

# RETINA RESEARCH FOUNDATION NEWSLETTER

Foresight for Sight

September 2019

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*Alice McPherson, MD,  
RRF President*

## GOLDEN JUBILEE

RRF RETINA RESEARCH  
FOUNDATION

RRF's  
50<sup>th</sup>

ANNIVERSARY 1969 - 2019



*Frank Eggleston, DDS,  
RRF Chairman*



Retina Research Foundation is celebrating its 50th Anniversary this year.

On May 18, 2019, many leaders, supporters, and friends of the Foundation gathered together to learn more about the history of RRF and to celebrate the occasion. Shara Fryer served as Moderator, Dr. Frank Eggleston welcomed the guests, and John Dawson spoke about the early days of RRF.

Dr. Alice McPherson described her dream of establishing a private Foundation to fund basic science retina research in the late '60s, the early leaders and donors who made that dream a reality, and the advances in vision preservation that she has seen as a result of that research. Dr. McPherson recognized her teacher and mentor, Dr. Charles



*Guests at the Golden Jubilee*

Schepens, and told the story of his invention of the binocular indirect ophthalmoscope and the way it transformed ophthalmology. This innovative instrument opened up new frontiers in vision care, as physicians from that time forward could clearly see everything in the retina, accurately diagnose and treat retinal diseases.



*Shara Fryer,  
RRF Director*

Dr. McPherson thanked the Board members, Advisory and Scientific Trustees, scientists, friends and supporters of the Foundation for their dedication and continuing interest in supporting our mission of vision preservation.

Beginning with the first pilot study grant in 1973, RRF programs in research and education have grown through the years to span the globe and now include basic science research, chairs, professorships, awards, international fellowships, travel grants and educational programs. Almost \$35 million has now been spent in support of these programs.



*John Dawson,  
RRF Secretary*

*Please join us in celebrating RRF's 50th Anniversary  
– we couldn't do it without you!*

# Statins Beneficial in Diabetic Retinopathy

A recent scientific study has confirmed earlier theories that statins may reduce the risk of development of diabetic retinopathy in patients with type 2 diabetes. In diabetes, this eye disease can lead to vision loss or blindness.

The study, conducted between January 1, 1998, and December 31, 2013, collected data from more than 37,000 patients in Taiwan with this type of diabetes, with half of those patients taking statins. Researchers discovered that in those patients taking statins, there was both a lower rate of diabetic retinopathy and also fewer interventions were required if treatment was needed than in patients not taking statins. The effectiveness of statins as the primary means of preventing retinopathy in patients with diabetes is not proven, but these findings suggest that statins when prescribed could slow the progression of vision-threatening diabetic retinopathy.

These findings were published in JAMA Ophthalmology. The study was led by Sunir Garg, MD, of Wills Eye Hospital in Philadelphia; J. Michael Jumper, MD, of West Coast Retina Medical Group in San Francisco; and Eugene Yu-Chuan Kang, MD of Chang Gung Memorial Hospital in Taiwan.

According to Dr. Garg, “For people with diabetes and high cholesterol, the cornerstone [of your care] is still going to be following a diabetes-wise diet and getting regular exercise because we know actively managing your blood cholesterol is critical in order to reduce the risk of having a heart attack and stroke.” And “if patients do not have high cholesterol, we don’t know if the statins will be potentially helpful or not [for eye health],” he cautions.

“These findings confirm the growing body of knowledge that better control of blood glucose, blood pressure, and blood cholesterol all reduce the risk of diabetic complications,” says Dr. Jumper. People with diabetes who control their blood sugar, cholesterol, and blood pressure, get regular exercise and avoid smoking have the best chance of preserving their vision.

<https://www.endocrineweb.com>

<https://www.reviewofophthalmology.com>



*Sunir Garg, MD*



*J. Michael Jumper, MD*



*Eugene Yu-Chuan Kang, MD*

# Eye Scan Can Detect Alzheimer's Disease

A recent study led by Duke Eye Center ophthalmology professor Dr. Sharon Fekrat, and Duke ophthalmologist and retinal surgeon Dr. Dilraj Grewal, has found that loss of blood vessels in the retina may be one signal of Alzheimer's disease. Optical coherence tomography angiography (OCTA) can detect changes to the small blood vessels at the back of the eye. In this study, using this technique the team found changes in the different layers of retinal blood vessels in patients with Alzheimer's compared to healthy individuals.

Researchers scanned the eyes of 76 individuals with mild cognitive impairment (MCI) or Alzheimer's disease and 133 individuals without impairment (control group). Scans of the individuals with Alzheimer's showed loss of small retinal blood vessels compared to the scans of individuals with MCI or the control group, and the macular ganglion cell-inner plexiform layer of the retina was also much thinner in this group.

"We know that there are changes that occur in the brain in the small blood vessels in people with Alzheimer's disease, and because the retina is an extension of the brain, we wanted to investigate whether these changes could be detected in the retina using a new technology that is less invasive and easy to obtain," said Dr. Grewal.

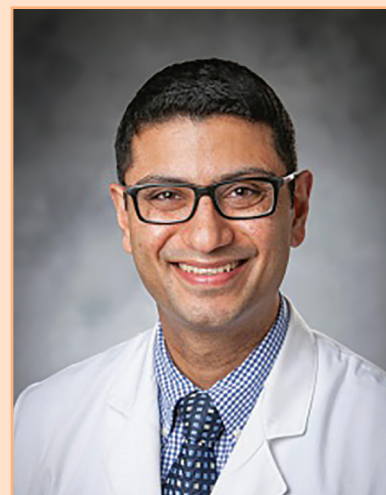
"Early diagnosis of Alzheimer's disease is a huge unmet need," Dr. Fekrat said. "It's not possible for current techniques like a brain scan or lumbar puncture (spinal tap) to screen the number of patients with this disease. It is possible that these changes in blood vessel density in the retina may mirror what's going on in the tiny blood vessels in the brain...Ultimately, the goal would be to use this technology to detect Alzheimer's early, before symptoms of memory loss are evident, and be able to monitor these changes over time in participants of clinical trials studying new Alzheimer's treatments."

The researchers reported their findings in Ophthalmology Retina in a paper titled, "Retinal Microvascular and Neurodegenerative Changes in Alzheimer's Disease and Mild Cognitive Impairment Compared with Control Participants."

<https://www.genengnews.com>



*Sharon Fekrat, MD*



*Dilraj Grewal, MD*

# 2019 Retina Research Foundation Pyron Award



**Joan O'Brien, MD,  
2019 RRF Pyron Awardee**

On July 28 at the American Society of Retina Specialists (ASRS) Annual Meeting held in Chicago, IL, Dr. Joan M. O'Brien presented the 24th Annual RRF Gertrude D. Pyron Award Lecture, "Genetics of Retinal Disease." She was selected for this honor in recognition of her lifelong work on ocular tumors.

Dr. O'Brien is chair of the Department of Ophthalmology, director of the Scheie Eye Institute, and William F. Norris and George E. de Schweinitz Professor of Ophthalmology at the University of Pennsylvania School of Medicine. In addition to Dr. O'Brien's duties as a chairman and ocular oncologist, she serves as the principal investigator of a five-year, \$11.25 million R01 glaucoma genetics study on African Americans that has enrolled more than 10,000 patients in Philadelphia and that has the potential to provide more targeted screenings and treatments for this disease.



**Dr. O'Brien with  
Timothy G. Murray, MD (left)  
and John S. Pollack, MD,  
ASRS President**

*(photos credit:  
Kevin Caldwell Photography)*

Dr. O'Brien's research on ocular genetics has advanced diagnostic and treatment options for several diseases. Working with Boris Bastian's lab at the University of California-San Francisco (UCSF), Dr. O'Brien discovered and characterized two novel oncogenes in uveal melanoma, GNAQ and GNA11, which were published in *Nature* and the *New England Journal of Medicine*. This discovery allowed for personalized, targeted therapy for patients with uveal melanoma, improving their quality of life.

Dr. O'Brien also identified numerous unique pathogenic variants in the retinoblastoma gene (RB1). This testing, which allowed retinoblastoma therapy to be directed according to underlying genetic risk, is now offered nationwide at no charge through the National Eye Institute's (NEI's) eyeGENE initiative.

The Pyron Award was created by the Retina Research Foundation to recognize outstanding vision scientists whose work contributes to knowledge about vitreoretinal disease.

[www.asrs.org/annual-meeting/awards/gertrude-d-pyron-award](http://www.asrs.org/annual-meeting/awards/gertrude-d-pyron-award)

# Night Vision Basics

Night vision, the ability to see in low light conditions, differs from daytime vision in several key ways. The human retina has two types of photoreceptors: rods and cones.

Rods allow you to see in low light and are more sensitive than cones. Color vision and peripheral vision are poor in low light. Cones allow you see color and fine detail.

Decreased night vision could be due to the natural aging process, but it could also be a sign of something more serious, so schedule an appointment with your ophthalmologist if you notice reduced vision in low-light conditions.



<https://www.aaopt.org>

<https://www.webmd.com>



*“The scientist is not a person who gives the right answers, he’s one who asks the right questions.”*

**Claude Levi-Strauss**  
*French anthropologist,  
1908 - 2009*

# 2019 Retina Research Foundation Award of Merit In Retina Research



**Charles L. Schepens, MD**  
*1978 RRF Award of Merit Awardee*



**James Fujimoto, PhD**  
*2019 RRF Award of Merit Awardee*

The Award of Merit in Retina Research was established by RRF in 1978 to recognize outstanding vision scientists whose work contributes to knowledge about the retina and retinal diseases. Beginning with the first Award of Merit presented to Charles L. Schepens, MD, and continuing to the present day, the Award of Merit recognizes excellence in retina research.

Each year the Award of Merit recipient is chosen by the Awards Committee of the Retina Society, and the selection criteria are:

- A single outstanding achievement in retina research, or;
- A potentially significant contribution to new knowledge about the retina, its role in the visual process and/or vitreoretinal diseases or disorders.

James G. Fujimoto, PhD, of Massachusetts Institute of Technology, Cambridge, MA, has been selected this year's Award of Merit honoree, and will deliver the Schepens Lecture on September 14, 2019, at the 52nd Annual Meeting of the Retina Society in London, England. Dr. Fujimoto's title is, "Optical Coherence Tomography: History, Evolution and Future Prospects."

Dr. Fujimoto's group and collaborators were responsible for the invention and development of optical coherence tomography (OCT), performing some of the first studies in ophthalmology. He is Elihu Thomson Professor, Department of Electrical Engineering and Computer Science and Research Laboratory of Electronics, at MIT.

## What is OCT?



**Optical coherence tomography (OCT)**

Optical coherence tomography (OCT) is an imaging test that uses light waves to take cross-section pictures of your retina. This non-invasive test allows your ophthalmologist to see each of the retina's distinctive layers, and to map and measure their thickness. These measurements help with diagnosis and provide treatment guidance for glaucoma and diseases of the retina, including age-related macular degeneration (AMD) and diabetic eye disease.

<https://www.aaopt.org/eye-health>

# ANNOUNCEMENTS

## PILOT STUDIES: Two new projects in 2019

### Jianhai Du, PhD

Dept. of Ophthalmology  
West Virginia Univ. School of Medicine  
Morgantown, WV

Project: Nutritional strategies in Age-related macular degeneration

### Francesco Giorgianni, PhD

Dept. of Pharmaceutical Sciences  
University of Tennessee Health Science Center  
Memphis, TN

Project: CD5L-mediated autophagocytosis in RPE cells



*Dr. Du (far right) with his lab team*

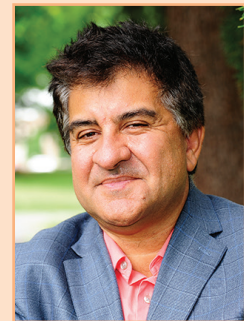
## APPOINTMENT

### RRF Murfee Chair at McPherson Eye Research Institute

#### Kris Saha, PhD

Dept. of Biomedical Engineering  
University of Wisconsin-Madison  
Madison, WI  
Term: July 1, 2019 to June 20, 2022

Dr. Saha's focus is engineering the next generation of cell and gene therapies. His work holds significant potential for addressing disorders that affect the outer retina, including macular degenerative diseases.



*Francesco Giorgianni, PhD*



*Kris Saha, PhD*

### RRF is a registered donor organization with AmazonSmile

When you shop on Amazon, you are now able to automatically send a donation to Retina Research Foundation.

#### How?

- 1) Shop at [smile.amazon.com](https://smile.amazon.com) and choose RRF as your charity of choice.
- 2) You can also access the link through RRF's website at [retinaresearchfnd.org](https://retinaresearchfnd.org)
- 3) AmazonSmile Foundation will donate 0.5% of the purchase price of eligible products to RRF.  
*There is no additional cost to you - Amazon makes the donation on your behalf.*
- 4) *After selecting RRF as your charity, every AmazonSmile purchase you make triggers an Amazon automatic donation to RRF. It's that simple!*

# RETINA RESEARCH FOUNDATION NEWSLETTER

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**Managing Editor:** Margaret Farese

Retina Research Foundation Is a Nonprofit Organization.

FREE MATTER  
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## Special Remembrances

### IN HONOR OF

#### RRF's 50th Anniversary

Shara Fryer and Barry Silverman  
Margaret and Ames Smith  
Mr. and Mrs. Larry Wuebbels

#### Lynn and Henry Gissel "in celebration of the 50th Anniversary of RRF"

Mr. and Mrs. Gary Andrews

#### Rose Haché and Dean Malouta

Mr. and Mrs. Richard E. Shore, Jr.

#### Heather & Preston Humble

Felicity Williams

#### Mary Farish Johnston

William S. and Lora Jean Kilroy Foundation

#### Nicolas Portilla-Villota "with best wishes for a speedy recovery"

Silvia Villota

#### Dr. Arthur Willis

Dr. and Mrs. Raymond Kahn

### EMPLOYEE MATCH

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Larry Washington

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#### Lanny and Philip Wolff Trust

#### Bailey Family Charitable Remainder Unitrust

### IN MEMORY OF

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### EMPLOYEE GIVING

**Benevity** Google employee (anonymous)

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RRF accepts credit cards for donations securely online at [www.retinaresearchfnd.org](http://www.retinaresearchfnd.org)  
Call the office for more information: 713-797-1925



Additional memorials received will appear in the next issue.