



focus on patient care:

DMEI'S OPHTHALMOLOGISTS FIGHT CANCER TO  
*save vision and save lives*

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**inVIsion**

A PUBLICATION OF THE DEAN MCGEE EYE INSTITUTE

patient care  
education  
vision research  
leadership  
service

# DMEI clinical directory

## Oklahoma Health Center

DMEI Acers and Parke Pavilions ▪ 608 Stanton L. Young Blvd. ▪ Oklahoma City, OK 73104

### Comprehensive Ophthalmology/ Cataract Surgery

(405) 271-1090 ▪ (800) 787-9012

Cynthia A. Bradford, MD  
Brian K. Firestone, MD  
Layne E. Goetzinger, MD  
David W. Jackson, MD  
Deana S. Watts, MD

### Contact Lenses

(405) 271-6084 ▪ (800) 787-9012

Jamie N. Rodriguez, OD  
Contact Lens Specialist  
Keri J. West, FCLSA  
Contact Lens Specialist

### Cornea and External Disease

(405) 271-1095 ▪ (800) 787-9017

Alexander Davis, MD, PhD  
Garett S. Frank, MD  
Rhea L. Siatkowski, MD

### Glaucoma

(405) 271-1093 ▪ (800) 787-9015

Andrew K. Bailey, MD  
Mahmoud A. Khaimi, MD  
Steven R. Sarkisian, Jr., MD  
Gregory L. Skuta, MD

### LASIK Surgery

(405) 271-2500 ▪ (877) 406-4193

Alexander Davis, MD, PhD  
Garett S. Frank, MD  
David W. Jackson, MD  
(580) 250-5855  
Jean R. Hausheer, MD, FACS

### Low Vision Rehabilitation

(405) 271-1793 ▪ (800) 787-9012

Rebecca K. Morgan, MD

### Neuro-Ophthalmology

(405) 271-1091 ▪ (800) 787-9013

Bradley K. Farris, MD  
Anil D. Patel, MD  
(405) 271-1094 ▪ (800) 787-9016  
R. Michael Siatkowski, MD

### Ocular Oncology/Ophthalmic Pathology

(405) 271-1090 ▪ (800) 787-9012

Brian K. Firestone, MD

### Ocular Prosthetics

(405) 271-3391 ▪ (800) 787-9012

Nancy A. Lambert, BCO

### Ophthalmic Plastic & Reconstructive Surgery

(405) 271-1096 ▪ (800) 787-9018

Annie Moreau, MD, FACS

### Optical Services

(405) 271-6174 ▪ (800) 787-9012

### Optometry

(405) 271-1090 ▪ (800) 787-9012

Dana M. Garber, OD, FAAO  
Brandalyn D. Loyko, OD  
Jessica L. Lucas, OD, FAAO  
Jamie N. Rodriguez, OD

### Pediatric Ophthalmology/Strabismus

(405) 271-1094 ▪ (800) 787-9016

Janine E. Collinge, MD  
R. Michael Siatkowski, MD  
Tammy L. Yanovitch, MD, MHSc

### Retina/Vitreous

(405) 271-1092 ▪ (800) 787-9014

Reagan H. Bradford, Jr., MD  
Stephen R. Fransen, MD  
Ronald M. Kingsley, MD  
Robert E. Leonard II, MD  
Vinay A. Shah, MD

### Stephenson Laser Center

(405) 271-2500 ▪ (877) 406-4193

### Trauma/Emergency

(405) 271-6060 ▪ (800) 787-9012

### Uveitis

(405) 271-1090 ▪ (800) 787-9012

Sam S. Dahr, MD  
Alexander Davis, MD, PhD  
Garett S. Frank, MD

## McGee Eye Surgery Center (MESc)

Harold Hamm Diabetes Center ▪ 1000 N. Lincoln Blvd., Suite 150 ▪ Oklahoma City, OK 73104

(405) 271-3363 ▪ Medical Director: Robert J. Christensen, MD

## Dean McGee Eye Institute Satellite Locations

### EDMOND

1005 Medical Park Blvd., 73013

(405) 271-0913

### Comprehensive Ophthalmology/ Neuro-Ophthalmology

Anil D. Patel, MD

### Glaucoma/Comprehensive Ophthalmology/ Ophthalmic Surgery

Andrew K. Bailey, MD

### Optometry

Angela M. Plant, OD, FAAO

### Optical Services

(405) 271-0909

### NORTHWEST OKC

3500 N.W. 56th, #101, 73112

(405) 271-9500

### Comprehensive Ophthalmology/ Ophthalmic Surgery

Ralph B. Hester III, MD  
Brian K. Firestone, MD

### Optometry

Tasha J. Schellenberg, OD

### Optical Services

(405) 271-9506

### LAWTON

3201 W. Gore Blvd., #200, 73505

(580) 250-5855

### Comprehensive Ophthalmology/ Ophthalmic Surgery

Jean R. Hausheer, MD, FACS  
Ann A. Warn, MD, MBA

### Retina/Vitreous

Vinay A. Shah, MD

### Optical Services

(580) 585-5425

## Dean McGee Eye Institute

Home to the Department  
of Ophthalmology of the  
University of Oklahoma  
College of Medicine

*DMEI President and CEO*  
Edward L. Gaylord Professor and Chair  
Department of Ophthalmology  
University of Oklahoma  
Gregory L. Skuta, MD

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Administrator, Department of Ophthalmology  
Gary G. Geist, MAcc

*DMEI Vice President of Finance  
and Chief Financial Officer*  
Kimberly A. Howard

*DMEI Executive Director of Development*  
Jim Durbin

*Editor*  
Gregory L. Skuta, MD

*Senior Contributor*  
Melody A. Marcum, MHR

*Contributors*  
Jim Durbin  
Nicole M. Glenn  
Gregory L. Skuta, MD

*Feature Writer*  
April Wilkerson

*Design and Layout*  
Funnel Design Group

*Photography*  
The Borth Family  
Nicole M. Glenn  
Victor Harris, Versatile Photography  
April Wilkerson

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*For more information about this publication or to  
be placed on the mailing list, please contact:*

Development Office  
Dean McGee Eye Institute  
608 Stanton L. Young Blvd., Suite 346  
Oklahoma City, OK 73104  
(405) 271-7801

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SUMMER 2016

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# *Battling Blindness and Cancer*



*Gregory L. Skuta, MD*

**BLINDNESS AND CANCER ARE TWO CONDITIONS THAT CAN CREATE GREAT CONCERN FOR ANY OF US.** Cancers in and around the eye with the potential for blindness therefore can produce scenarios that require the attention of a highly skilled team.

Part of our strategic mission at the Dean McGee Eye Institute (DMEI) is to provide services that meet the needs of the people of Oklahoma and the surrounding region and that may not be readily available from other providers. In 2014, Dr. Brian Firestone joined the Dean McGee Eye Institute as an ocular oncologist with additional training in ophthalmic pathology and has been instrumental in helping expand our ocular oncology services. A native of Velma, Oklahoma, and an Academic All-State Scholar, Dr. Firestone earned his undergraduate degree from Oklahoma Baptist University and his medical degree from the University of Oklahoma before completing a residency in ophthalmology at the Scott and White Eye Institute in Temple, Texas.

Inspired to become an ocular oncologist, Dr. Firestone was accepted into the world's leading fellowship training program in ocular oncology at the Wills Eye Institute in Philadelphia. There he worked closely with Drs. Jerry and Carol Shields (a husband and wife team who serve as co-directors of the country's—and perhaps the world's—busiest ocular oncology service). Both Drs. Shields have delivered the prestigious Tullos O. Coston, MD Lectureship at DMEI with Dr. Carol Shields doing so on June 4, 2016.



As summarized in the feature story on pages 34-39, choroidal melanoma is the most common adult tumor of the eye itself. This is often treated with radioactive plaques, which are created by the radiation oncology service at the Stephenson Cancer Center. These patients are also typically under the care of a medical oncologist from the Stephenson Cancer Center. Since Dr. Firestone's arrival 2 ½ years ago, the number of plaques placed at the Oklahoma Health Center for choroidal melanoma has increased dramatically (i.e., more than three-fold from 2012 to 2015) and continues to rise.

As also emphasized in the feature story, Dr. Firestone is one of a number of DMEI ophthalmologists who provide care for patients with tumors in, on, and around the eye. This team approach to cancer-related services is critical to ensuring that all Oklahomans have access to the best available treatments for a variety of cancers. This team includes ophthalmic plastic and reconstructive surgeons (e.g., Dr. Annie Moreau) and ophthalmologists specializing in cornea and external disease (e.g., Drs. Alex Davis, Garrett Frank, and Rhea Siatkowski) and those with whom they and Dr. Firestone work.

The state of Oklahoma is very fortunate to have access to the resources of the Stephenson Cancer Center and everyone affiliated with it. The state also is blessed to have world-class

ophthalmologists committed to providing the latest techniques in the treatment of ocular and periocular tumors that can affect patients ranging in age from infancy to very late in life.

This edition of *InVision* also provides exciting information on new members of the faculty, outstanding public service initiatives created by a former DMEI cornea fellow, another major honor for our Director of Vision Research, vital contributions being made by our faculty on a number of fronts, and our incoming residents and fellows as we begin a new academic year.

Please take the time to explore every page of *InVision* and learn how the Dean McGee Eye Institute continues to impact the profession of ophthalmology, the fields of education and vision research, and, most importantly, the lives of our patients, including those with cancers affecting the eye.



Gregory L. Skuta, MD  
President and Chief Executive Officer  
Dean McGee Eye Institute  
Edward L. Gaylord Professor and Chair  
Department of Ophthalmology  
University of Oklahoma College of Medicine

**This team approach to cancer-related services is critical to ensuring that all Oklahomans have access to the best available treatments for a variety of cancers.**

# AMERICAN BOARD OF OPHTHALMOLOGY *Celebrates 100 Years*

## THE AMERICAN BOARD OF OPHTHALMOLOGY

(ABO) is celebrating its centennial anniversary in 2016 with a year of special activities and events.

Founded in 1916, the ABO was the nation's first medical specialty certifying board. Pioneers in the development of a system of physician self-regulation, ophthalmologists from around the country came together to develop consistent educational, training, and practice standards that could be measured through a competency-based assessment program. In the decades that followed, the ABO's success in improving the quality of patient care in ophthalmology inspired other medical specialties to develop similar boards and led to the creation of a national system of specialty boards, now known as the American Board of Medical Specialties (ABMS).

Current or past faculty members from the Dean McGee Eye Institute/University of Oklahoma (DMEI/OU) who have served as ABO Directors include Drs. C.P. "Pat" Wilkinson, Gregory L. Skuta, David W. Parke II and R. Michael Siatkowski. All four participated in the ABO's Centennial Symposium in San Francisco on March 12.



*Dr. Gregory L. Skuta speaks during a session on "The Evolution of the Written Examinations" as part of the American Board of Ophthalmology's Centennial Symposium in San Francisco on March 12.*

Current DMEI/OU faculty who have served as ABO Examiners, Item Writers, and/or in other ABO volunteer capacities during the past four years include Drs. Rebecca K. Morgan, Jean R. Hausheer, Reagan H. Bradford, Jr., Cynthia A. Bradford, Ralph B. Hester III, Robert E. Leonard II, Ann A. Warn, Anil D. Patel,



*R. Michael Siatkowski, MD (left) leads a panel discussion entitled “The Evolution of Maintenance of Certification,” which also included (left to right) Drs. Bradley R. Straatsma, C. Pat Wilkinson (a former member of the DMEI/OU faculty), Janet L. Davis, and Jane A. Bailey.*

Tammy L. Yanovitch, and Mahmoud A. Khaimi. Dr. Morgan has the special distinction of providing services as an Examiner for more than 15 ABO Oral Examinations.

In recognition of reaching this 100-year milestone and the ABO’s continued mission to improve the quality of patient care in ophthalmology, the ABO modified its logo for 2016, adding the tagline “Advancing Excellence in Eye Care—100 Years of Public Service.” ■



AMERICAN BOARD  
OF OPHTHALMOLOGY

— 100 years of public service —

Advancing Excellence in Eye Care

## JACQUELINE JEAN ACERS: JUNE 23, 1930–MARCH 3, 2016

# Remembering DMEI's First Lady, Jackie Acers, with Love and Gratitude

**JACQUELINE "JACKIE" ACERS, BELOVED WIFE OF** the Dean McGee Eye Institute's (DMEI's) founding President Dr. Thomas E. Acers, passed away on March 3. She was 85.

Jackie Acers' affection for and personal interest in everyone at the Eye Institute, and the residents, fellows, and their families in particular, were truly legendary. As has been shared at numerous gatherings of the Acers Society and the DMEI 40th Anniversary Celebration last November, Jackie has been and always will be regarded as the First Lady of the Dean McGee Eye Institute. Dr. Ann Acers Warn, who regarded Jackie as her loving "bonus mom," said that Jackie described the 40th Anniversary event as "...the best night she had had in years." Jackie was also present for the naming of the Thomas E. Acers, MD Pavilion on May 31, 2014 and was able to enjoy the commemorative biographical plaque honoring Dr. Acers, whom she married in 1978, inside the entrance of the Acers Pavilion. Their marriage brought together seven children.

Jackie was fondly remembered at the most recent Acers Society Reception on June 4, where the DMEI Family again celebrated her infinite kindness, radiant smile, enormous contributions to the Dean McGee Eye Institute, and her love for and positive influence on all of us. ■



*Dr. Thomas and Jackie Acers shown at the DMEI 25th Anniversary Dinner on December 7, 2000.*

**MEMBERSHIP IN THE ACERS SOCIETY** is open to Graduates of the Ophthalmology Program at the University of Oklahoma as well as interested supporters of the Program. To learn more about the Society or make a contribution in Jackie Acers' memory, please contact the Development Office at [DMEI-Development@dmei.org](mailto:DMEI-Development@dmei.org) or 405.271.7801.



# DANIEL J.J. CARR, PhD NAMED GEORGE LYNN CROSS RESEARCH PROFESSOR

## AT THE UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER (OUHSC) SPRING FACULTY AWARDS CEREMONY

on Monday, April 25, Provost Jason R. Sanders announced that Daniel J.J. Carr, PhD, Stanton L. Young Professor of Ophthalmology and Professor of Microbiology and Immunology, has been named a George Lynn Cross Research Professor. To qualify for this highly prestigious professorship, a faculty member “must have demonstrated outstanding leadership over a period of years in his or her field of learning or creative activity and have been recognized by peers for distinguished contributions to knowledge or distinguished creative work.”

“We are extremely proud of Dr. Carr and his extraordinary scientific achievements and are honored to count Dan as a DMEI/OU colleague and friend who has selflessly contributed to the success of the Institute and Department,” stated Dr. Gregory L. Skuta, President and CEO of the Dean McGee Eye Institute and Edward L. Gaylord Professor and Chair of the OU Department of Ophthalmology.

Dr. Carr, who previously held a Presbyterian Health Foundation Presidential Professorship and served as Assistant Dean of Postdoctoral Affairs, joined the faculty at OU in 1999 and rose to the rank of Professor in 2008. One of the world’s leading authorities on herpes simplex virus type 1 (HSV-1) and the eye, Dr. Carr holds two R01 grants from the National Institutes of Health (NIH) and serves as the principal investigator for a prestigious



*Jason R. Sanders, MD, MBA (left), Provost of the OU Health Sciences Center (OUHSC), recognizes Dr. Daniel J.J. Carr (right) with a George Lynn Cross Research Professorship. Named for OU’s longest-serving President, this professorship is one of the highest honors that can be bestowed on OUHSC research faculty.*

T32 training grant from the National Eye Institute. He also has been awarded a Jules and Doris Stein Professorship and Senior Investigator Award from Research to Prevent Blindness. Dr. Carr has authored or co-authored more than 125 peer-reviewed scientific publications and more than 50 book chapters and reviews, has served on several editorial boards and NIH study sections, and has chaired the Immunology/Microbiology Program Committee for the Association for Research in Vision and Ophthalmology. Also a devoted mentor, Dr. Carr has served or currently serves on 29 graduate student PhD committees and has served as an outside mentor for two Australian graduate student PhD committees. ■

# Robert E. Anderson, MD, PhD, Honored at ARVO Foundation and Dowling Society Gala Awards Ceremony and Dinner

**ROBERT EUGENE "GENE" ANDERSON, MD, PHD, WAS HONORED** at the Association for Research in Vision and Ophthalmology (ARVO) Foundation and Dowling Society Gala Awards Ceremony and Dinner on Saturday, April 30, 2016, at the Grand Hyatt Seattle in Seattle, Washington. The ARVO Foundation hosts the dinner to honor members who have made significant contributions to vision research and to recognize donors who show dedication to, and support for, the ARVO mission.



Dr. Anderson, who received an enthusiastic standing ovation at the event, holds faculty appointments in the Departments of Ophthalmology, Cell Biology, and Geriatrics at the University of Oklahoma Health Sciences Center (OUHSC). He is the Dean McGee Professor of Ophthalmology, George Lynn Cross Research Professor, and Director of Research for the Department of Ophthalmology and the Dean McGee Eye Institute.

*Nicolas G. Bazan, MD, PhD (left) and Cheryl M. Craft, PhD (right) paid tribute to Robert E. "Gene" Anderson MD, PhD (center) at the ARVO Foundation and Dowling Society Gala on April 30 in Seattle, Washington.*

Dr. Anderson received his PhD in Biochemistry (1968) from Texas A&M University and his MD from Baylor College of Medicine (1975). In 1968, he was a postdoctoral fellow at Oak Ridge Associated Universities. At Baylor, he was appointed Assistant Professor in 1969, Associate Professor in 1976, and Professor in 1981. He joined the faculty at OUHSC in January 1995 and served as Director of the Oklahoma Center for Neuroscience from 1995 to 1999 and as Chair of the Department of Cell Biology from 1998 to 2007.

Dr. Anderson has authored or co-authored approximately 300 publications and has edited 17 books, 16 on retinal degenerations and one on the biochemistry of the eye. He has received numerous awards, including the Dolly Green Award (1982) and two Senior Scientific Investigator Awards (1990 and 1997) from Research to Prevent Blindness. He was a member of the inaugural class of ARVO Gold Fellows in 2009. He also has received the Llura

Liggett Gund Lifetime Achievement Award from the Foundation Fighting Blindness (2011), the 2011 Proctor Medal from ARVO, and the Paul A. Kayser International Award from the Retina Research Foundation (2012).

In addition to Dr. Anderson's extraordinary contributions in the field of vision research, he also established the Elizabeth Anderson Travel Grant in memory of his late wife, Elizabeth Anderson. Mrs. Anderson was always passionate about helping young researchers meet their role models, and grants from this fund allow this work to continue. A recipient must have an abstract reviewed and accepted for presentation by the Biochemistry/Molecular Biology or Retinal Cell Biology Section of ARVO in the areas of inherited retinal degeneration and macular degeneration. Grant funds are used to provide partial support for travel expenses to the ARVO Annual Meeting for young investigators to present their work. ■



**ON APRIL 29 AT THE OU COLLEGE OF MEDICINE ALUMNI DAY, M. BRUCE SHIELDS, MD**, an OU College of Medicine alumnus (class of 1966) and internationally prominent ophthalmologist, received the Physician of the Year-Academic Medicine Award. Dr. Shields, who grew up in Enid, Oklahoma, served for many years on the faculty at Duke University and then as Chair of the Department of Ophthalmology at Yale University from 1996 to 2006. Dr. Shields has delivered both the Walter J. Stark Lecture (1998) and the Tullos O. Coston Lecture (2003) at the Dean McGee Eye Institute. ■

*Dr. Shields (left) is pictured with Sherri Baker, MD (right), Associate Professor in the Department of Pediatrics at OU and President of the OU College of Medicine Alumni Association.*

# Bradley K. Farris, MD Awarded OU Presidential Professorship



Bradley K. Farris, MD (left) is awarded a Presbyterian Health Foundation Presidential Professorship by Jason R. Sanders, MD, MBA (right), Provost of the OU Health Sciences Center.

**ON APRIL 25, PROVOST JASON R. SANDERS ANNOUNCED THAT BRADLEY K. FARRIS, MD,** Professor of Ophthalmology, has been awarded a University of Oklahoma (OU) Presbyterian Health Foundation Presidential Professorship. The announcement was made during the OU Health Sciences Center Spring Faculty Awards Ceremony.

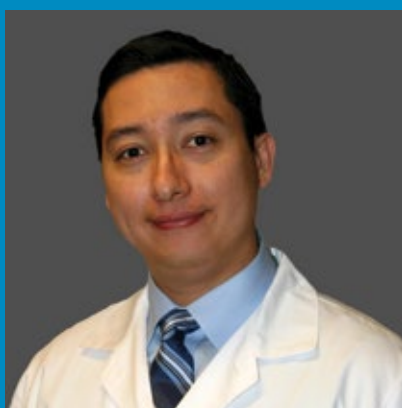
Dr. Farris joined the faculty at OU in 1986 after residency training in neurology

and ophthalmology at OU and his neuro-ophthalmology fellowship at the Bascom Palmer Eye Institute/University of Miami. A respected scholar, highly gifted educator, and deeply compassionate physician, Dr. Farris received the Gaylord Faculty Teaching Award in 1988 and 2009, the Leonard Tow Humanism in Medicine Award in 2007, the OU Regents' Award for Superior Teaching in 2011, and the Christian Ophthalmology Society's (COS) J. Lawton Smith Award in 2013. (He served as President of COS from 1990 to 2000.) In 2014, Dr. Farris received the TianFu Friendship Award from the Sichuan Province of China for his international humanitarian and educational efforts and leadership. Over the past 30 years, he has served the Institute and Department in outstanding fashion in numerous capacities.

Presidential Professors are “those faculty members who excel in all of their professional activities and who relate those activities to the students they teach and mentor.” Gregory L. Skuta, MD, DMEI President and CEO and Edward L. Gaylord Professor and Chair of the OU Department of Ophthalmology, said, “Dr. Farris fulfills these criteria perfectly and makes us very proud to count him as a DMEI/OU friend and colleague. We are extremely grateful for Brad’s extensive contributions to the success of the Dean McGee Eye Institute/OU Department of Ophthalmology.” ■



# DMEI WELCOMES New Cornea Faculty Members



**ALEXANDER "ALEX" DAVIS, MD, PhD** will join the Dean McGee Eye Institute/OU Department of Ophthalmology's Cornea and External Disease Service on July 25. Dr. Davis earned his undergraduate degree from the University of Hawaii at Manoa in Honolulu and his PhD and MD from the University of New Mexico in Albuquerque. He completed his residency in ophthalmology at the University of Texas Medical Branch – Galveston, where he received the Thayer Award for Resident Teaching and the Resident Scholarship Award in 2014. He completed a cornea fellowship at the University of Minnesota in Minneapolis.



**GARETT S. FRANK, MD**, will join the Dean McGee Eye Institute/OU Department of Ophthalmology's Cornea and External Disease Service on August 15. A native of Kansas, Dr. Frank earned his undergraduate degree from Emporia State University (magna cum laude) and medical degree from the University of Kansas (Alpha Omega Alpha Honor Medical Society). He completed his residency in ophthalmology at the University of Colorado-Denver and his cornea fellowship at Duke University, in Durham, North Carolina.

*We welcome Drs. Davis and Frank to the faculty at the Dean McGee Eye Institute!*

**ANN ACERS WARN, MD, MBA**, has been elected President of the Oklahoma Board of Medical Licensure and Supervision. She succeeds Dr. Lee Schoeffler, a Tulsa ophthalmologist and medical school and resident alumnus of the University of Oklahoma.

# FACULTY & STAFF AWARDS AND ACTIVITIES



**XUE CAI, PhD**, recently published Cai X., McGinnis J.F. “Diabetic Retinopathy: Animal Models, Therapies, and Perspectives,” *Journal of Diabetes Research*, Jan. 2016. She presented Cai X., Seal S., McGinnis J.F. “Nanoceria Protect the Function of the RPE and the BRB in vldlr-/- Mice,” Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting, Seattle, WA, May 2016.



**MICHELLE C. CALLEGAN, PhD**, recently published Coburn P.C., Wiskur B.J., Callegan M.C. “Blood-Retinal Barrier Compromise and Endogenous Staphylococcus Aureus Endophthalmitis,” *Investigative Ophthalmology and Visual Science*, Nov. 2015; Venincasa V., Callegan M.C., Astley R.A., Siatkowski R.M. “Contact Lens-Related Polymicrobial Keratitis from Pantoea Agglomerans and Escherichia Vulneris,” *American Journal of Ophthalmology Case Reports*, Feb. 2016; and Parkunan M., Callegan M.C. “The Pathogenesis of Bacterial Endophthalmitis,” In: *Endophthalmitis*. Miller J., Young L., Durand M., eds., Springer, April 2016. She recently presented Callegan M.C., Zhou H., Rybenkov V.V. “Role of Pseudomonas Aeruginosa Condensins in Corneal Infection,” Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting, Seattle, WA, May 2016; and Callegan M.C. “Mentorship and Sponsorship,” ARVO Leadership Development for Women Program, Seattle, WA, April 2016.



**BRADLEY K. FARRIS, MD**, was awarded a Presbyterian Health Foundation Presidential Professorship, April 2016 (see page 10). He recently published Spiegel J.A., Sokol J.A., Whittaker T.J., Bernard B., Farris B.K. “Farris-Tang Retractor in Optic Nerve Sheath Decompression Surgery,” *Orbit*, Feb. 2016; and Robinson M.E., Moreau A., O’Meilia R., Pageilan J., Ding K., Siatkowski R.M., Farris B.K. “The Relationship Between Optic Nerve Sheath Decompression Failure and Intracranial Pressure in Idiopathic Intracranial Hypertension,” *Journal of Neuro-Ophthalmology*, March 2016. He presented “DMEI Global Eye Project Update,” North American Neuro-Ophthalmological Society, Tucson, AZ, Feb. 2016; “Multiple Sclerosis and the Eye,” MS: The Science and Art of Managing a Complex Disorder, Integris Cancer Institute, March 2016; “Headache,” Dong Eye Institute, Minyang City, China, April 2016; and “Idiopathic Intracranial Hypertension” and “Multiple Sclerosis and the Eye,” Annual International Sichuan Chinese-American Ophthalmology Symposium, Chengdu, China, April 2016.



**JEAN R. HAUSHEER, MD, FACS**, was recently elected by the Oklahoma State Medical Association (OSMA) House of Delegates to serve as Vice President of OSMA.



**DIMITRIOS KARAMICHOS, PhD**, was elected as Chair of the Cornea Section’s Program Committee for the Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting, 2016–2017; Course Director: Cellular and Molecular Aspects of Vision, OU Health Sciences Center, 2016; and OU Faculty Senate – Alternate, 2016. He recently published Vieira-Potter V.J., Karamichos D., Lee D.J. “Ocular Complications of Diabetes and Therapeutic Approaches,” *BioMed Research International*, March 2016; Drevets P., Chucair-Elliott A., Shrestha P., Jinkins J., Karamichos D., Carr D.J.J. “The Use of Human Cornea Organotypic Cultures to Study Herpes Simplex Virus Type 1 (HSV-1)-Induced Inflammation,” *Graefes’ Archive for Clinical*

and *Experimental Ophthalmology*, Oct. 2015/Epub June 2015; Iwayama T., Steele C., Yao L., Dozmorov M.G., Karamichos D., Wren J.D., Olson L.E. "PDGFR $\alpha$  Signaling Drives Adipose Tissue Fibrosis by Targeting Progenitor Cell Plasticity," *Genes & Development*, June 2015/Epub May 2015; Sarker-Nag A., Hutcheon A.E., Karamichos D. "Mitochondrial Profile and Responses to TGF- $\beta$  Ligands in Keratoconus," *Current Eye Research*, Oct. 2015; McKay T.B., Sarker-Nag A., Lyon D., Asara J.M., Karamichos D. "Quercetin Modulates Keratoconus Metabolism In Vitro," *Cell Biochemistry and Function*, July 2015/Epub July 2015; Lyon D., McKay T.B., Sarker-Nag A., Priyadarsini S., Karamichos D. "Human Keratoconus Cell Contractility is Mediated by Transforming Growth Factor-Beta Isoforms," *Journal of Functional Biomaterials*, June 2015; and Karamichos D. "Corneal Diabetes: Where to Next?," *Journal of Clinical Research and Ophthalmology*, Dec. 2015.



**MAHMOUD A. KHAIMI, MD**, recently performed live ab interno canaloplasty (ABIC) surgery in Amman, Jordan, and was invited by the Jordanian Ophthalmology and Glaucoma Society to lecture on canaloplasty and ABIC as part of the Canaloplasty and ABIC Symposium. He spoke at several other national and international meetings and also participated in related "Meet the Expert" sessions: American Academy of Ophthalmology (AAO) Annual Meeting, Nov. 2015, Las Vegas, NV; American Society of Cataract and Refractive Surgery (ASCRS) Annual Meeting, May 2016, New Orleans, LA; American Glaucoma Society (AGS) Annual Meeting, March 2016, Fort Lauderdale, FL; and the 8th Annual International Congress on Glaucoma Surgery (ICGS) Annual Meeting, Feb. 2016, Muscat, Oman. He published Sluch I.M., Khaimi M.A., Ding K., Sarkisian S.R. "Efficacy of SLT After Canaloplasty," *Clinical & Experimental Ophthalmology*, Dec. 2015. His recent poster presentations include: "Ab Interno Canaloplasty – A Minimally Invasive and Maximally Effective Glaucoma Surgery with 6 Month Data Review," AGS Annual Meeting, March 2016, Fort Lauderdale, FL; "Ab Interno Canaloplasty for Open Angle Glaucoma" and "Safety and Efficacy of Ab Externo Canaloplasty to Treat Open-Angle Glaucoma: 3-Year Results of a Large Patient Cohort Study," ASCRS Annual Meeting, May 2016, New Orleans, LA; and "Safety and Efficacy of Ab Externo Canaloplasty to Treat Open-Angle Glaucoma: 3-Year Results of a Large Patient Cohort Study," 8th International Congress on Glaucoma Surgery (ICGS) Annual Meeting, Feb. 2016, Muscat, Oman. He also served as a "Canaloplasty Symposium" moderator and speaker and served as an in-booth speaker/presenter at the AAO Annual Meeting, Nov. 2015, Las Vegas, NV.



**DARREN J. LEE, PhD**, recently published Vieira-Potter V.J., Karamichos D., Lee D.J. "Ocular Complications of Diabetes and Therapeutic Approaches," *BioMed Research International*, March 2016.



**ANNIE MOREAU, MD, FACS**, recently traveled to Haiti on a mission trip to provide primary eye care, April 2016; and was a program participant at the American Academy of Ophthalmology Annual Meeting, where she gave a presentation on "Struggling Resident Surgeons: Strategies for Success," Las Vegas, NV, Nov. 2015.

# FACULTY & STAFF AWARDS AND ACTIVITIES



**ANIL D. PATEL, MD**, recently published ten Hove M.W., Friedman D.I., Patel A.D., Irrcher I., Wall M., McDermott M.P., for the NORDIC Idiopathic Intracranial Hypertension Study Group. "Safety and Tolerability of Acetazolamide in the Idiopathic Intracranial Hypertension Treatment Trial," *Journal of Neuro-Ophthalmology*, March 2016; and Wall M., Falardeau J., Fletcher W.A., Granadier R.J., Lam B.L., Longmuir R.A., Patel A.D., Bruce B.B., He H., McDermott M.P., for the NORDIC Idiopathic Intracranial Hypertension Study Group. "Risk Factors for Poor Visual Outcome in Patients with Idiopathic Intracranial Hypertension," *Neurology*, Sept. 2015.



**RAJU V.S. RAJALA, PhD**, recently published Rajala R.V.S., Gardner T.W. "Burning Fat Fuels Photoreceptors," *Nature Medicine*, April 2016; and Rao K.N., Li L., Zhang W., Brush R.S., Rajala R.V.S., Khanna H. "Loss of Human Disease Protein Retinitis Pigmentosa GTPase Regulator (RPGR) Differentially Affects Rod or Cone-Enriched Retina," *Human Molecular Genetics*, April 2016. He was awarded an R01 grant from the National Institutes of Health/National Eye Institute (NIH/NEI), "Second Messengers in the Retina," PI: Raju V.S. Rajala, funding period: 04/01/2016 – 06/30/2021; and an R01 grant from the NIH/National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), "Mechanistic Studies on Obesity–Deteriorated Glucose and Lipid Metabolism," PI: Raju V.S. Rajala, funding period: 04/01/2016 – 06/30/2016. His recent presentations include: Rajala R.V.S., Wang Y., Ranjo-Bishop M., Rajala A. "Characterization of Src-homology Phosphotyrosyl Phosphatase 2 in the Retina," Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting, Seattle, WA, May 2016.; Takahashi Y., Chen Q., Qiu F., Moran E., Matlock G.H., Zhou K., Rajala R.V.S., Ma J.X. "MicroRNA-21 Implicated in Down-Regulation of PPAR- in Diabetic Retinopathy," ARVO Annual Meeting, Seattle, WA, May 2016.



**STEVEN R. SARKISIAN, JR., MD**, has accepted an invitation to serve on the editorial board of the *Journal of Cataract & Refractive Surgery (JCRS)*.




**VINAY A. SHAH, MD**, received the Secretariat Award from the American Academy of Ophthalmology (AAO) for his commitment to leading EyeWiki's largest section, the Retina/Vitreous category, from 2010 to 2015 and dedicating extensive time and effort in building the section. He recently co-authored Sluch I.M., Shah V.A., Siatkowski R.L. "Mycobacterium Chelonae Scleral Abscess After Intravitreal Ranibizumab Injection," *Cornea*, in press.

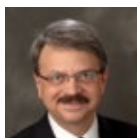


**R. MICHAEL SIATKOWSKI, MD**, was elected to the Presidential track for the American Association for Pediatric Ophthalmology and Strabismus (AAPOS), and will serve as Vice-President Elect from July 1, 2016 - June 30, 2017. He recently published Venincasa V.D., Callegan M., Astley R.A., Siatkowski R.M. "Contact Lens-related Polymicrobial Keratitis from *Pantoea Agglomerans* and *Escherichia Vulneris*," *American Journal of Ophthalmology Case Reports*, April 2016; Sussenbach E., Siatkowski R.M., Ding K., Yanovitch T.L. "Pediatric Ophthalmologists' Experiences with Abusive Head Trauma," *Journal of Pediatric Ophthalmology and Strabismus*, Jan. 2016; Siatkowski R.M. "Myopia Prevention: Newton is Still Right," *Journal of American Association for Pediatric Ophthalmology and Strabismus*, Dec. 2015; Groves N., Siatkowski R.M. "Functional Vision Loss in Children: What to Say to Parents, the Patient," *Ophthalmology Times*, Oct. 2015; and O'Brien J., Siatkowski R.M. "Opsoclonus-myooclonus Syndrome," *Pediatric*





*Ophthalmology Education Center*, [www.aao.org/pediatric-center](http://www.aao.org/pediatric-center), Feb. 2016. He recently presented: Siatkowski R.M., Ying G., Daniel E., Quinn G.E. "Intraocular Hemorrhage as a Risk Factor for ROP," platform presentation, Association for Research in Vision and Ophthalmology (ARVO), Seattle, WA, May 2016; Siatkowski R.M. "Developing Effective Resident-led QI Projects," Association of University Professors of Ophthalmology, Fort Lauderdale, FL, Jan. 2016; Siatkowski R.M., Yanovitch T.L., Collinge J.E., Motley W.W., Quinn G.E. "Struggling Resident Surgeons: Educational Strategies for Success," Workshop, AAPOS Annual Meeting, Vancouver, BC, April 2016; Siatkowski R.M., Cohen A.W., Moreau A., Sussenbach, E.C., Yanovitch T.L. "Struggling Resident Surgeons: Educational Strategies for Success," Instructional Course, American Academy of Ophthalmology (AAO), Las Vegas, NV, Nov. 2015. His recent invited talks include "The Evolution of Maintenance of Certification," panel moderator, American Board of Ophthalmology Centennial Symposium, San Francisco, CA, March 2016; and "Maintenance of Certification," AAO Learning Lounge, Las Vegas, NV, Nov. 2015.



**GREGORY L. SKUTA, MD**, recently made the following oral presentations: "Branding in Eye Care," President's Symposium, Association of University Professors of Ophthalmology, Fort Lauderdale, FL, Jan. 2016; "History of the Written Examinations: Present," American Board of Ophthalmology Centennial Symposium, San Francisco, CA, March 2016; "Lessons Learned from Recently Closed OMIC Claims," Pittsburgh Ophthalmology Society, March 2016; and "Current Perspectives on Normal-Tension Glaucoma" and "Neovascular Glaucoma: Continuing Challenges and New Options," University of North Carolina Eye Symposium, Chapel Hill, NC, April 2016. He now serves as the American Academy of Ophthalmology's representative to the National Alliance for Eye and Vision Research (NAEVR) and the Alliance for Eye and Vision Research (AEVR). He also has been appointed to serve on the Board of Directors of the Ophthalmic Mutual Insurance Company (OMIC) beginning in 2017. Recent publications include Stein J.D., Zhao P.Y., Andrews C., Skuta G.L. "Comparison of Outcomes of Laser Trabeculoplasty Surgery Performed by Optometrists Versus Ophthalmologist in the State of Oklahoma," *JAMA Ophthalmology*, in press.



**LILY L. WONG, PhD**, recently contributed a chapter in a book on the current status of rare earth elements in human and environmental health: Wong, L.L. "Cerium Oxide Nanoparticles-Associated Oxidant and Antioxidant Effects and Mechanism," in press. This is an international collaborative effort with authors from the USA, Italy, South Korea, and the Czech Republic.



**TAMMY L. YANOVITCH, MD, MHSc**, recently published Sussenbach E.C., Siatkowski R.M., Ding K., Yanovitch T.L. "Pediatric Ophthalmologists' Experiences With Abusive Head Trauma," *Journal of Pediatric Ophthalmology and Strabismus*, Jan. 2016. She also presented Siatkowski R.M., Yanovitch T.L., Collinge J.E., Motley W.W., Quinn G.E. "Struggling Resident Surgeons: Educational Strategies for Success," a workshop at the American Association of Pediatric Ophthalmology and Strabismus Annual Meeting, Vancouver, BC, April 2016.

# PHILANTHROPY UPDATE

## DMEI'S EMERGENCY RESPONSE SAVES PATIENT'S EYESIGHT

**WHEN SHE WOKE UP IN THE MIDDLE OF THE NIGHT WITH SEVERE PAIN** in her left eye, Sharon Wilson was frightened and couldn't imagine what was causing one eye to hurt so badly.

But she did know the next step she needed to take: to call her doctor at the Dean McGee Eye Institute (DMEI). DMEI prides itself on having quality eye care providers who connect with their patients, as well as a robust set of services that can treat any eye condition imaginable. Dean McGee commonly handles emergency conditions of all types, and any patient has the ability to call after hours in the case of an emergency. As it turns out, that combination saved Wilson's vision.

When Wilson called DMEI that night, the doctor on call advised her to flush her eye with artificial tears, then to come in in the morning. Wilson was soon in the office of her longtime primary eye care doctor, Dana Garber, OD. After Dr. Garber examined Wilson, she arrived at a significant diagnosis—angle-closure glaucoma—which, if not treated, can lead to blindness.

"I am so thankful," Wilson said. "Dr. Garber is a wonderful doctor, and she was able to send me to another doctor down the hall who performed the procedure that relieved the pressure on my eye."

Angle-closure glaucoma can be devastating because of the speed with which it progresses. In a normally functioning eye, fluid continually drains out of the eye through a structure known as the trabecular meshwork. People with angle-closure glaucoma experience a buildup of pressure inside the eye because the trabecular meshwork in the angle of the eye is blocked by the iris, and the fluid can't drain properly.

"It's a very acute matter," Dr. Garber said. "Everything has to fall into place for the patient to be cared for promptly and to be sure they don't lose their vision."

Wilson's condition was actually a bit tricky to diagnose. Patients with angle-closure glaucoma can have very extremely high eye pressures into the 40s (or higher), which is often more than double the normal amount. When Wilson arrived Monday morning, her eye pressure had decreased somewhat. But Dr. Garber was able to arrive at the correct diagnosis through the use of a procedure called gonioscopy to confirm the lack of angle structures, as well as by identifying Wilson's corneal swelling and knowing she had been in severe pain.

Garber said she sees angle-closure glaucoma in patients only a handful of times each year. But the staff knows that such patients must be cared for immediately. In Wilson's case, she was sent directly from Dr. Garber's office down the hall



*Jim Durbin  
Executive Director of Development*

to Mahmoud Khaimi, MD, who specializes in glaucoma surgery. The treatment for angle-closure glaucoma involves a laser to create a small hole in the iris of the eye, allowing the fluid to drain and the pressure to decrease. In a few short hours, Wilson had moved from a vision-threatening condition to experiencing a successful treatment.

“The laser is the definitive treatment for this condition, and that’s the beauty of being at Dean McGee – we can take care of the patient right then,” Dr. Garber said.

Her recovery after the successful treatment of angle-closure glaucoma was rapid, and Wilson’s prognosis is good. She is grateful for the DMEI doctors and surgeons, especially that her rapport with Dr. Garber meant she felt comfortable calling in the middle of the night.

“Wilson’s diagnosis and treatment was a textbook example of everything happening correctly,” Dr. Garber said. As an optometrist and a primary care eye doctor, her job is to know her patients well, make correct diagnoses and refer to her surgical colleagues when necessary. But the patient-doctor bond is the foundation for everything else.

“The relationships I’ve built with my patients are what make my job special—they’re what sustain me and allow me to love my job each day,” Dr. Garber said. “But those relationships are also important because they mean that patients feel comfortable calling when they have a problem, and they know they’ll be taken care of in a timely manner.” ■

**DR. JAMES L. “JIM” DUNAGIN, JR. AND EMILY BURCH** (now Emily Dunagin) had their first date at the 1975 Dean McGee Eye Institute (DMEI) Opening Celebration during Dr. Dunagin’s ophthalmology residency. Dr. Dunagin recently retired from private practice in McAlester, Oklahoma, where his office was adorned with art. The Dunagins have been art collectors for most of their lives and also have an artistic family legacy. Jim’s step-father W. Karl Steele, his mother Katherine Dunagin Steele, and his wife Emily all have pieces on display at DMEI. The Eye Institute is very appreciative of their involvement with and support of DMEI and is honored to showcase 54 art pieces loaned from their personal collection. Jim and Emily are shown with one of the Karl Steele paintings, entitled “Wisteria,” which is on display on the third floor of DMEI’s David W. Parke II, MD Pavilion.



*Dr. James L. Dunagin, Jr. and his wife Emily are shown with:  
Title: Wisteria  
Artist: W. Karl Steele  
Medium: Oil  
Date: Before 1982  
Dimensions: 18" x 24"*

# How a Traumatic Eye Accident Led to *Helping Other Families*

**AFTER YOUNG LYDIA MASON BORTH FELL** into the sharp corner of a coffee table, directly hitting her left eye, it seemed certain that she would lose her vision in that eye.

Her eyeball was lacerated and open, and the retina and lens were badly damaged; every risk factor pointed toward a poor outcome. But through a combination of excellent medical treatment at the Dean McGee Eye Institute (DMEI), a family's dedication to rehabilitation, and the determination of a resilient young child, her story has a happy ending.

The Borth family's journey with traumatic eye injury began nearly nine years ago, when Mason (who goes by her middle name) was 3 years old. Mason and her father, Andy Borth, had traveled to Iowa for a funeral. Afterward, Mason was doing what toddlers naturally do – she was dancing around the living room of a family member's home. She lost her balance and fell into the coffee table.

"It was a one-in-a-million shot right into her eye," Andy Borth said.

Andy took his daughter to a nearby emergency room in Iowa, where doctors told him he should take her to an eye specialist when he returned to Oklahoma. When they got home, they went to an urgent care facility, which quickly referred



*R. Michael Siatkowski, MD and Mason Borth at age 5.*

them to the Dean McGee Eye Institute.

After a thorough examination of Mason's eye while she was under general anesthesia, DMEI ophthalmologists came away with bad news for the Borths. Because of a laceration in the sclera, the white part of the eye, Mason's globe was ruptured and leaking eye fluid. In addition, the retina was in danger of detaching, a cataract was forming, and scar tissue was building up inside the eye.

Mason's mother, Summer Borth, said, "It was a painful experience and a horrific time for our family."

Mason ultimately had four surgeries, two performed by R. Michael Siatkowski, MD, and two by Reagan H. Bradford Jr., MD. Mason's scleral laceration was sutured and the eyeball was reformed. Her lens was removed, along with some of the vitreous humor, and a scleral buckle was inserted to reattach the damaged retina and prevent a large retinal detachment. Later, she had surgeries to correct a lazy eye that developed as well.

After the surgeries and the period of acute postoperative care were behind them, the process of rehabilitating the eye began. Dr. Siatkowski has seen Mason and her parents frequently over the past nine years, guiding them through the process of placing a patch over her good eye, which forces the injured eye to work and become stronger.



The patching process, which is often difficult for young children to endure, lasted from the time of the injury, when Mason was 3, until last year, when she turned 11 years old. Each week, she would increase the amount of time she wore the patch, starting at 30 minutes a day and growing to six hours a day at the end.

“When the injury first happened, Mason became more timid around people,” Summer said. “But we refused to treat her any differently, and she came out of that rather quickly and the patch became just another part of her body. She didn’t let that affect how she acted around people. People would ask her about her patch and she’d say, ‘Well, I have a hurt eye and I have to wear it.’ She wouldn’t let it get her down.”

The family’s hard work paid off. At the beginning of her rehabilitation, she couldn’t read the big letter on the eye chart with her injured eye. Today, Mason has 20/50 vision in her injured eye while wearing her glasses, which means she can read newspaper print. Both eyes are straight, the inflammation has gone down in her injured eye, and the prognosis is good. Mason is enjoying life—she is a voracious reader, enjoys playing the piano, loves all animals, and raises rabbits at the family home in Noble.

“Things were very uncertain in the beginning because she had all the risk factors for a poor outcome,” Dr. Siatkowski said. “She had a posterior injury of the eye, involvement of the retina and vitreous humor, and a delay in diagnosis. Usually when things like this happen, we like to correct them within 12 hours. We saw Mason a week after the injury, which is a lot of time for scar tissue or possible infection to set in. The majority of people with an injury like this end up meeting the criteria for legal blindness. But she has had a miraculous outcome.”

“With this type of injury in a child, it’s a partnership with the parents, and they were wonderful about having Mason wear her glasses, and patching and taking medications as directed,”

Dr. Siatkowski said. “Half of the credit goes to them—we all share it together.”

Throughout Mason’s treatment, the Borth family has grown close to the doctors and staff at the Dean McGee Eye Institute. They developed a rapport with “Dr. Mike” Siatkowski and his technician, Cheryl Harris, often bringing them one of Mason’s drawings or cookies she and her mother baked. The Borths are thankful for the expertise that saved their daughter’s vision, but that gratitude also works in reverse.

The Borths wanted to show their appreciation to DMEI in a lasting way, as well as help other families who are experiencing what they’ve been through. Recently, they made a donation to the DMEI Foundation to help others who are dealing with traumatic eye injuries. The donation was matched by Andy’s employer.



*Mason Borth at age 9.*

“We’ve been blessed because I have good insurance, so we never had to worry about the financial cost of what was happening,” Andy said. “But there are many people who don’t have good benefits and they worry about whether they can afford treatment. If we can help take that off their plate, that’s what we wanted to do.”

Indeed, the Borths’ contribution has already made a difference: So far, three families have received assistance with surgeries for traumatic eye injuries. ■

# Leslie Stewart Grateful for DMEI's Exceptional Care

**HUNDREDS OF MILES AWAY FROM HOME WITH PAIN**, swelling and redness around her eye, Leslie Stewart was miserable and unsure what her next step should be.


Health care providers at an urgent care facility near where the family was staying in Colorado told her it wasn't serious but that she should visit her ophthalmologist when she returned home to Oklahoma. Stewart and her husband, along with their young baby, began the long drive home, but as they were going over the mountain passes, her pain only got worse. She called the Dean McGee Eye Institute, and the on-call resident suggested they go to an emergency room. After a trip to the ER in Denver, where Stewart received antibiotics, they resumed their drive home.

**“My husband drove overnight with me and the baby 17 hours straight to get back to Dean McGee so we could go to someone we trusted and knew what was going on,” she said.**

“My husband drove overnight with me and the baby 17 hours straight to get back to Dean McGee so we could go to someone we trusted and knew what was going on,” she said.

Back in Oklahoma, Stewart was referred to P. Lloyd Hildebrand, MD, who arrived at the diagnosis: a tear duct obstruction that had become infected. Stewart was relieved someone could finally tell her what was wrong.

In a normally functioning system, tears run across the eye, drain into the nose, and then are swallowed. But Stewart's “drainage system” became blocked and infected by, essentially, a big pimple filled with pus.



To treat the condition, the first step was to drain the infected area, followed by the definitive treatment: a tear duct bypass operation. Once the infection and inflammation were gone, Hildebrand performed a surgery that rerouted the tear drainage system a little higher in Stewart's nose.

"Patients don't notice any difference—the drainage just occurs a little higher in the nose," Dr. Hildebrand said. "This fixes the underlying problem and patients swallow their tears normally."

It's not completely known what causes such an obstruction to form, Dr. Hildebrand said, although it likely starts with an infection in the tear duct system that scars over the tear duct. Because the tear duct system is inside the bones of the cheekbone, surgeons can't drill out the obstruction. But the bypass surgery is effective and accomplishes the same end goal.

Stewart was grateful for a quick resolution. The drainage and surgery were accomplished in short order, and the scar on her face is barely noticeable. But perhaps just as meaningful to Stewart was the warmth and kindness she experienced from Dr. Hildebrand and his staff during an anxious time. (Dr. Hildebrand retired from his full-time clinical and surgical practice at the Dean McGee Eye Institute on July 31. More to come in the next issue of *InVision*.)

Stewart's father is a physician himself, but he was out of state when she began having problems. After communicating by FaceTime, he was becoming alarmed at what he saw around his daughter's eye, as well as the pain she was experiencing. Before Stewart had the surgery, Dr. Hildebrand called her father to relay the diagnosis and procedure.

"It meant so much that he did that," Stewart said. "The entire office was phenomenal. They always knew my name, and they were always prompt and friendly. It was a very positive experience."

Sometimes it's the seemingly small things that make the biggest difference. Dr. Hildebrand was more than happy to call Stewart's father because he has been in that position as well—miles away and unable to help a family member. But he also credits his staff for creating an atmosphere where patients feel at ease.

"We have a general philosophy: Treat people the way we want to be treated if we're in the chair," Dr. Hildebrand said. "If you do that, you don't usually make mistakes, and if you do, they're forgivable mistakes, because you're trying to do the right thing. The philosophy is pretty simple, but it works." ■

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**THE DEAN MCGEE EYE INSTITUTE** gratefully acknowledges the donors who gave gifts in 2015 to support our missions of patient care, education, vision research, and community outreach. Every effort has been made to include all gifts and pledges from January 1, 2015 - December 31, 2015.

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Eileen Y.T. Lu  
Frances MacSwain  
Peter W.C. Mather  
L.E. "Mac" McAfee  
Mr. and Mrs. Thomas McCormick  
Edward McKenzie  
Amalia M. Miranda, MD  
Peter Montana  
Michael F. Moroz  
Major General Stanley F.H. Newman  
Annelle Nichols  
Robert and Wilma Nichols  
Michael Owens  
Ricky Palmer  
Floyd Perkins  
William L. Parry, MD



Kevin Perry  
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Paul E. Richardson  
Herman Roberson  
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Mr. and Mrs. Gene Scott  
Norma Sheltman  
W. Janath Slamans  
R. Emery and Mary Lee Smiser  
Jack Swaim  
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Jonathan Walgama, MD  
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Harold Whipple  
Ghita Williams  
Beverly Wittrock  
Tom Witty  
Lily Wong, PhD

### Up to \$99

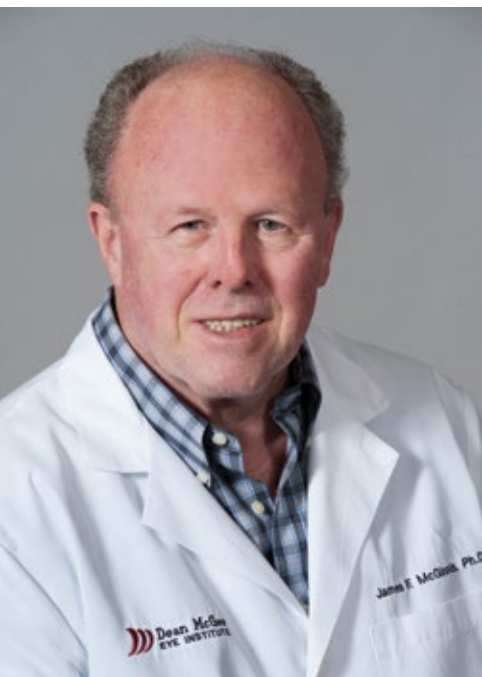
Desera Akram  
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Joyce Silver  
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Brenda Smith  
Mildred E. Smith  
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Lonnie F. Williams  
Mr. and Mrs. Edward G. Woods  
XTO Energy  
Suzanne C. Yenzer

# JAMES MCGINNIS, PhD RETIRES FROM DMEI LEAVING BEHIND A LEGACY OF GROUNDBREAKING RESEARCH



*James F. McGinnis, PhD*

**FOR NEARLY 20 YEARS AT THE DEAN MCGEE EYE INSTITUTE (DMEI), JAMES MCGINNIS, PhD,** conducted groundbreaking basic science vision research, including the use of nanoparticles to treat several eye diseases.

Dr. McGinnis retired at the end of June as a

Professor of Ophthalmology and Cell Biology but built a solid foundation of research that may well lead to future discoveries for treating some of the eye's most complicated conditions.

"I have been fortunate to be at the Dean McGee Eye Institute," Dr. McGinnis said. "I have enjoyed running a lab and doing work that I believe is directly applicable to solving human diseases. It's extremely important to enjoy what

you do, and I have always enjoyed coming to work. Some duties are not as pleasant as others, and some days your experiments don't work, but I've been fortunate to like what I do and be successful to the extent that I have."

Dr. McGinnis, who was awarded a Presbyterian Health Foundation Presidential Professorship in 2014 and now holds Professor Emeritus status, has indeed been successful, particularly in an era of reduced federal funding for basic science research. During his time at DMEI and the University of Oklahoma (OU), he was awarded five multi-year R01 grants from the National Institutes of Health (NIH), considered the gold standard in NIH funding. Along with many other state and federal grants, Dr. McGinnis was the principal investigator for grants totaling nearly \$11 million at DMEI/OU. In addition, he played significant roles for two NIH grants for mentoring junior scientific investigators and providing core facilities; those grants totaled another \$47 million.

"During his illustrious career, Dr. McGinnis has established an outstanding record of success in original scientific discovery, teaching, and mentorship, and has gained the great respect and deep affection of his colleagues and everyone with whom he has been associated," stated Gregory L. Skuta, MD, DMEI President

and CEO and Edward L. Gaylord Professor and Chair of the OU Department of Ophthalmology. “We wish Jim, his wife Tina, and their family all the best as he and Tina retire to California.”

A native of upstate New York, Dr. McGinnis earned his doctorate in cell biology and molecular biology at the State University of New York at Buffalo. He then headed west to the University of California, Los Angeles (UCLA) for a postdoctoral fellowship, and stayed at UCLA for the next 27 years, serving on the faculty there for 24 years. His postdoctoral training focused on the establishment, maintenance and use of neural cell cultures to study gene regulation in the central nervous system.

Although he was enjoying his work on tissue cultures of the brain, Dr. McGinnis had applied for a fellowship from the Foundation Fighting Blindness. He earned the award with his proposal of a method for identifying photoreceptor-specific proteins. That work launched his focus on vision research and led to a series of successful investigations that he continued after arriving at DMEI in 1997.

Dr. McGinnis’ strategy allowed him to clone four photoreceptor-specific proteins—rhodopsin, arrestin, recoverin, and phosducin. At the time he was working on rhodopsin, the human genome had not yet been mapped. Using his *in*

*vivo* model, Dr. McGinnis mapped rhodopsin to a specific site on human chromosome 3 and found no eye diseases corresponding to that location on the genome. Today, there are more than 100 mutations that map to the rhodopsin gene and cause blindness. Dr. McGinnis’ work was foundational for those future discoveries and marked a pivotal step in the understanding of that gene’s function in eye diseases.

He went on to clone the protein recoverin, which is involved in cancer-associated retinopathy. In this condition, the immune systems of some people with cancer make antibodies against recoverin. The body’s response to the antibodies is to eliminate photoreceptor cells in the eye, resulting in blindness. Dr. McGinnis’ research contributed to the

understanding of how recoverin is regulated.

Dr. McGinnis’ subsequent work with photoreceptor-specific proteins focused on their translocation from the inner segment to the outer segment of the rod cells, which are the cells that function in dim light. Specifically, his laboratory discovered that the proteins transducin and arrestin translocated from the rod outer segments to the rod inner segments simultaneously—in opposite directions and in a light-dependent manner. Today, this is

“**...Dr. McGinnis has established an outstanding record of success in original scientific discovery, teaching, and mentorship...**”

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a recognized mechanism for controlling the response of photoreceptor cells to light and dark environments. But when Dr. McGinnis first presented his studies at a national meeting, the response was not enthusiastic.

“The general comment was, ‘That’s really nice data, but it doesn’t really have anything to do with photo-transduction,’” he said. “It took quite a while for the phenomenon to be accepted. Now, it’s part of the dogma.”

As often happens in science, the next pathway for Dr. McGinnis’ research arrived thanks to serendipity. He read about a materials engineer at the University of Central Florida who was synthesizing nanoparticles (made of cerium oxide) to study their ability to provide heat resistance in metal coatings. One of the ways he was measuring the nanoparticles’ heat resistance was by their ability to destroy hydrogen peroxide. At the time, Dr. McGinnis also was using hydrogen peroxide to kill photoreceptor cells (as part of his study to determine what would protect them).

Dr. McGinnis contacted the researcher, and within six months, he had secured a materials transfer agreement to begin testing the nanoparticles in his animal models for eye disease. He has been particularly interested in their effect on diabetic retinopathy and macular degeneration, conditions whose treatment regimens often include monthly injections directly into patients’ eyes.

The key to Dr. McGinnis’ use of nanoparticles is that they destroy reactive oxygen species,

which increase and damage other molecules in conditions such as diabetic retinopathy, inherited retinal degeneration and macular degeneration. His hypothesis is that the nanoparticles can reduce the amount of reactive oxygen species, in turn retarding or preventing the downstream effects, including blindness. This was confirmed in animal studies. The nanoparticles act like Pac-Man and “eat” the reactive oxygen species, spurring the abnormal blood vessels that develop to be reabsorbed by normal cell death, also known as apoptosis.

Dr. McGinnis has published major articles about his nanotechnology studies and holds five patents related to that work. Although he didn’t uncover answers to all of his questions, he foresees the research field building on his work.

Dr. McGinnis also has been an active educator during his career, serving the Departments of Ophthalmology and Cell Biology at the OU College of Medicine. As an associate director for the Oklahoma Center for Neuroscience at the OU Health Sciences Center, he has established several courses for the program. In addition, he has mentored graduate students throughout his career, passing along his knowledge as well as his belief in the importance of basic science research for solving clinical problems.

“It’s nice to see students succeed and advance,” he said. “They start out worrying about exams and asking questions of broad significance that are impossible to address scientifically. Then they focus on their projects and their data, and they progress by answering one question after another.” ■



**CONGRESSMAN TOM COLE**, who serves the 4th District of Oklahoma, made a special visit to the Dean McGee Eye Institute (DMEI) on Tuesday, April 5, to meet with DMEI and University of Oklahoma (OU) vision scientists and Dr. Gregory L. Skuta, President and CEO of DMEI. His visit was part of a campus-wide tour of the OU Health Sciences Center (OUHSC). Congressman Cole serves as chair of the Appropriations Subcommittee on Labor, Health and Human Services, Education and Related Agencies and has been a strong supporter of scientific funding for the National Institutes of Health and National Eye Institute. ■



*Pictured left to right (back): Daniel J.J. Carr, PhD, Martin-Paul Agbaga, PhD, Raju V.S. Rajala, PhD, Dimitrios Karamichos, PhD, Gregory L. Skuta, MD, Robert E. Anderson, MD, PhD, and James J. Tomasek, PhD; (front): Anne Kasus-Jacobi, PhD, Darren J. Lee, PhD, Nawajes A. Mandal, PhD, Michelle C. Callegan, PhD, Congressman Tom Cole, John Bartrum (aide to Congressman Cole), Michael H. Elliott, PhD, and Yun Zheng Le, PhD.*



SAVE THE DATE  
**10th Annual  
OU Vision Workshop**  
*October 14, 2016*

*Tullos O. Coston, MD Lecture Hall at DMEI (5th floor, Acers Pavilion)*

**KEYNOTE LECTURER: Jeffrey L. Goldberg, MD, PhD**  
Professor and Chair, Department of Ophthalmology  
Byers Eye Institute, Stanford University, Palo Alto, California

# VISION RESEARCH INCLUDED IN OU's 2016 Red Book

**JAMES J. TOMASEK, PhD, VICE PRESIDENT FOR RESEARCH** and David Ross Boyd Professor of Cell Biology, invited vision research to be included in the 2016 release of the University of Oklahoma's "Red Book". The purpose of the Red Book is to describe strategically important research areas at the University of Oklahoma (OU), including the OU Health Sciences Center (OUHSC), in a context ranging from global to local, detailing key challenges, research strengths, and future opportunities. Additionally, the document identifies points of collaboration among priority areas and describes the potential impact of research outcomes for Oklahoma, the nation, and the world. This document is used by the OU Government Relations group to present OU's strategic research areas to our state and federal legislators, to other stakeholders and groups interested in OUHSC such as the Oklahoma City Chamber of Commerce, and to faculty and staff of OUHSC.

In the concluding paragraph of the section entitled "Treating Eye Disease in Oklahoma and Around the World," Drs. Robert E. Anderson and Gregory L. Skuta stated, "By maintaining and advancing our collective efforts, the



clinicians, surgeons, and scientists at OUHSC will continue to preserve and restore vision for the citizens of Oklahoma, while also conducting research that is focused on finding treatments and cures for potentially blinding conditions. We will continue our partnerships not only with the Harold Hamm Diabetes Center but also with the Departments of Cell Biology, Physiology, Microbiology and Immunology, Geriatric Medicine, and Medicine to achieve our ultimate goal of ensuring that all Oklahomans, throughout their lifetimes, will enjoy one of life's most precious gifts—the gift of sight." ■

## RESEARCH FACULTY— DEPARTMENT OF OPHTHALMOLOGY

Robert E. Anderson, MD, PhD  
Martin-Paul Agbaga, PhD  
Richard S. Brush, BS  
Xue Cai, PhD  
Michelle C. Callegan, PhD

Daniel J.J. Carr, PhD  
Phillip S. Coburn, PhD  
Ana Chucair Elliott, PhD  
Michael H. Elliott, PhD  
Dimitrios Karamichos, PhD

Darren J. Lee, PhD  
Feng Li, MD, MPH, MS  
Raju V.S. Rajala, PhD  
Lily L. Wong, PhD

# UNIVERSITY OF OKLAHOMA DEPARTMENT OF OPHTHALMOLOGY 2016-2017 **NEW RESIDENTS & FELLOWS**

## CONGRATULATIONS TO THE INCOMING 2016 RESIDENTS



*Pictured left to right: Drs. Rogers, Burks, Miller, and Venincasa*

### **John Russell Burks, MD**

College: University of Arkansas  
Medical School: University of Arkansas  
for Medical Sciences

### **Valerie L. Miller, MD**

College: University of Oklahoma  
Medical School: University of  
Oklahoma College of Medicine

### **Kyle A. Rogers, MD**

College: University of Oklahoma  
Medical School: University of  
Oklahoma College of Medicine

### **Vincent D. Venincasa, MD**

College: University of Miami  
Medical School: University of Miami  
Miller School of Medicine

## INCOMING FELLOWS 2016-2017

### **Matthew D. Cooke, MD**

*Glaucoma Fellow*  
Medical School: University of Michigan  
Medical School  
Residency: Medical College of  
Wisconsin

### **Daniel E. Montenegro, MD**

*Cornea Fellow*  
Medical School: Universidad Central del  
Caribe, Puerto Rico  
Residency: Kresge Eye Institute/Wayne  
State University

### **Shripaad Y. Shukla, MD**

*Retina Fellow*  
Medical School: University of Illinois  
College of Medicine  
Residency: University of Chicago

## RESIDENTS ARRIVING IN 2017

### **David R. Griffin, MD**

College: Brigham Young University  
Medical School: University of Central  
Florida

### **Brett M. Gudgel, MD**

College: University of Oklahoma  
Medical School: University of  
Oklahoma College of Medicine

### **Finny T. John, MD**

College: Cornell University  
Medical School: State University of  
New York, Upstate-Syracuse

### **Gerta Muho, MD**

College: Oakland University  
Medical School: Oakland University/  
Beaumont School of Medicine

## 2015 OPHTHALMOLOGY RESIDENCY MATCH FOR 2016 POSITIONS

Total Applicants - 386  
Interviewed - 60  
Ranked - 56  
Matched - 4

## 2016 OPHTHALMOLOGY RESIDENCY MATCH FOR 2017 POSITIONS

Total Applicants - 435  
Interviewed - 46  
Ranked - 46  
Matched - 4



## SAVE THE DATE: Monday, September 26, 2016

### THE 25<sup>TH</sup> ANNUAL WALTER J. STARK MEMORIAL LECTURESHIP

8:30 am-9:30 am • Tullos O. Coston Lecture Hall

### **Alfred Sommer, MD, MHS**

*Gilman Scholar and University Distinguished Service Professor, Johns Hopkins University  
Johns Hopkins Professor of Epidemiology, Ophthalmology, and International Health  
Dean Emeritus, Johns Hopkins Bloomberg School of Public Health*

# Ophthalmologist Donates LASIK Surgery to First Responders

**ON SEPTEMBER 11, 2001, WHEN THE TERRORIST ATTACKS OCCURRED, RAINNA BAHADUR, MD,** was driving to the Dean McGee Eye Institute, where she was early in her cornea fellowship. Along with so many others that day, she felt heartbroken and wanted to find a way to give back through her skills as an ophthalmologist.

Several years later, after she had returned to her native Mississippi to practice ophthalmology, she found her means of making a difference. The realization came while she was driving home from work one evening and saw a police officer approaching a car he had just pulled over in the dark.

“It dawned on me in that moment as I watched the officer walk up to the car. He didn’t know what he was walking up to, and I wondered what would happen if he got in a scuffle and lost his glasses,” Bahadur said. “Seeing this made me realize there was a way I could help ‘pay it forward.’”

Since then, every year around September 11, Bahadur has performed LASIK surgery at no cost on a police officer, firefighter or other first



*Rainna Bahadur, MD, practices ophthalmology with Eye Associates of the South in Gulfport/Biloxi, Mississippi, and is the corneal specialist for the practice. (Photo credit: Southern Mississippi Living magazine).*

responder for whom good eyesight is critical for his or her job. By eliminating the need for eyeglasses or contacts, Bahadur feels like she is giving back to those who put themselves in harm’s way every day.

“For police officers and firefighters, there are many different scenarios in which their eyesight can be compromised,” she said. “I’ve had firefighters tell me their glasses won’t fit under their helmets. I want to eliminate their need for glasses or contacts not for cosmetic reasons, but for life-saving reasons.”

Dr. Bahadur practices ophthalmology with Eye Associates of the South in Gulfport/Biloxi, Mississippi, where she is the corneal specialist. She performs corneal transplants and cataract surgery and treats corneal ulcers and cancers on the ocular surface, along with other corneal



problems. She also performs numerous LASIK surgeries as part of her daily practice. But to find candidates for the surgery from the first responder community, she has developed a relationship with the Biloxi Police Department. Each year, she talks to Sgt. Jackie Rhodes, who leads the mission of finding someone. Once that person is identified and selected, Dr. Bahadur makes sure his or her eyes are a candidate for LASIK before scheduling the surgery.

For her dedication to first responders, Dr. Bahadur was awarded the 2015 Community Partnership Award by the Biloxi Police Department. “I didn’t expect them to thank me when I was trying to thank them,” she said. “But it was a nice award.”

Giving back to others comes naturally to Dr. Bahadur. Her parents modeled it for her growing up, and she sees it in her friends and neighbors in Mississippi, where she was born and raised. She also is a member of the Lions Club, which is active with vision projects, as well as the Junior Auxiliary of Gulfport, which helps children with vision problems among its various initiatives.

Dr. Bahadur said she experienced that same sense of community while in Oklahoma for her fellowship. At DMEI, she primarily worked with Thomas Wolf, MD, Rhea Siatkowski, MD, and James Chodosh, MD, seeing patients each day and gaining in-depth experience with corneal transplants and disease.

“They are brilliant, wonderful surgeons, but also very compassionate,” Dr. Bahadur said. “They taught me to be compassionate and take pride in my work. Everyone worked hard, and you felt proud at the end of the day.”

Dr. Bahadur was interested in entering the field of ophthalmology since her early days of training at the University of Mississippi School of Medicine, where she also completed her residency. Ophthalmology offered her the surgical precision she was drawn to, as well as the ability to help men, women and children obtain better eyesight.

“Vision is such a precious gift, and there’s a lot of immediate gratification when you help someone see better,” she said. “It’s a very rewarding field.” ■

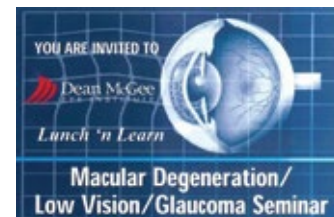
*Dr. Bahadur receives the 2015 Community Partnership Award from Sgt. Jackie Rhodes with the Biloxi Police Department for providing LASIK surgery to first responders in Mississippi.*



**SAVE THE DATE Monday, October 31, 2016**

## Macular Degeneration/ Low Vision/Glaucoma (MDLVG) Seminar

Please join us for this informative seminar to learn from the Dean McGee Eye Institute faculty and an occupational therapist and hear about the latest adaptive devices and technology for those experiencing low vision.



If you would like to be added to the mailing list for this seminar, please call 405.271.7801.

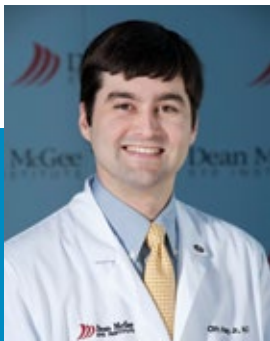
A special thanks to our 2015 MDLVG Seminar supporting sponsors: Alcon Laboratories, Samis Education and Conference Center, Southwestern Group of Companies, and ComTech Design & Mail. Exhibiting companies included: DMEI Optical Services, Genuine Care, Oklahoma Library for the Blind and Physically Handicapped, and Precision Optical. Supporting speakers: Cathy Holden and Marlene Show, NewView Oklahoma; Deborah Trout, Department of Rehabilitation Services; and Judy Brookover, Library for Blind & Physically Handicapped, State of Oklahoma.



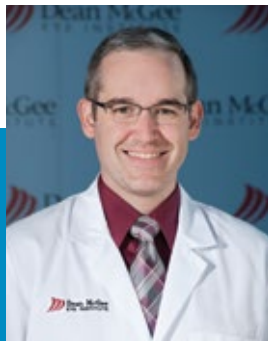
**AT THE UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE SENIOR BANQUET ON MAY 19**, Dr. Brett M. Gudgel received the 2016 Dean McGee Award in Ophthalmology as the most outstanding graduating medical student in ophthalmology. He will begin his ophthalmology residency at the Dean McGee Eye Institute/OU Department of Ophthalmology in July 2017. Dr. Gudgel (left) is shown with Dr. M. Dewayne Andrews (right), Executive Dean of the OU College of Medicine. ■



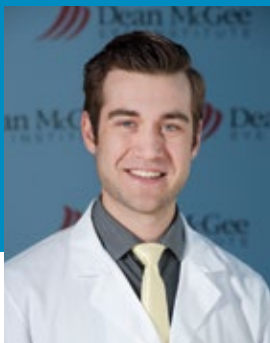
## Residents Attend Iowa Refractive Surgery Course



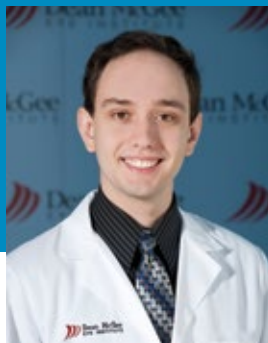
Clifton C. Fay, Jr., MD



James C. O'Brien, MD



Andrew L. Rodenburg, MD



Eli Sluch, MD

### DMEI SECOND-YEAR RESIDENTS

attended the Iowa Refractive Surgery Course on April 2. They attended lectures in the morning and the VISX certification course and wet labs in the afternoon. The IntraLase/VISX wet labs included creating a LASIK flap, lifting the flap and treating with the VISX excimer laser. The LASIK flap suturing wet lab then allowed the residents to practice suturing their LASIK flaps. Visit the DMEI LASIK Vision Correction page for information on vision correction surgery, <http://www.dmei.org/lasik-vision-correction-doctors>. ■

## 2016 SERVICE, TEACHING, AND RESEARCH AWARDS

OKLAHOMA ACADEMY OF OPHTHALMOLOGY  
DISTINGUISHED SERVICE AWARD  
James B. Wise, MD

EDWARD AND THELMA GAYLORD FACULTY  
HONOR AWARD  
Janine E. Collinge, MD

EXCELLENCE IN ATTENDING AT VA AWARD  
David W. Jackson, MD

DR. AND MRS. T.E. ACERS RESIDENT HONOR AWARD  
Jeremy F. Tan, MD

ROBERT G. SMALL, MD RESIDENT AWARD FOR  
MEDICAL STUDENT EDUCATION  
Jeremy F. Tan, MD

ANNIE MOREAU, MD FELLOW TEACHING AWARD  
Jared R. Jackson, MD

## SAVE THE DATE Saturday, June 3, 2017

Dean McGee Eye Institute  
Ophthalmology Symposium 2017  
41<sup>ST</sup> OU RESIDENT AND ALUMNI MEETING  
38<sup>TH</sup> TULLOS O. COSTON LECTURE



David F. Chang, MD  
Clinical Professor, University of  
California-San Francisco  
Past President, American Society  
of Cataract and Refractive Surgery

Samis Education Center, The  
Children's Hospital, Oklahoma City



# FIGHTING CANCER



Saving Eyesight,  
Saving *Lives*



**IN THE FIELD OF OCULAR ONCOLOGY, OPHTHALMOLOGISTS TREAT A VARIETY OF CANCERS, AND DO SO WITH TWO VERY IMPORTANT GOALS IN MIND: SAVING LIFE AND SAVING VISION.**

A cancer diagnosis is sufficiently frightening by itself, but becomes even more alarming when vision is threatened. Dean McGee Eye Institute (DMEI) ophthalmologists who treat cancers of the eye bring a broad spectrum of expertise, technology and a capacity for collaboration.

“Teamwork and collaboration have been fundamental elements of the Dean McGee culture since its inception and are absolutely critical in providing care to this important population of patients,” said Gregory L. Skuta, MD, DMEI President and CEO and Edward L. Gaylord Professor and Chair of the OU Department of Ophthalmology.

DMEI has developed a robust group of ophthalmologists who can treat any eye-related malignancy in both adults and children. They range from tumors on and inside the eye, to tumors on the eyelid, to tumors in the orbit surrounding the eye.

Brian Firestone, MD, who returned to his medical school alma mater 2 1/2 years ago after finishing fellowships in ocular oncology

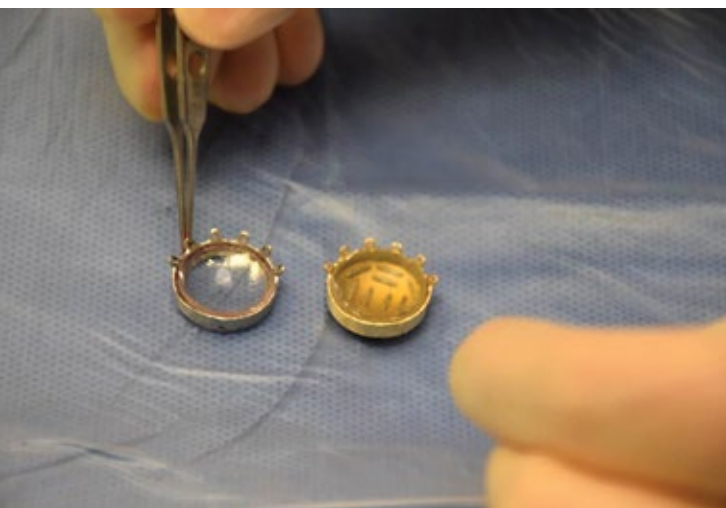
and ophthalmic pathology at the Wills Eye Hospital in Philadelphia, primarily treats tumors that are in the eye or on the surface of the eye. In particular, his practice emphasizes uveal melanoma, or melanoma on the inside of the eye. Dr. Firestone has expanded the use of radiation plaque therapy, which delivers localized radiation directly into the tumor.

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*Dr. Carol Shields (left), co-director of the esteemed Ocular Oncology Service at the Wills Eye Hospital in Philadelphia, helped direct Dr. Brian Firestone's (right) fellowship training in the treatment of uveal melanoma and other cancers involving the eye. They are pictured together at the 2016 Tullos O. Coston, MD Speakers Dinner held at the Colcord Hotel on June 3.*

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On the right is the radioactive plaque. It is comprised of a gold outer shell and a silicone inner portion, into which iodine-125 seeds are placed. On the left is a "dummy" plaque, which is used as a template for aligning the plaque and allows minimal exposure time to the live plaque.



Performing plaque surgery on a patient with uveal melanoma.

Radiation plaque therapy involves radioactive iodine seeds that are attached to a small gold disk, or plaque. Each plaque is custom-made by radiation oncologists at the University of Oklahoma's (OU's) Stephenson Cancer Center according to the size of the tumor and strength of radiation required. During surgery, Dr. Firestone places the plaque directly over the tumor, using sutures to attach it to the eye. Over the course of four days, the seeds direct the radiation into the tumor to kill the cancer cells.

**“Radiation plaque therapy has a success rate of approximately 95 percent in destroying the tumor.”**

“After four days in the hospital, we conduct another surgery to remove the plaque,” he said. “About 90 percent of intraocular melanomas can be treated with that method, which spares patients from having the eye removed.”

Radiation plaque therapy has a success rate of approximately 95 percent in destroying the tumor. However, patients must be followed after surgery because the tumor may metastasize. Uveal melanomas, because they're located in an area of the eye with high blood flow, tend to spread through the bloodstream, usually to the liver, Dr. Firestone said. DMEI offers genetic testing, based on a biopsy of the tumor, to predict the likelihood of metastasis.

“We offer that to patients as part of their treatment,” he said. “The risk for metastasis can

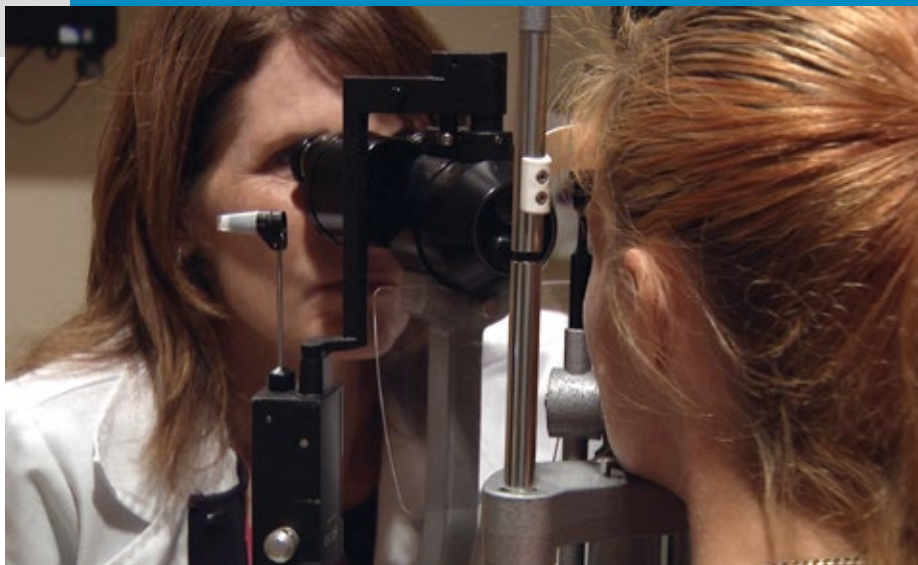
range from as low as 2 percent over five years to as high as 72 percent over five years.”

Vision also may be affected by uveal melanoma. The degree of vision loss depends upon the size of the tumor, as well as its location, especially in relationship to the optic nerve and the macula, Dr. Firestone said. Most of his patients retain some degree of useful eyesight after radiation plaque therapy, some as good as 20/20 vision.

In addition, the use of the medication Avastin, injected into the eye, can help preserve vision and minimize the effects of radiation.

Dr. Firestone also treats hemangiomas, or vascular tumors inside the eye. Hemangiomas are treated not because they're malignant, but because they leak fluid that damages vision. This condition is often treated with photodynamic therapy, in which the patient receives an infusion of medication that circulates through the body, including to the eyes. The medication is activated by a special laser that is directed through the pupil and into the vascular tumor, destroying the abnormal blood vessels.

Dr. Firestone also treats tumors on the surface of the eye, as well as a spectrum of precancerous and cancerous lesions called ocular surface squamous neoplasia, or OSSN. Tumors on the surface of the eye are usually treated with surgical resection, combined with cryotherapy that freezes the margins of the tumor to eliminate any remaining cancer cells. OSSN lesions are often treated with topical chemotherapy drops, which represent a major advancement in the field in the past decade. Such ocular surface conditions are also cared for



*Dr. Rhea Siatkowski with cornea patient. She is part of the DMEI team that treats tumors affecting the surface of the eye.*



*Drs. Alex Davis (left) and Garrett Frank (right) also treat cancers involving the surface of the eye. They are pictured with Dr. Frank's wife Cassidy (center) at the 2016 Acers Society Reception held on the 50th floor of the Devon Energy Center on June 4.*

by our cornea and external disease specialists, who include Drs. Rhea Siatkowski, Alex Davis, and Garrett Frank.

As someone with training in ophthalmic pathology, Dr. Firestone brings the additional skill of diagnosis by looking at specimens under the microscope. That service, which was not available within DMEI before his arrival, also benefits medical residents during their education.

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For cancers on the eyelid, or within the complex world of the eye's orbit, another skilled and experienced team of ophthalmologists with expertise and training in ophthalmic plastic and reconstructive surgery cares for patients. Orbital tumors are especially challenging to treat not only because of the multitude of cancers that can occur, but because of the many sources of tissue making up the orbit of the eye.

Because of the complexities of orbital tumors, ophthalmologists collaborate frequently with their colleagues in other medical disciplines, especially neurosurgeons and otolaryngologists. Sinus tumors or brain tumors, for example, may extend into a patient's eye socket, or involve the

nerves and muscles of the eye. Annie Moreau, MD, often represents ophthalmology at Tumor Board meetings in which physicians from several disciplines discuss patient cases, along with nurses, social workers and other providers.

"It's very powerful to have all these physicians within their own subspecialties in one room at the same time," she said. "It means we have a much better chance of accomplishing our goal for the patient, and it prevents miscommunication because everyone is under one roof. It is definitely better patient care."

Ophthalmologists also bring an important perspective to Tumor Board meetings. A neurosurgeon may be leading a patient's case discussion, but the ophthalmologist can describe the visual pathways affected by a tumor and what needs to be considered during surgery.

Tumors that involve only the eye or the tissues around it can be equally challenging, however. The goal is to avoid key structures of the eye while removing the cancer. "To me, what's always been amazing is when a tumor is simply behind the eye—it's not involving anything else," Dr. Moreau said. "There's no way to access it unless you remove a piece of the bone. And then you find yourself in a very dark place where everything you touch is important. You have to get to the tumor and remove it without touching anything else."

It's that intricacy, along with the opportunity to be involved in a patient's broader state of health, that is rewarding to ophthalmologists who work in oncology. P. Lloyd Hildebrand, MD, said they often take care of their patients over a longer period of time and talk with them in depth about addressing both the cancer and their vision.

"I tell patients that we're going to take care of their cancer first, then we look at the function



*Dr. Jared Jackson (left) poses with Annie Moreau, MD (right), one of his fellowship mentors and an oculoplastic surgeon at DMEI. Ophthalmic plastic and reconstructive surgeons diagnose and treat eyelid cancers and tumors involving the orbital tissues surrounding the eye. They are pictured together at the 2016 Resident and Alumni Dinner held on the 50th floor of the Devon Energy Center on June 4.*



of the eye, and then the appearance of the eye,” he said. “We do it in that order because we can make you look good, but if we leave part of the tumor behind, that doesn’t help you. Or we can make you look good, but if you can’t see well, that’s not advancing your quality of life, either. Our goal is to save life by eliminating the cancer, getting their visual function back, then looking at their appearance.”

DMEI’s ophthalmologists also perform a large number of reconstructive surgeries. Tumor removal around the eye or in the eye socket often requires reconstruction, depending on how much normal tissue is lost, Dr. Hildebrand said. They also receive reconstructive surgery patients from dermatologists after Mohs surgery has been performed to remove skin tumors around the eye.

“Those are interesting surgeries. Sometimes it’s as simple as putting together a four-piece puzzle, and sometimes it’s more like a 5,000-piece jigsaw puzzle,” said Dr. Hildebrand, who retired from his full-time clinical and surgical practice on July 31. (More to come in the next issue of *InVision*.) “Sometimes there’s not enough skin left, so you take skin from the inside of the arm to do a skin graft, or a myocutaneous flap from the cheek.”

DMEI ophthalmologists treat children’s eye cancers as well, primarily retinoblastoma, rhabdomyosarcoma and neuroblastoma. Retinoblastoma, though rare, is the most common pediatric eye cancer in the United States. When caught early—often by a pediatrician who notices the lack of a

normal red reflex in a child’s eye—the survival is greater than 95 percent.

DMEI also has a strong educational mission, and ocular oncology is a significant draw for residents and fellows, who vie for highly competitive slots. Jared Jackson, MD, who finished his fellowship in oculoplastic surgery this summer, is drawn to the variety that ocular oncology offers, as well as the ability to work with multiple organ systems and see patients over a longer period of time.

“Our goal is to get rid of the cancer,” Dr. Jackson said. “But there are few places where collateral damage is more devastating than near the eye. Losing vision can be overwhelming—the impact on quality of life and daily activities is immense. Our multidisciplinary approach, along with our expertise to preserve vision, is gratifying to us and beneficial for our patients.” ■

“DMEI ophthalmologists also perform a large number of reconstructive surgeries.”



*Retinoblastoma begins in the back of the eye (retina) and is the most common cancer involving the eye in children. It can create a white reflex in the eye as seen on the right side of the photograph.*





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