cone-mediated vision persists despite structural damage in a mouse model of retinal degeneration and that timing of genetic rescue critically impacts visual outcomes. She pioneered gene therapy approaches targeting ON bipolar cells and developed the first successful AAV therapy for congenital stationary night blindness delivered to these challenging-to-reach retinal cells.

**Andjela Sekulic, PhD**

Charite Universitaetmedizin Berlin (Germany)
andjela.sekulic@charite.de

My scientific career started in Sheffield, UK, where I was introduced to the power of experimental knowledge. It continued in Berlin, Germany, where I obtained a master's degree that led to pursuing a PhD. During the early stages of my journey, I studied the importance of the immune system and how its role changes with age from protective to damaging, as observed in age-related macular degeneration (AMD). As a PhD student at Charité Universitätsmedizin Berlin, I have focused on understanding the immunological contributors to develop and advance AMD. My research investigates complement factors H related protein 1 in non-canonical context, aiming to uncover less-explored roles and interplay between innate immunity and AMD. Additionally, I am interested in communication between immune cells and retinal pigment epithelium, that is restricted in health and promoted in the disease.

**Merve Sen**
University of Tübingen (Germany)
merve.sen@uni-tuebingen.de

Dr. Merve Sen is a postdoctoral researcher at the University of Tübingen, Germany, focusing on age-related macular degeneration (AMD). She obtained her PhD in Cellular and Molecular Neuroscience at the same institution, where she was a Marie Skłodowska-Curie Early Stage Researcher within the OcuTher MSCA-ITN program. Her doctoral research focused on targeted drug delivery systems for retinal diseases and proteostasis pathways. Dr. Sen holds a master's degree in Neuroscience from Bilkent University and a bachelor's degree in molecular biology and Genetics from Izmir Institute of Technology. She has trained at multiple institutions, including the University of Padova, the University of Eastern Finland, and the University of Oxford. Her current research investigates the ARMS2 A69S variant and its role in RPE cells and the neuroretina to better understand AMD. She received the DOG Retina Award in recognition of her PhD research and is passionate about advancing retinal research towards therapeutic applications.

**Sonali Singh**
University of California, Berkeley
sonalisingh@berkeley.edu

Sonali Singh is a fifth-year PhD candidate at the University of California, Berkeley where she's working on efficient AAV transduction of RPE via intravitreal injection using an AAV library screening method for the treatment of retinal degenerative diseases. To test the efficacy of her novel AAV capsids, she is delivering therapeutic gene, Rpe65, to RPE cells of the LCA2 disease model, rd12 mice. She has been fascinated with the eye since she was diagnosed with high myopia to a degree of -16.25 diopters at age six. She hopes to continue to develop gene therapies for retinal diseases after completing her PhD in 2026.

**Johnathon Sturgis**
Cleveland Clinic
sturgij3@ccf.org

Johnathon (John) Sturgis received his Bachelor of Science from the University of Cincinnati in 2018. After completing his degree, he worked as an environmental health specialist at the Warren County Combined Health District. In this role, he performed various duties promoting public health safety in the region. In coordination with the Ohio Department of Health, John was highly involved in the vector control program designed to track, investigate, and eliminate mosquito and tick-borne illnesses. In 2020, John joined the Cleveland Clinic and Case Western Reserve University School of Medicine to pursue his PhD. Over the last several years he has been conducting research in the laboratory of Dr. Vera L. Bonilha at the Cleveland Clinic Cole Eye Institute. The primary focus of his research project is to understand how the accumulation of mitochondrial DNA mutations with age leads to retinal degenerative pathologies.

**Grace Su**
Oregon Health & Science University
sug@ohsu.edu

Grace Li-Na Su is a 4th year Biomedical Sciences PhD student at Oregon Health & Science University (OHSU) in Portland, Oregon, USA. In 2021, they earned their bachelor's degree in biomedical engineering from Doane University in Crete, Nebraska, USA. Due to their longtime research interest in gene therapeutic treatment of rare heritable diseases, Grace joined the lab of Dr. Renee Ryals at OHSUs Casey Eye Institute, where they investigate lipid nanoparticles as a vehicle for delivery of gene therapies to the retina. Their current project attaches short peptides from AAV capsids to the surface of lipid nanoparticles to enhance delivery of mRNA to photoreceptors. Grace plans to pursue an international postdoctoral fellowship after they receive their PhD to further their studies in ocular gene therapy and advance their career in translational gene therapy research at an academic research institute.

**Kei Takahashi**
University of Pennsylvania
keitaka@vet.upenn.edu

Kei Takahashi, PhD, is a postdoctoral fellow in the Division of Experimental Retinal Therapies at the School of Veterinary Medicine, University of Pennsylvania. He earned his Ph.D. in Pharmaceutical Sciences from Gifu Pharmaceutical University in Japan in 2022. His research focuses on the molecular mechanisms of inherited retinal degenerations (IRDs) by integrating advanced imaging approaches with canine IRD models. Since beginning his postdoctoral training, he has applied ultrastructure expansion microscopy (U-ExM) to canine retinal tissue to study nanoscale features of the photoreceptor sensory cilium and ribbon synapses. His initial work, mapping protein localization in the photoreceptor sensory cilium, was featured in Investigative Ophthalmology & Visual Science in 2025. He is now extending the use of U-ExM to characterize the molecular architecture of ribbon synapses and early synaptic degeneration in disease models. His work provides a foundation for understanding retinal pathology at the molecular level using well-preserved retinal tissues.

**Eline Van Vooren**
Ghent University (Belgium)
eline.vanvooren@ugent.be

I am a PhD student in the research group of Prof. Dr. Elfride De Baere and Prof. Dr. Bart Leroy at Ghent University, Belgium. My project, titled “An integrated CRISPR/iPSC-based approach to elucidate variants of uncertain significance (VUS) in RPE65”, focuses on functionally characterizing and reclassifying RPE65 VUS to assess patient eligibility for Luxturna, the first FDA- and EMA-approved gene therapy for inherited retinal disease (IRD). I use CRISPR editing of patient-derived induced pluripotent stem cells (iPSCs), iPSC-RPE differentiation, and a quantitative enzymatic assay to measure RPE65 expression and activity. Two years ago, we unexpectedly identified a novel dominant RPE65-maculopathy, shifting my focus toward understanding its disease mechanism. To strengthen my skills, I trained in iPSC-RPE differentiation at the Institute of Neurosciences in Montpellier and in the RPE65 enzymatic assay at the NIH/NEI in Bethesda. My work bridges IRD genomics, disease modeling, and translational gene therapy research.

**Felix Wagner**
TU Dresden, Germany
felix.wagner@dzne.de

I am a PhD student at the Center for Regenerative Therapies TU Dresden (CRTD), Germany, in the group of Prof. Mike O. Karl (defense scheduled for August 2025). My research focuses on using human retina organoids as preclinical models for retinal degeneration. In my doctoral work, I described photoreceptor cell extrusion as a novel pathomechanism of neurodegeneration through live imaging and pathomechanistic studies. Prof. Christine Curcio (Alabama, USA) invited me to investigate the frequency and location of photoreceptor extrusion in AMD patient samples (Project MACULA repository). Additionally, I developed the first human organoid-based model system to study photoreceptor replacement therapy and its dependence on the stage of degeneration. My goal is to translate discoveries from human models into therapeutic strategies, bridging the gap between basic research and clinical application. Attending RD2025 offers a valuable opportunity to present my work, exchange ideas, and strengthen collaborations within the retinal degeneration research community.

**Katherine Wert**
University of Texas Southwestern Medical Center
katherine.wert@utsouthwestern.edu

Dr. Katherine Wert is an assistant professor in the Departments of Ophthalmology and Molecular Biology at the University of Texas Southwestern Medical Center. She earned her PhD in 2013 under the mentorship of Dr. Stephen Tsang at Columbia University, where she tested AAV gene therapy and developed mouse models for retinal diseases. She then joined the laboratory of Dr. Rudolf Jaenisch at the Whitehead Institute for Biomedical Research in Cambridge, MA from 2014-2017 as a postdoctoral fellow, studying disease using human stem cells and gene editing. She continued as a postdoctoral fellow under Dr. Vinit Mahajan at Stanford University from 2017-2019, studying inherited forms of retinal dystrophies. Dr. Wert joined UTSW in October 2019, where her current laboratory works to discover and understand mechanisms underlying photoreceptor degeneration, and to provide novel therapeutics for these complex disorders.

**Svenja Wingerter**
University of Tübingen (Germany)
svenja.wingerter@uni-tuebingen.de

Svenja Wingerter is a PhD student at the University of Tübingen in Germany, specializing in organ-on-chip technologies. Her research focuses on developing an advanced physiologically relevant retina-on-chip model to investigate the progression of dry age-related macular degeneration. Positioned at the interface of biology and engineering, she works collaboratively within the research groups of Prof. Simon Clark and Prof. Peter Loskill. Svenja holds a M.Sc. in Biochemistry with a focus on immunology and in vitro model development, complemented by international academic research experience in China and Sweden. Prior to starting her PhD, she worked as a scientist in a biotech company in France, where she contributed to the development of in vitro cancer immunology models to test the efficacy of oncolytic viruses. Her long-term goal is to advance the replacement of animal models with human-relevant systems to enhance the translation of preclinical research into clinical practice.

BrightFocus® Foundation

Cure in Mind. Cure in Sight.

BrightFocus is at the forefront of eye and brain health, supporting innovative research around the world and promoting better health through our three programs:

**Macular Degeneration Research**

**National Glaucoma Research**

**Alzheimer's Disease Research**

22512 Gateway Center Drive
Clarksburg, MD 20871
1-800-437-2423
www.brightfocus.org