August 15, 2026

F3 Report to the Governor - Ohio Lions Eye Research Foundation (OLERF)

Dear Governor Gary, the OH5 Cabinet and all OH5 Lions

The purpose of the Ohio Lions Eye Research Foundation is to sponsor eye research within Ohio covering Macular Degeneration, diabetes, and general eye research. This research is all done under the name of Ohio Lions.

I am pleased to announce that our district donations to OLERF were up $600 over last year, and this is also true all over the state!

Below is a nice flyer Ohio State just published promoting the current research going on in our eye research lab on campus. You are sponsoring research at other universities too!

Thank you for your past and future support.

Respectfully submitted,
PDG Jeff Sweeney

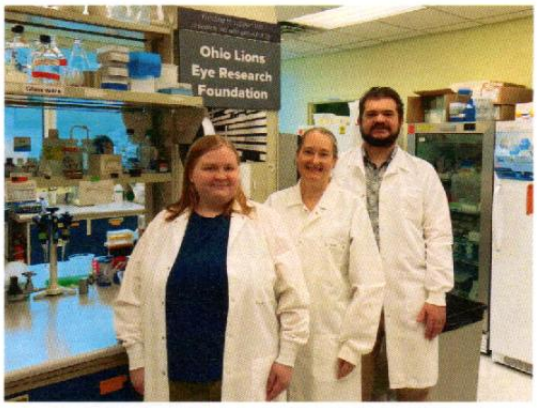
Ohio Lions Eye Research Foundation

2026 OSU Ophthalmology Research Overview

OLERF Research Grant: *Genetic, neurodegenerative, and proliferative mechanisms in retinal damage and inherited retinal diseases, and potential for therapy*

Colleen Cebulla, MD, PhD

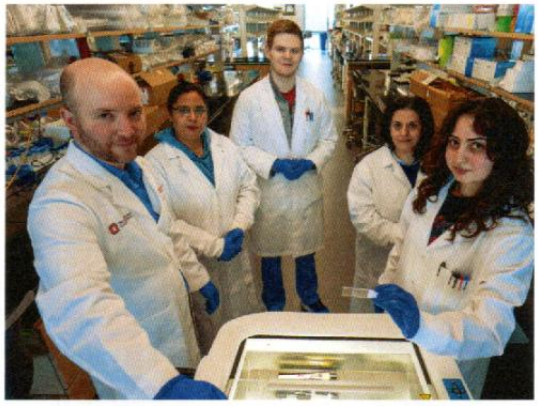
Dr. Cebulla and her lab have identified a pro-inflammatory protein: macrophage migration inhibitory factor (MIF), that is at high levels during retinal injuries and can lead to toxic effects at the site of damage. Dr. Cebulla was first to provide proof of concept for MIF inhibitors to treat vitreoretinal conditions. Inhibiting MIF leads to the preservation of retinal structure and function, even after damage has occurred. However, current drugs require re-formulation due to their short half-life. Dr. Cebulla is evaluating a nanoparticle for potential to improve drug half-life and targeting in the retina. She is also studying the repurposing of approved drugs with potential to protect retinal neurons from damage and starting an exploration of protecting the retina from diabetic retinopathy.



Dr. Cebulla & Research Team

Thomas Mendel, MD, PhD

Dr. Mendel has established a translational gene therapy lab to accelerate new gene-based treatments for Inherited Retinal Disease (IRD). Patients with IRDs slowly lose vision due to damaged cells in the retina. The goal of gene therapy is to target missing or defective genes within the cells to restore function and, in some cases, cure devastating illnesses. The Mendel lab is working to develop and optimize methods to improve outcomes and tailor treatments to each patient's unique needs.



Dr. Mendel & Research Team

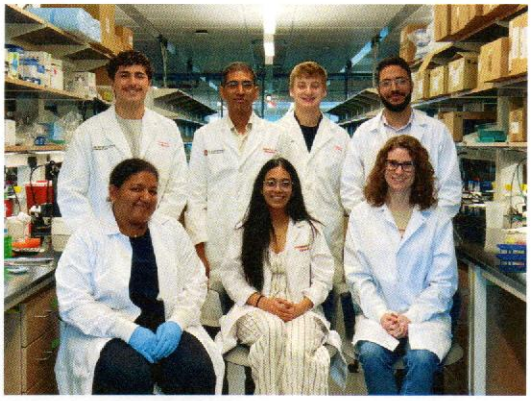
Shigeo Tamiya, PhD

Dr. Tamiya perfoms research to understand how scarring happens in the eye. His lab team investigates how specific cells behave when scarring begins, and tests medications that might prevent or reduce this harmful process. Multicellular systems are also utilized to examine cell-to-cell communication and how it contributes to the scarring process. His long-term goal is to stop scarring before it causes vision loss.

Dr. Tamiya

Neiderhauser AMD Grant: *Unraveling inflammatory mechanisms in aging eye*

Nagaraj Kerur, DVM, PhD



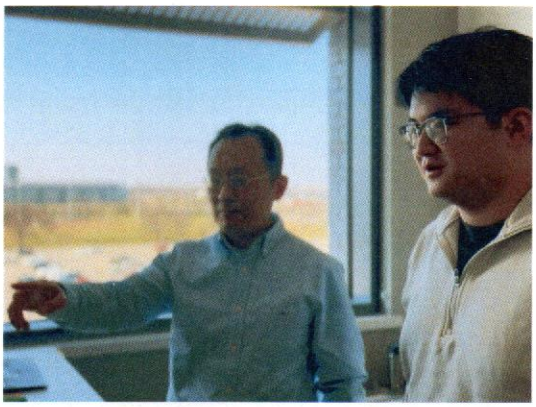
Dr. Kerur & Research Team

Dr. Kerur and his research team study the molecular mechanisms underlying inflammation and cell death pathways involved in the development and progression of age-related macular degeneration (AMD). His work focuses on the inflammasome and cGAS-STING pathways, which are involved in inflammation, cell death, and aging. His research has shown how these pathways contribute to the dysfunction and death of retinal pigment epithelium (RPE) cells, a key process in AMD. Dr. Kerur's lab also investigates aging-relevant molecular drivers of pathological angiogenesis in the eye. Recently, his team explored the potential of targeting telomerase as a therapeutic approach for neovascular AMD. Through these studies, Dr. Kerur aims to advance understanding of AMD and to identify new therapeutic strategies to prevent vision loss.

OLERF Student Fellowship: *Automatic determination of vertical cup-to-disc ratio from fundus images using artificial intelligence*

Raymond Gao, PhD

The Gao lab bridges two transformative fields -- genetics and artificial intelligence (AI). The goal is to improve early detection and treatment of eye diseases like glaucoma. Identifying genetic markers can help explain individual differences in disease progression and response to treatment. Retinal fundus images, which are photographs of the back of the eye, may reveal subtle structural changes that may occur years before a patient experiences noticeable vision loss. AI is used to train computer systems to analyze images to discover these changes. By linking detailed retinal image patterns with genetic information, better understanding of these relationships may lead to improved methods for detecting glaucoma earlier and may provide new insights into how the disease develops at the biological level.



Dr. Gao & Fengze Wu, Norbert Peiker Fellow

Thank you for your support!