

RETINA RESEARCH FOUNDATION NEWSLETTER

Foresight for Sight

March 2017

Issue Number 1 / Volume 39

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New Insight Into Alzheimer's Disease

A new study from The University of Texas Medical Branch at Galveston has shed new light on Alzheimer's disease: how it begins within the brain and how to detect the disease in its early stages by looking at patients' retinas. Researchers identified that there is a relationship between the onset of the disease, inflammation, and a toxic protein. Earlier studies by UTMB scientists had found evidence that a toxic form of tau protein may be related to Alzheimer's development. It is believed that inflammation within the brain plays a crucial role in Alzheimer's development and progression, and it may be that this toxic form of tau proteins may be responsible for this inflammation.

"Early detection of Alzheimer's warning signs would allow for early intervention and prevention of neurodegeneration before major brain cell loss and cognitive decline occurs," said lead author Ashley Nilson, a neuroscience graduate student. "Using the retina for detecting AD and other neurodegenerative

diseases would be non-invasive, inexpensive and could become a part of a normal screening done at patient checkups."

Analyzing brain and retina samples from people with Alzheimer's and a mouse model of Alzheimer's, UTMB's research team studied the link between inflammation, toxic tau and Alzheimer's onset. The results, published in the *Journal of Alzheimer's Disease*, demonstrated that the toxic tau may induce inflammation and lead to cell death throughout the brain over time.

A complete eye exam can alert health care professionals to several medical conditions including diabetic complications, high cholesterol and high blood pressure. Now, retina tissue has been identified as possibly showing evidence of toxic tau and inflammation that may be early signs of Alzheimer's disease.

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University of Texas Medical Branch - Galveston



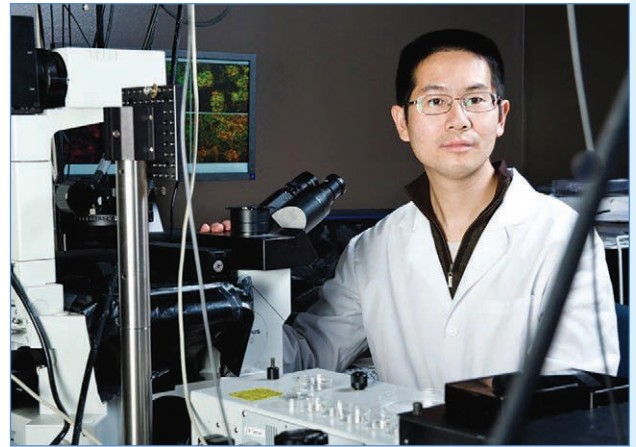
Dr. Rakez Kayed

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“Our findings suggest that the degeneration of nerve cells due to chronic inflammation induced by the tau oligomers may be combated through the combination of anti-tau oligomer and anti-inflammatory therapeutics for the treatment of Alzheimer’s and related diseases,” said senior author Rakez Kayed, PhD, associate professor in the UTMB Department of Neurology.

The authors include a team of collaborative scientists and doctors including UTMB’s Wenbo Zhang, PhD, an RRF-sponsored researcher since 2014. Dr. Zhang is assistant professor, UTMB Department of Ophthalmology & Visual Sciences, in Galveston, TX.

<https://eurekaalert.org>



Dr. Wenbo Zhang

Diabetes and Your Eyes



Complete eye exam

Diabetes can increase your chances of vision loss, but there are steps you can take to minimize your risk. Several factors influence whether you will develop retinopathy if you are diabetic. Keeping your blood sugar and blood pressure levels close to normal minimizes your risk. You are more likely to have retinopathy if you have had diabetes for a long time, and there is a genetic component to your risk of developing eye disease.

Regular eye exams can detect diabetic eye disease such as retinopathy in the early stages, when treatments are most likely to be successful. People may not have noticeable symptoms until it is too late, when the retina is already damaged, so periodic eye exams as recommended are your best protection. If treatment is required, optimum results occur when sight is still normal.

<http://www.diabetes.org>

Gillingham Pan-American Fellowships

Retina Research Foundation, in affiliation with the Pan-American Association of Ophthalmology (PAAO), supports two, six-month fellowships each year for qualified Latin American ophthalmologists to train at leading institutions in the United States and Canada. Candidates are selected by the PAAO Fellowship Committee based on outstanding potential for research careers and commitment to teaching in an accredited medical school in their home country.

This program, funded by Retina Research Foundation and administered by PAAO, was made possible through a gift to RRF from Mr. W. J. Gillingham. Since 1992, a total of 48 young ophthalmologists have received advanced subspecialty training and returned to their home countries following training to teach and treat patients.

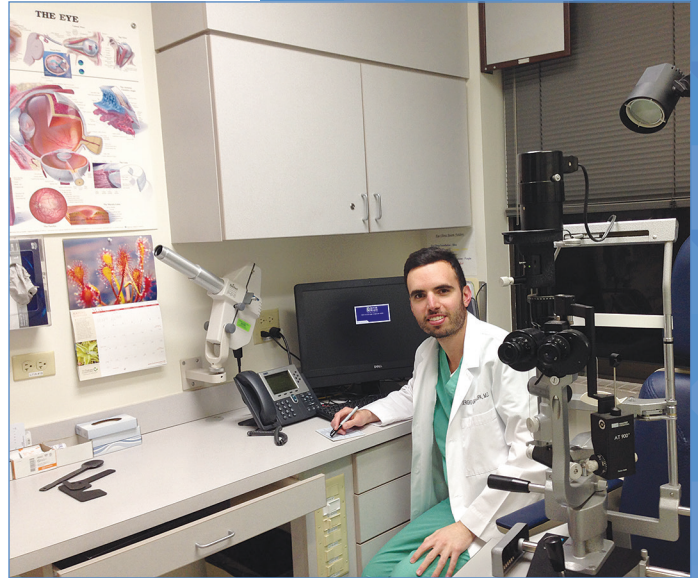
The two 2016 Gillingham Fellows are currently completing their training, both at Bascom Palmer Eye Institute in Miami, FL.

- **João Rafael de Oliveira Dias, MD** (from Brazil) - Training in Retina with Philip Rosenfeld, MD
- **Felipe A. Valenzuela, MD** (from Chile) - Training in Cornea with Victor L. Perez, MD

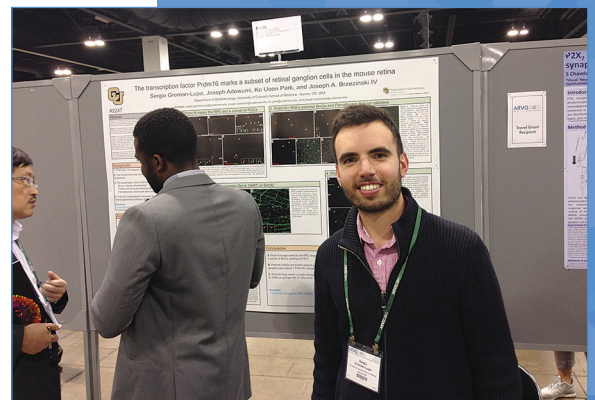
RRF has received the fellowship report from one of the 2015 Gillingham Fellows, **Sergio Groman Lupa, MD** (from Mexico). Dr. Groman trained in Retina at University of Colorado, Department of Ophthalmology, in Aurora, CO. The following is an excerpt from his report:

During my fellowship, I was involved in direct evaluation and management of patients with vitreoretinal diseases under the supervision of Dr. Hugo Quiroz-Mercado at Denver Health Medical Center, which was a very enriching experience. I was able to participate in retinal surgeries, assisting Dr. Quiroz and other Retina fellows, allowing me to learn different surgical techniques. I performed clinical research using widefield OCT and as a research coordinator for the Diabetic Retinopathy Clinical Research Network.

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*Dr. Sergio Groman Lupa
at the clinic*



*At the Association for
Research in Vision and
Ophthalmology (ARVO)
annual meeting. Pictured at
far left is Dr. Ching-Kang Chen,
RRF Research Chair at Baylor
College of Medicine*

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There were several academic activities that I attended at the Rocky Mountain Lions Eye Institute, including grand rounds, lectures for ophthalmology residents, retina journal clubs and retina surgery meetings. In the basic research lab, I participated in several projects under the excellent guidance of Jeffrey Olson, MD, Joseph Brzazinski, PhD, and Marc Petrash, PhD, that included basic science, retinal surgery lab and epidemiologic research. I learned different techniques and methods for research in ophthalmology.

During this time I also had the opportunity to meet and interact with brilliant people, all from whom I learned a lot: Naresh Mandava, MD, Scott Oliver, MD, Marc Mathias, MD, Frank Siringo, MD, OD, and Richard Hwant, MD, PhD.



At the Operating Room

This fellowship has been an extraordinary experience that will allow me to continue my academic endeavors and contribute to medicine and ophthalmology in Mexico.

The Gillingham Pan-American Fellowship program is one of two international fellowship programs that RRF supports. These fellowships make it possible for promising young ophthalmologists from developing countries to receive the finest subspecialty training for the benefit of those in their home countries.

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



Dr. Sergio Groman with Dr. Hugo Quiroz

ARVO Announces a New Optical Coherence Tomography Online Resource

The Association for Research in Vision and Ophthalmology (ARVO) is the largest eye and vision research organization in the world, with members from over 75 countries. Retina Research Foundation is proud to work in affiliation with ARVO to sponsor travel grants for young investigators to attend the annual meeting to present their papers and posters. This year these Retina Research Foundation / Joe M. and Eula C. Lawrence Travel Grants will make it possible for over twenty young scientists to attend the 2017 ARVO annual meeting this spring in Baltimore, MD.



ARVO has recently announced a new online resource for information about optical coherence tomography:

Sharing the sight-saving impact of OCT

Today, a little known but widely used technology is helping clinicians image the back of their patients' eyes to diagnose glaucoma, macular degeneration and diabetic retinopathy. Tomorrow, the same technology could contribute to diagnosing neurological diseases like Alzheimer's and Parkinson's. To highlight the value of this revolutionary clinical tool, the Association for Research in Vision and Ophthalmology (ARVO), has independently produced a public outreach campaign on optical coherence tomography (OCT).

The project's flagship product is a series of free-to-use, short videos on the discovery and adoption of OCT in the clinic over the past 25 years. The videos feature patients using OCT to improve their visual outcomes, clinicians describing how OCT makes their decision-making easier, and researchers pushing the technology to new frontiers. The videos are suitable for patient, public and policymaker education.

Other resources include an advocacy toolkit and a special issue on the latest OCT research in the journal *Investigative Ophthalmology and Visual Science (IOVS)*.

All OCT resources can be found at www.arvo.org/OCT. Organizations and individuals are welcome to use and share these free resources in their outreach and educational efforts. Mentions on social media should include #OCTimaging.

www.arvo.org/OCT



Early Detection of Precursor to Blindness



Dr. Royce Mohan

Researchers at the University of Connecticut (UConn) are developing a new tool to detect the early growth of abnormal blood vessels from the back of the eye into the retina. Led by Royce Mohan, PhD, associate professor of neuroscience at UConn Health, a team of researchers is developing a fluorescent small molecule imaging reagent to help identify preclinical stages of ocular fibrosis, a condition leading to age-related macular degeneration. This innovative reagent binds to specific intermediate filament proteins, which are biomarkers of wet AMD. The fluorescent property of the reagent makes detection easy, and identifies where these events are occurring in the retina.

The UConn scientists, including Paola Bargagna-Mohan, PhD, and Dennis Wright, PhD, believe this biomarker probe could have major treatment implications. “Current treatments stop the growth of the blood vessels only while they’re still growing, not after blood vessels become mature,” Dr. Mohan says. “If we had the diagnostic means to monitor the earliest stage of wet AMD leading to fibrosis, patients might benefit from therapies.”



Dr. Paola Bargagna-Mohan

In addition to enabling earlier intervention, a reliable method of early detection also would allow monitoring of the progress of that intervention and determine its effectiveness. “There are drugs that are effective in slowing the growth of the blood vessels in AMD,” says Dr. Mohan, “but many patients are diagnosed and identified as candidates for these drugs too late to make a difference.” Patients can develop resistance to the treatment, but in most cases, by the time that is realized, they are out of options to save their sight.

<http://today.uconn.edu>

“I believe in innovation and that the way you get innovation is you fund research and you learn the basic facts.”

Bill Gates
(co-founder of Microsoft, born 1955)

Meet the Board

Ron G. Girotto

RRF Board Service: 2016 to present

Education:

- B.S. B.A. Pittsburg State University (1964)
- M.S. Kansas University (1968)
- Southwestern Graduate School of Banking (1975)

Career:

- President and Chief Executive Officer – Houston Methodist Hospital
- EVP, Chief Operating Officer and Chief Financial Officer – Houston Methodist Hospital
- Administrator, Department of Otorhinolaryngology – Baylor College of Medicine
- VP, Secretary-Treasurer – First/Second Baldwin Bankshares, Inc.
- Manager, Financial Services, Southwest Division – Phillips Petroleum Company
- U.S. Army, Signal Corp

Memberships:

- Houston Petroleum Club
- Houston Club
- Houston City Club



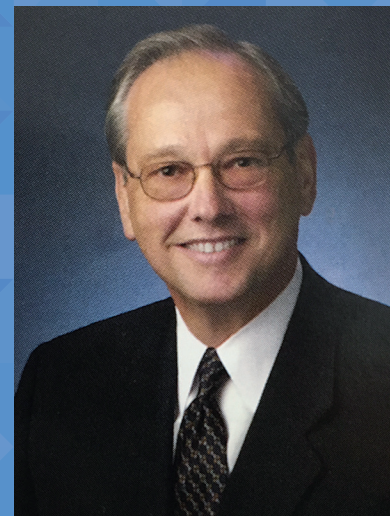
Chimayo, NM

Affiliations:

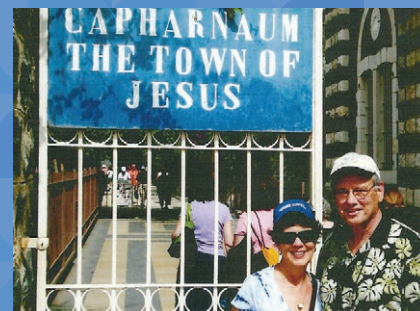
- Saint Vincent De Paul Catholic Church
- Equestrian Order of the Holy Sepulchre
- Faith in Practice
- Amazing Place
- Council of Overseers, Jesse H. Jones School of Management, Rice University

Personal:

- Married to Judith Menghini Girotto
- One daughter, Jennifer, and two sons, Jeffrey and Matthew, and nine grandchildren
- Jennifer graduated from Texas A&M, University of Houston and Houston Baptist University
- Jeffrey graduated from University of Texas and Rice University
- Matthew graduated from Texas A&M and Washington University



Ron G. Girotto



Trip to Holy Land



Faith in Practice Mission Trip

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Retina Research Foundation Is a Nonprofit Organization.

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HANDICAPPED

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Please indicate changes in boxes and make any corrections needed next to your name and address, then clip and return entire address label in an envelope.

- Change name or address as shown on address
- Remove name from mailing list.

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Pauline D. Bankston

Harlan Limmer

Ben and Dalyn Schriewer

Elizabeth Hail Smith

Avon Smith Duson

Mayde Butler

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Anthony Mierzwa

Rhett Butler
Charitable Foundation
Dr. Ben & Janet Orman

Loral Watson

Cherald E. Williams

Saunders Gregg

The Elkins Foundation

IN HONOR OF

Mary Farish Johnston

William S. and Lora Jean Kilroy Foundation

Ruth Kaznowski – *for a speedy recovery!*

Patricia Hetherington

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Call the office for more information: 713-797-1925



Additional memorials received will appear in the next issue.