

# RETINA RESEARCH FOUNDATION NEWSLETTER

Foresight for Sight

**November 2021**

Issue Number 3 / Volume 43

*Retina Research Foundation Newsletter is published three times per year: Spring, Summer and Fall.*



## Happy Thanksgiving Greetings

With Best Wishes,  
Retina Research Foundation  
Board of Directors & Advisory Trustees

The mission of the Retina Research Foundation is to reduce retinal blindness worldwide by funding programs in research and education.

# 2021 RRF Chairs and Professors



**Ching-Kang Jason Chen, PhD**  
*RRF Research Chair*  
Baylor College of Medicine  
Transducin- and Melanospin-Independent Phototransduction



**Barbara Blodi, MD**  
*Daniel M. Albert Chair*  
McPherson Eye Research Institute  
University of Wisconsin  
Clinical Trials for Macular Degeneration, Diabetic Retinopathy and other Retinal Diseases



**David Gamm, MD, PhD**  
*Emmett A. Humble Distinguished Director*  
McPherson Eye Research Institute  
University of Wisconsin  
Modeling and Treating Retinal Disease with Human Induced Pluripotent Stem Cells (hiPSCs)



**Bikash Pattnaik, PhD**  
*MD Matthews Professor*  
McPherson Eye Research Institute  
University of Wisconsin  
Vision Loss due to Ion-Channelopathy



**Nader Sheibani, PhD**  
*RRF Research Chair*  
Department of Ophthalmology and Visual Sciences  
University of Wisconsin  
Regulation of Ocular Vascular Development and Neovascularization



**Jeremy Rogers, PhD**  
*Edwin and Dorothy Gamewell Professor*  
McPherson Eye Research Institute  
University of Wisconsin  
Optical Instrumentation and Technology Platforms for the Study and Screening of Retinal Disease



**Kevin Eliceiri, PhD**  
*Walter H. Helmerich Chair*  
McPherson Eye Research Institute  
University of Wisconsin  
Computational Imaging of the Cellular Microenvironment



**Mrinalini Hoon, PhD**  
*Rebecca Meyer Brown Professor*  
McPherson Eye Research Institute  
University of Wisconsin  
Remodeling of Inner Retinal Connections during Photoreceptor Degeneration



**Krishanu Saha, PhD**  
*Kathryn and Latimer Murfee Chair*  
McPherson Eye Research Institute  
University of Wisconsin  
Bioengineering of Novel Cell and Gene Therapies for the Retinal Disorders





November 2021

Dear Friends,

The search for solutions to retinal blindness is a fascinating reflection of the many complex processes that work together to allow us to see.

Retina Research Foundation funds a diverse mix of basic research projects. Some projects are aimed toward discovering the genetic causes of retina degeneration and dysfunction and expanding the options for successful gene therapy. Other projects look for solutions stemming from the body's own cells as a way to replace aged or damaged retinal tissue, and one scientist looks for similar answers by studying a salamander that has the ability to regenerate its retina. Research efforts to understand the impact of diseases like diabetes, as well as the role of nutrition, the gut biome and inflammation on retina tissues and function are also among funded projects. RRF support goes to research focused on advancing imaging applications in clinical research and treatment of retinal disease as well. The groundbreaking work of these vision scientists is awe inspiring!

Speaking on behalf of the RRF Board of Directors, we can say with certainty that RRF is contributing in a substantial way to the body of scientific research so essential to finding the causes and cures of vision loss from retinal diseases. And while research is essential, so too is making sure practicing ophthalmologists have access to this knowledge, which the Foundation does through its educational programs that provide advanced training to retina specialists.

You, our friends, make all this good and vital work possible. Thank you for volunteering your time, for including the Foundation in your estate plans, and for contributing to RRF's annual fund each year. Your support ensures that our organization can continue to make meaningful contributions to the dynamic field of retinal research, and if you have not given to RRF this year, we hope you will consider doing so. We are most grateful for your loyal support.

Wishing you the best this Thanksgiving and throughout the year ahead,

A handwritten signature in black ink, appearing to read 'John C. Dawson, Jr.', written in a cursive style.

John C. Dawson, Jr.  
Chairman of the Board

A handwritten signature in black ink, appearing to read 'Rosanette S. Cullen', written in a cursive style.

Rosanette S. Cullen  
Fund Drive Chair

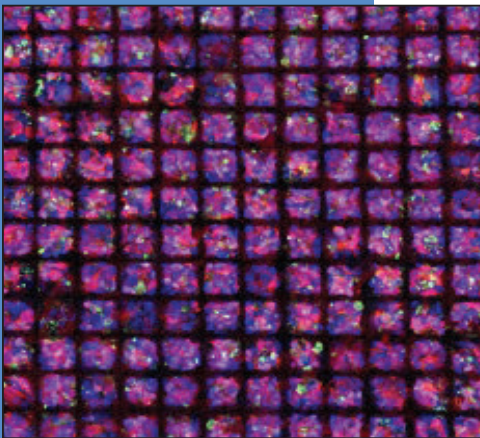
# Prestigious NEI Grants Awarded to RRF Affiliated Vision Scientists

On October 7, 2021, the NIH/National Eye Institute announced three new projects designed to enhance the survival and integration of regenerated neurons in the visual system. Two researchers, Dr. David Gamm and Dr. Yingbin Fu, whom RRF currently supports, are among the grant recipients. With funding through the Audacious Goals Initiative (AGI), the NEI has awarded \$18.5 million over a five-year period to projects that aim to develop models that can evaluate the survival and integration of regenerated cells, including light-sensing photoreceptors and retinal ganglion cells (RGCs), which carry visual signals from the retina to the brain. The models will enable the gathering of data essential to understanding blinding disease and what happens to the retina during regeneration. The human retina does not have the ability to regenerate or repair itself after cell loss due to injury or from dysfunction due to degenerative causes, so at a national level, the NEI's goal is to stimulate research directed toward solving this enigmatic problem.

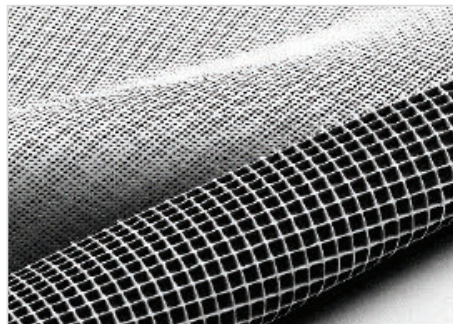


*David Gamm, MD, PhD  
McPherson Eye  
Research Institute  
University of Wisconsin*

Dr. David Gamm, University of Wisconsin, and Emmett A. Humble Distinguished Director at the McPherson Eye Research Institute, is a member of a multidisciplinary team of researchers who will evaluate the survival and functional integration of transplanted photoreceptors. With deep expertise in the use of human induced pluripotent stem cells (hiPSCs) to generate clinical-grade photoreceptors and retinal pigment epithelium, Dr. Gamm's contribution to the NEI AGI research project, entitled *Accelerating photoreceptor replacement therapy with in-vivo cellular imaging of retinal function*, will be to transplant replacement photoreceptors into damaged retina as micro-aggregates and in scaffolds designed to promote integration. His efforts will be combined with the work of his colleagues who will leverage imaging technology to first surgically remove photoreceptors and later evaluate restored retinal activity in vivo, and also examine the effects of photoreceptor loss and restoration on photoreceptor signaling on existing retinal circuitry.



*Courtesy of Dr. Gamm,  
image of a photoreceptor  
scaffold with photoreceptors  
shown in red.*



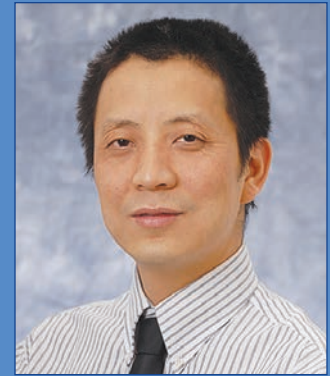
*Courtesy of Dr. Gamm,  
image of a photoreceptor  
scaffold, referred to as  
having an "ice cube tray"  
(ICT) design.*

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Dr. Yingbin Fu, Baylor College of Medicine, leads a winning research team that, as their project title implies, will take a *Two-pronged approach to generating new models of photoreceptor degeneration for regenerative cell therapy*. Dr. Fu and his collaborators will compare two approaches. In the first, they will use lasers to surgically remove photoreceptors in an advanced animal model. In the second strategy, they will use a gene editing technology to “prune” photoreceptors from the retina through gene disruption, which accurately mimics the gradual loss of photoreceptors observed in inherited retinal diseases. After characterizing the changes in both models, they will evaluate their ability to incorporate stem cell-derived replacement retina in the host animals.

Dr. Fu is the current recipient of RRF’s Dana and Gil Petri Research Project, and for the last four years, RRF has supported his project: *A novel treatment strategy for age-related macular degeneration by targeting cholesterol transport*, a completely separate project from his work funded by the NEI. However, Dr. Fu’s expertise in developing age-related macular degeneration (AMD) models that can represent a broad spectrum of patient types is essential to the NEI project. For more information on the NEI Audacious Goals Initiative (AGI) and these awards, visit: [nei.nih.gov](http://nei.nih.gov).



Yingbin Fu, PhD  
Baylor College of Medicine

## If Holiday Travels Take You to San Francisco...

Take time to visit the American Academy of Ophthalmology’s newly opened **Museum of the Eye**. The most recent initiative to be added to RRF’s education program, the museum offers lively, hands-on and virtual experiences where you can learn about the mechanics of how your eyes actually work. Interactive displays and rotating exhibits, from of over 38,000 ophthalmologic artifacts representing historical advancements in the treatment of the eye, are engaging for all ages, school children and adults, lay and professionals alike. RRF sponsors the **Retina Gallery** that shows how the visual system functions and how the powerful retina works together with the brain to produce our sight.

The museum, free to the public, is located in the Fisherman’s Wharf neighborhood, adjacent to Ghirardelli Square.

Visit: [aao.org/museum-of-the-eye](http://aao.org/museum-of-the-eye) to learn more and plan your trip!

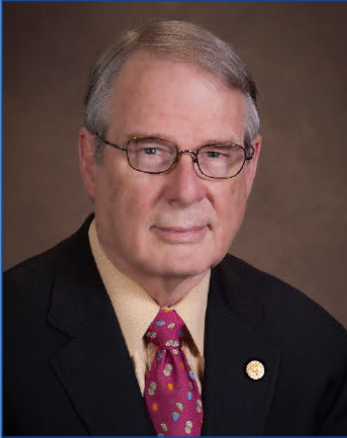


Retina Research Foundation is dedicated to the eradication of retina disease through programs in research and education.  
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# Honoring Frank K. Eggleston, DDS

Chairman Emeritus, Retina Research Foundation



*Frank K. Eggleston, DDS*

Dr. Franklin King Eggleston was a life-long resident of Texas, born in 1942, and raised in Houston, Texas. He earned a double degree in biology and chemistry from Texas Christian University and his dental degree from Baylor College of Dentistry. After serving in the Navy as a lieutenant aboard the USS Sierra in Norfolk, Virginia, he returned to the Bayou City to practice preventive and restorative dentistry for over 35 years. Dr. Eggleston passed away on July 25, 2021.

Dr. Eggleston held numerous leadership roles in organized dentistry. He was very active in his professional organizations, and included among his leadership roles: Trustee of the American Dental Association and President of the Texas Dental Association. Dr. Eggleston was also a member of American Academy of Restorative Dentistry, International College of Dentists and the American College of Dentists. Dr. Eggleston was twice awarded the gold medal for distinguished service by the Texas Dental Association; Texas Dentist of the Year, 1995; and he received the Texas Dental Association's highest award, the Distinguished Service Award, in 1996.

In his community, Dr. Eggleston was equally active, serving as a Deacon and teaching bible study at his church. He served on the board of several charitable organizations, including RRF.

## **RRF Leadership Roles**

Board of Managing Directors, 2000-2021

Executive Committee, 2001-2020, Fund Drive Chair, 2001 and 2005

Chairman, Board of Managing Directors, 2007-2020

Honorary Chairman Emeritus, 2020-2021

Dr. Eggleston joined the RRF Board of Managing Directors in 2000, and from that time forward he committed himself to the Foundation in much the same way he had devoted himself to his professional affiliations. Both Dr. Eggleston's wife and daughter had their sight preserved or restored through Dr. Alice McPherson's work, so he believed deeply in the core mission of RRF. He said, "It is about saving sight, and that's why I'm there."

Dr. Alice McPherson reflecting on Dr. Eggleston's tenure commented, "Frank had been chairman of many notable organizations in Houston and in the state, so we were happy when he agreed to become Chairman. He was

*(continued on page 7)*



*Dr. Frank Eggleston and  
Dr. Alice McPherson,  
RRF Luncheon, 2015*

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a superb parliamentarian, and so skilled at chairing a meeting. He could facilitate lively discussion but always kept us on track and on time. He brought his enthusiasm for our mission to each RRF gathering, and his true dedication showed on every occasion.”

Dr. Eggleston himself cited several reasons for why he felt RRF ran so well and inspired loyal board commitment year after year: good chemistry of the board, clear guidelines and organizational structures established by RRF’s previous leaders, open discussion with an eye toward efficient use of meeting time and most importantly, a clear mission: “We save people’s sight, and that’s what it is all about.”

Throughout the years that Dr. Eggleston would lead RRF, the Foundation’s research and education programs grew exponentially. Income from investments doubled, fueling the growth of RRF’s research support to a total of \$36.25 million dollars by the end of his tenure as Chairman in 2020. With great spirit and style, he chaired all monthly RRF board meetings, led the RRF visit to Wisconsin in 2015 and again in 2018, and welcomed donors and friends to numerous bi-annual RRF luncheons and the 50th Year Celebration Gala in 2019. By the time of his appointment as Chairman Emeritus in 2021, Dr. Eggleston had made an indelible impact on RRF and he will be greatly missed by all of us!



*Dr. Eggleston at RRF’s 50th Anniversary Golden Jubilee Gala, 2019*

*Dr. Frank Eggleston and Sara Eggleston, RRF Luncheon, 2017*



*RRF Board of Directors, Annual Meeting, 2014*



# RETINA RESEARCH FOUNDATION NEWSLETTER

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**Editor in Chief:** Alice McPherson, MD  
**Managing Editor:** Virginia Gissel Schwanauer

Retina Research Foundation is a Nonprofit Organization.  
retinaresearchfnd.org

FREE MATTER  
FOR THE  
BLIND OR  
HANDICAPPED

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## Special Remembrances

### IN MEMORY OF

#### Frank K. Eggleston, DDS

Mr. and Mrs. Louis K. Adler  
Robert T. Bolling  
Margaret and Frank Farese  
David Haily, Paragon Financial Advisors  
Sallye and Donald Henderson  
Bettie Harding Lee  
Jerry Long, DDS  
Alice McPherson, MD  
Suzanne Miller  
Diane Nizza and  
Federico Zegarra-Ballon  
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Kathy Norsworthy  
Philip Shear

#### Elizabeth Hail Smith

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The Bayou Fund

#### Barbara Jean Whites

Kenneth W. and  
Mary Louise Wunderlick

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## A GIFT TO RRF CAN SAVE SIGHT

Retina Research Foundation, a public foundation, supports research directed toward treating, preventing or curing all retinal diseases that damage and destroy vision. Your support is vital to the success of our efforts. RRF accepts secure donations at [retinaresearchfnd.org](http://retinaresearchfnd.org). This holiday season, support RRF by making your online purchases through [amazon smile](https://www.amazon.com/smile). Use the link on RRF's website or go to [smile.amazon.com](https://smile.amazon.com) to register. Select RRF as your charity of choice. Once selected, all future purchases will result in an automatic donation to RRF of 0.5% of your purchases, at no cost to you. RRF is a registered 501(c)(3) non profit with these organizations: Benevity, Network for Good and YourCause. Thank you!

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