

PERSPECTIVE

2017 ANNUAL REPORT

UAB MEDICINE

CALLAHAN EYE HOSPITAL & CLINICS
DEPARTMENT OF OPHTHALMOLOGY
AND VISUAL SCIENCES

Milestones in Our Mission

The year 2017 was one of major milestones for the University of Alabama at Birmingham (UAB) Department of Ophthalmology and Visual Sciences and Callahan Eye Hospital. The annual report from the Blue Ridge Institute for Medical Research ranked UAB Ophthalmology No. 6 in the country for National Institutes of Health (NIH) funding. This is up substantially from No. 17 in the previous year and makes UAB Ophthalmology the fastest growing department in the nation over the past five years. UAB's total annual National Eye Institute research funding exceeded \$11 million in 2017, making the UAB vision research community one of the largest research programs in the country.

This meteoric rise was the objective of our Vision of Excellence (VOE) program, which we launched in 2012 with collaborative investments from the UAB School of Medicine, the Eyesight Foundation of Alabama, and the International Retinal Research Foundation. With the support of these donors and other philanthropic partners, this initiative has far exceeded our goals and has spurred transformative growth in our clinical enterprise and translational science and research efforts.

Our jump into the top 10 for NIH funding represents a nearly fivefold increase in research funding since 2012, when NIH grants totaled just \$1.6 million per year. This establishes UAB Ophthalmology as the fastest growing ophthalmology department in the country in terms of NIH support. This growth is due to the dedicated work of our faculty, which has expanded from 29 when the VOE program was launched to 49 in 2017. This expansion will further enhance our mission to provide comprehensive training to the next generation of ophthalmologists, recruit and retain world-class scientists to expand our cutting-edge research programs, and deliver high-quality care across all subspecialties.

Meanwhile, Callahan Eye Hospital's surgical caseload has grown dramatically alongside an ambulatory clinic volume that has nearly doubled during the past five years. This was accomplished, in part, by more than doubling the number of ambulatory clinics to 15 convenient locations across northern Alabama.

We are proud to be a nationally recognized leader in vision research, and we are delighted with the progress we continue to make, as it reflects the commitment we established over 50 years ago to preserving and restoring global eye health. It is exciting to see that vision continue to come into focus.

Thank you for reading *Perspective*. The work showcased in this 2017 annual report represents just a sample of the excellence and innovation taking place in our clinics, classrooms, and laboratories.

Sincerely,



A handwritten signature in black ink, appearing to read "Chris Girkin".

Christopher A. Girkin, MD, MSPH, FACS

*EyeSight Foundation of Alabama Chair,
UAB Department of Ophthalmology and
Visual Sciences*



A handwritten signature in black ink, appearing to read "Rett Grover".

Rett Grover, MSHA, MBA

*Interim Chief Executive Officer
UAB Callahan Eye Hospital & Clinics*



Table of Contents

BY THE NUMBERS

Research and Funding	2
Patient Care Growth	4

RESEARCH

Top 10 Ranking in NIH Grant Support	7
Innovative Young Investigators Attract Millions in Research Grants	8
Glaucoma's Impact on Reading Difficulty	9
ALSTAR Study Finds Answers in the Dark	10
Advanced Imaging Drives AMD Research	12
Why Are People of African Descent at Greater Risk for Developing Glaucoma?	14
New Research Hires	16

EDUCATION

Alumni Around the United States	18
Residents and Fellows	19
Lions Clinic Enables Real-World Training	20
Investing in Excellence	21
GoPro Cameras Used in Innovative Microsurgery 3D Video Training Project	22
Dr. Kline Stresses the Importance of Relationships	24

PATIENT CARE

Callahan Offering New Treatment for Dry Eye	26
Dr. Samuels Named Chief of Staff, Director of Glaucoma Division	27
An Uncommon Diagnosis and Successful Surgery for Jacob Farley	28

PHILANTHROPY

Donor Spotlight: Research Support Fund Renamed to Honor Grandson	30
Endowed Chair Established to Honor Callahan Eye Hospital Founder	31
A Lasting Legacy through Art	32
UAB School of Medicine Honors EyeSight Foundation of Alabama	33
Vision for the Future	34
Seeing the Impact	35
How to Help	35

COMMUNITY OUTREACH

UAB Ophthalmologists Develop Exam Kit to Help EMS Deal with Eye Trauma	37
Adaptive Yoga Study Shows Promise for Visual Impairment	38

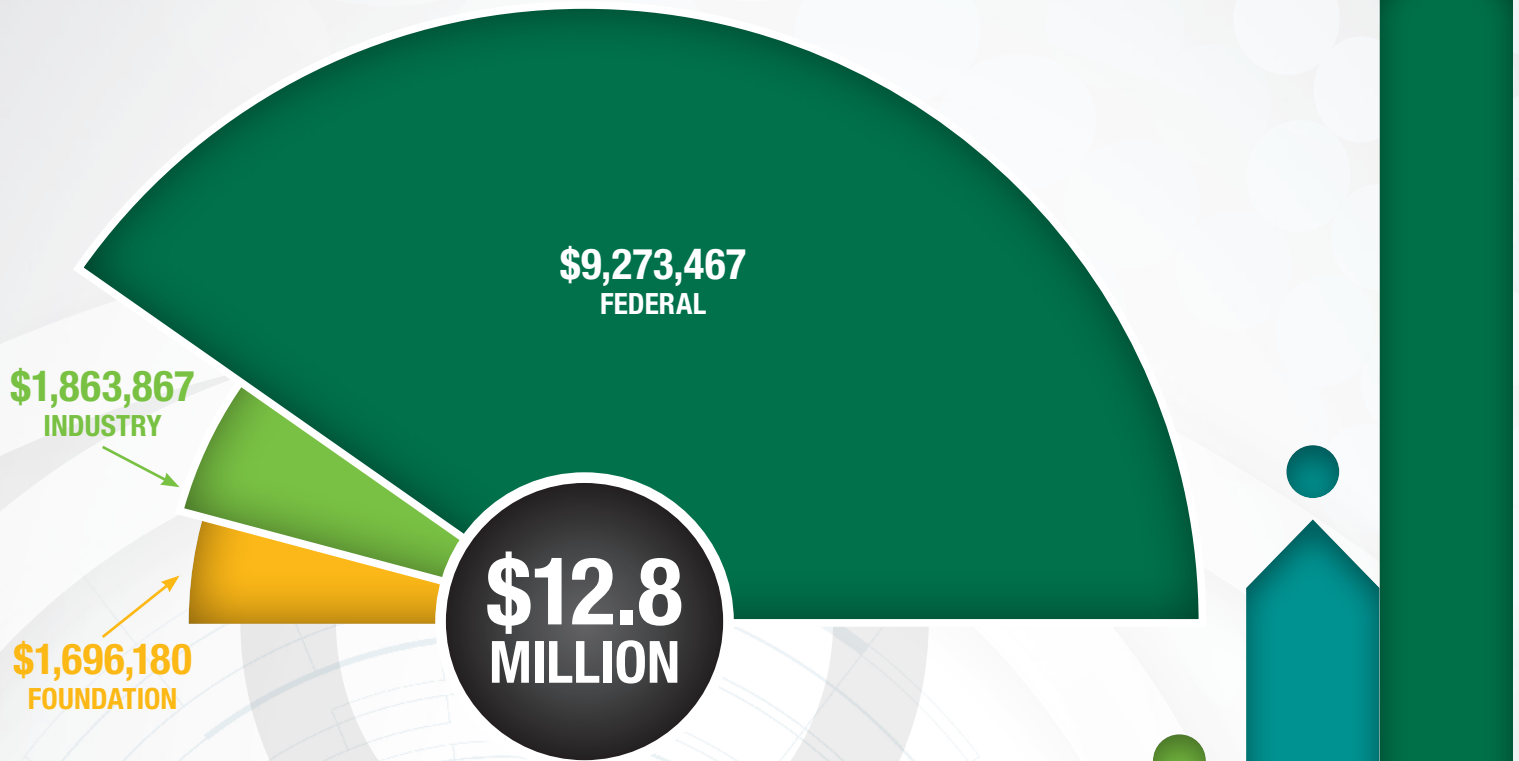
FACULTY

Faculty Listing	40
Callahan Eye Hospital Medical Staff Physicians	44

APPENDICES

Publications	46
Invited Lectures and Presentations	53
Grants & Awards	58

2017 ACTIVE AWARDS BY SPONSOR TYPE



NIH RANKING

2017

NIH Funding – \$7,962,142

2016

NIH Funding – \$4,982,803

2015

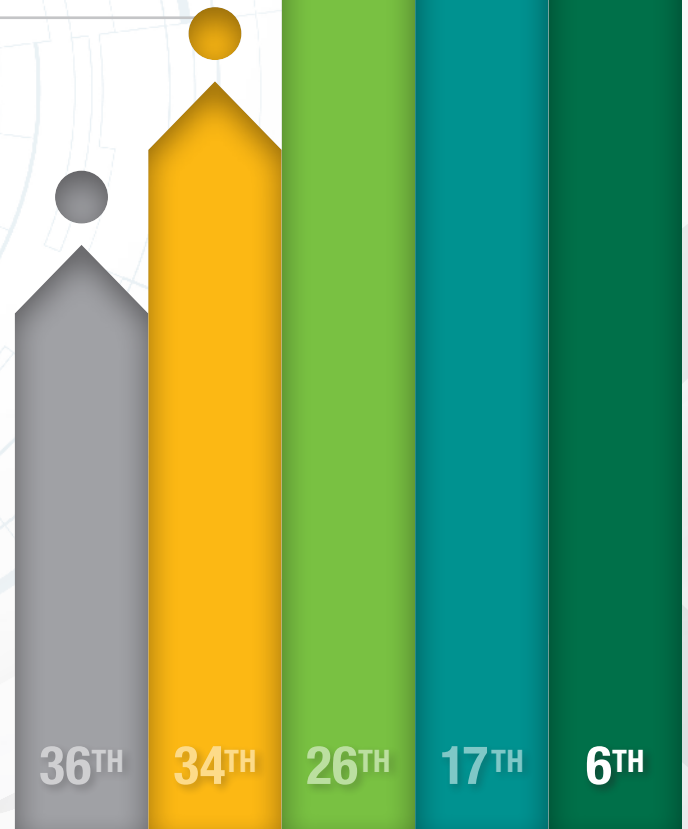
NIH Funding – \$3,300,536

2014

NIH Funding – \$2,018,914

2013

NIH Funding – \$1,755,703



LARGEST 5 YEAR GROWTH RATE IN THE U.S.

Data obtained from the Blue Ridge Institute for Medical Research on March 1st, 2018.

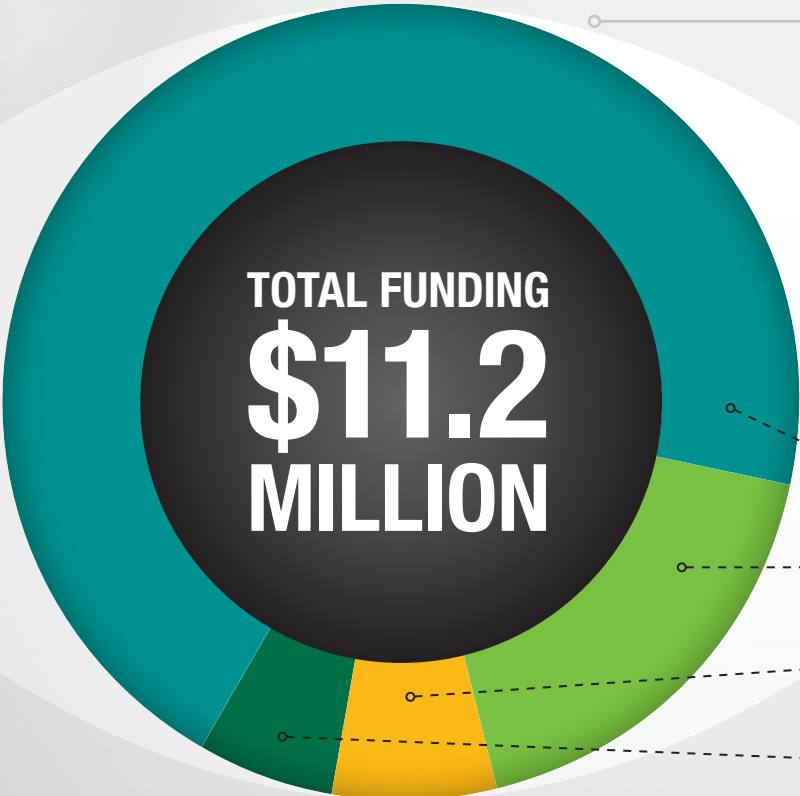
21 ACTIVE NIH GRANTS

ACTIVE RESEARCH
PROTOCOLS
PURSUED IN 2017:

189

100%

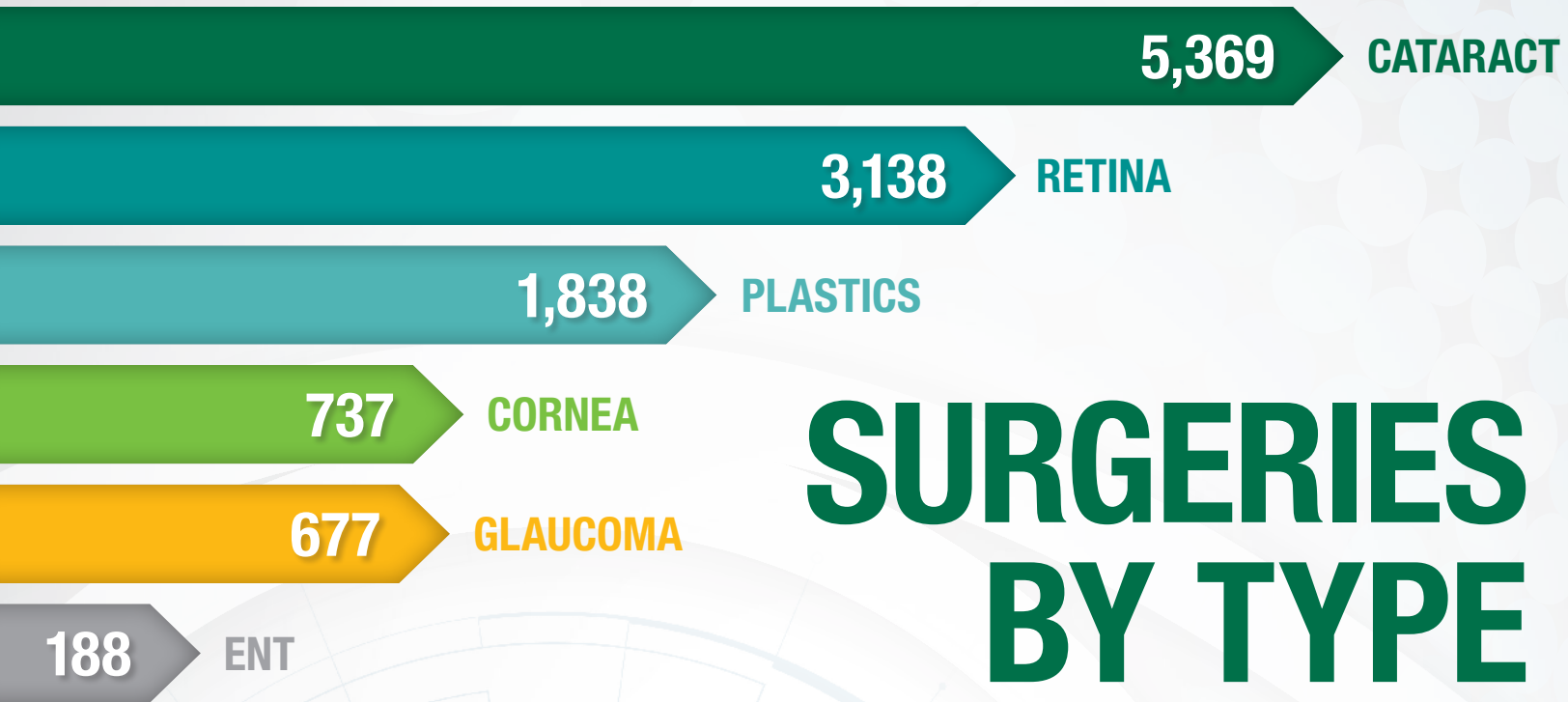
OF RESEARCH FACULTY
ARE PI'S ON
NATIONAL
EYE
INSTITUTE
GRANTS



UAB CAMPUS-WIDE NATIONAL EYE INSTITUTE GRANT FUNDING

- \$7,962,142 DEPARTMENT OF OPHTHALMOLOGY AND VISUAL SCIENCES
- \$2,027,897 SCHOOL OF OPTOMETRY
- \$736,500 P30
- \$628,071 NEUROBIOLOGY

Data obtained from the Blue Ridge Institute for Medical Research on March 1st, 2018.



SURGERIES BY TYPE

11,947 SURGERY PROCEDURES

2,635 LASER PROCEDURES

1-IN-4 CASES AT UAB MEDICINE ARE PERFORMED AT CALLAHAN

DEDICATED EYE CARE FACILITY 

1 OF ONLY 2 LEVEL 1
Ocular Trauma Centers in the nation



16,570

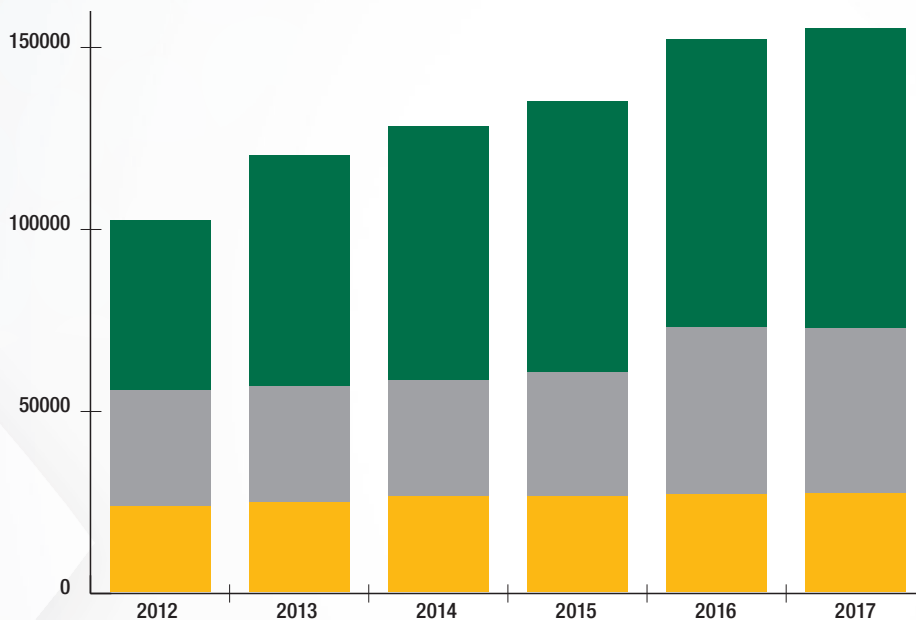
PEDIATRIC CLINIC VISITS

34% INCREASE FROM 2016

EXPANDING TO MEET GROWING DEMAND

Opened **8 new operating rooms**, doubling the number to 16 ORs dedicated to eye surgery

AMBULATORY CLINIC VOLUME



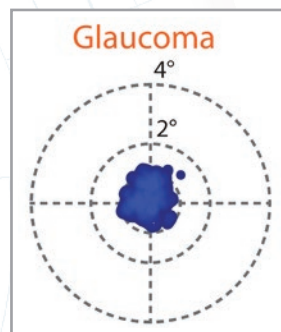
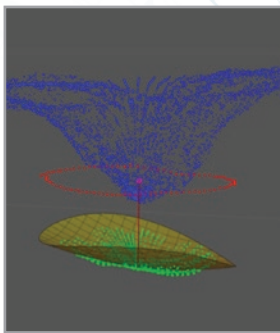
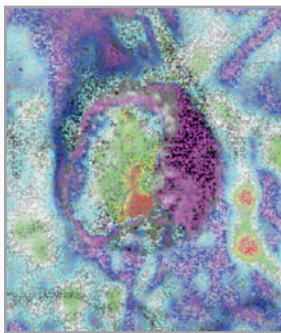
MORE THAN 150K CLINIC VISITS IN 2017

- FACULTY CLINICS**
- AFFILIATE CLINICS**
- TEACHING CLINICS**

FACULTY GROWTH

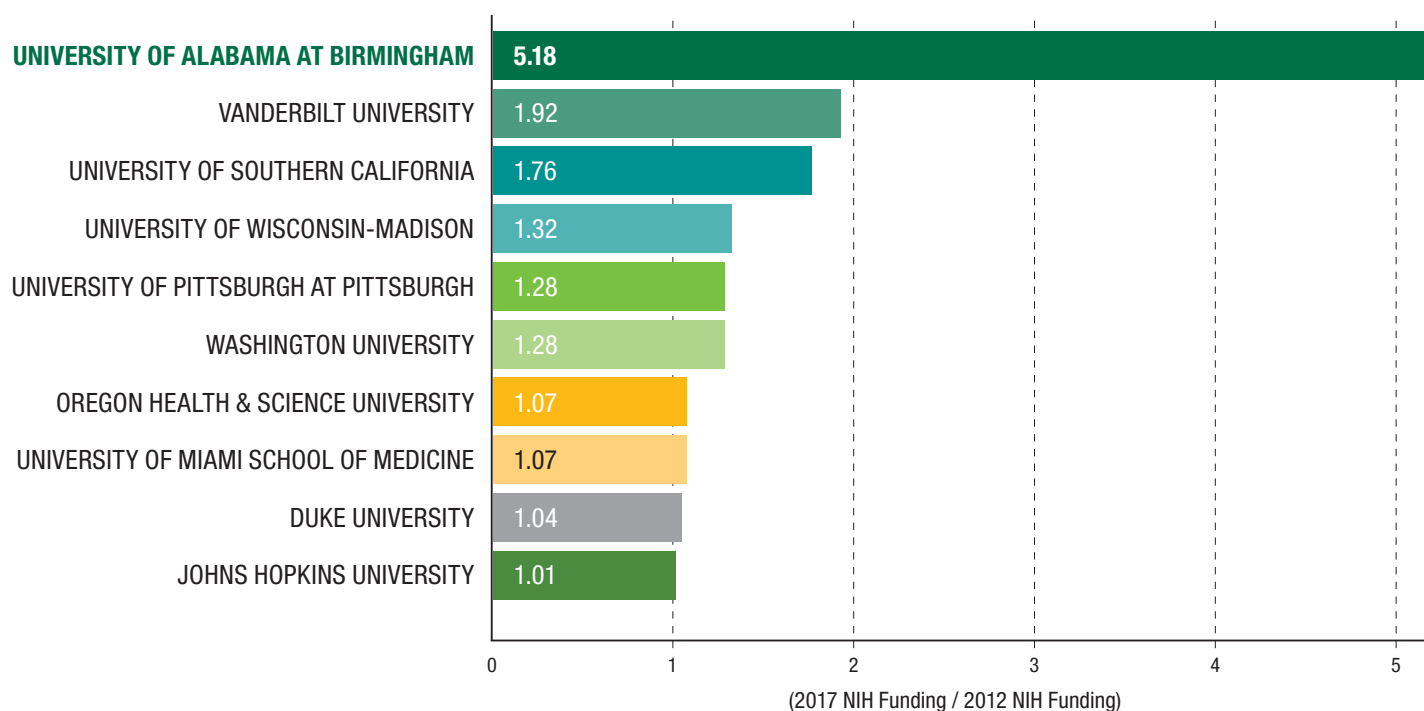


RESEARCH



UAB Ophthalmology Ranks among Top 10 in NIH Grant Support

5-Year Proportional Growth of Top 10 Research Programs in the U.S.



The University of Alabama at Birmingham (UAB) Department of Ophthalmology and Visual Sciences reached a major milestone in 2017. According to figures available through the Blue Ridge Institute for Medical Research, UAB Ophthalmology ranks No. 6 in the country for the amount of funding it receives from the National Institutes of Health (NIH), with over \$7.9 million in NIH grant support during calendar year 2017. This represents a nearly fivefold increase in research funding since the department's Vision of Excellence program began in 2012. This ranking also establishes UAB Ophthalmology as the fastest growing ophthalmology department in the country.

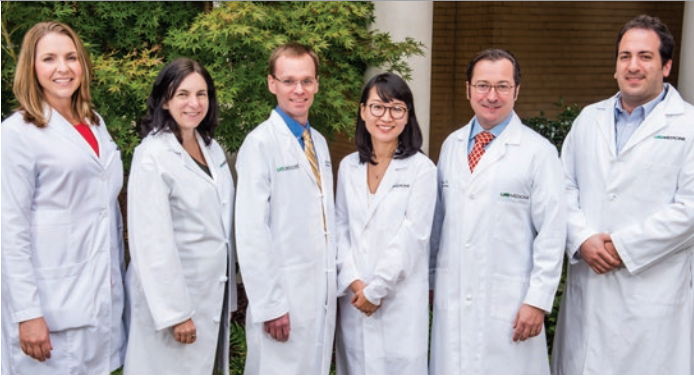
These highly competitive federal funds provide essential support for UAB Ophthalmology's scientists to advance the departmental mission of translating knowledge from the bench to the bedside, providing robust training to the next generation of ophthalmologists, and improving eye health by alleviating blinding disease. This achievement reflects the tremendous efforts of UAB Ophthalmology researchers and further cements the department as a nationally recognized leader in vision research. Moreover, it represents a significant growth in research capacity and enhances the department's ability to recruit and retain world-class researchers.

The Vision of Excellence initiative, sponsored by the EyeSight Foundation of Alabama, was designed

to provide the capital investment to move UAB Ophthalmology into a Top 20 position for NIH funding. This effort – combined with the generous support from foundations such as the International Retinal Research Foundation, Research to Prevent Blindness, and several individual donors – has enabled the department to attract a much larger interdisciplinary team of researchers than anticipated. UAB Ophthalmology's efforts have been critical in the renewal and enhancement of the university-wide core grant and growth of UAB's vision science community. In fact, overall, UAB Ophthalmology vision research exceeded \$11 million annually for 2017, which was second only to Johns Hopkins University.

"While I was excited to hear the accolades for our department's success, I am humbled by the understanding of all of the efforts from so many that have made this growth possible," says Christopher A. Girkin, MD, MSPH, EyeSight Foundation of Alabama Chair of the Department of Ophthalmology and Visual Sciences. "I am also thankful for the foresight of our donors, supportive foundations, and the School of Medicine, which has provided the support needed to invest in the best and brightest at UAB. This achievement has been driven by our amazing team of researchers and clinician-scientists, who have built this remarkable program through their ingenuity, dedication, and resilience. It has been a profound honor for me to serve them as their chair through a remarkable period of change."

Innovative Young Investigators Attract Millions in Research Grants



L to R: Lindsay Rhodes, MD; Lyne Racette, PhD; Brian Samuels, MD, PhD; MiYoung Kwon, PhD; Rafael Grytz, PhD; and Massimo Fazio, PhD

Six of the UAB Department of Ophthalmology and Visual Sciences' young investigators brought in nearly \$13.5 million in National Institutes of Health (NIH) grants. These flourishing careers at UAB continue to transform the lives of patients living with blinding diseases through discovery, prevention, and treatment. Our young investigators are committed to preventing, treating, and curing all forms of blinding disease through advanced research and interdisciplinary collaboration.

Lindsay Rhodes, MD; Lyne Racette, PhD; Brian Samuels, MD, PhD; MiYoung Kwon, PhD; Rafael Grytz, PhD; and Massimo Fazio, PhD, are six young researchers who are

revolutionizing science right here at UAB. The resources for awarded research grants are slowly dwindling as the NIH continues to reduce funding, making our dedicated young investigators an even greater asset to our research program.

These researchers come from across the country and around the world to bring their diverse wealth of knowledge to the UAB Department of Ophthalmology and Visual Sciences. Blinding disease can be debilitating for patients and their families, so more research into developing new treatments is desperately needed. Some researchers are studying basic science, while others are exploring root causes, preventive measures, and delivery models, making for a well-rounded, comprehensive research program. The young investigators highlighted below are dedicated to groundbreaking research:

MASSIMO A. FAZIO, PHD, ASSISTANT PROFESSOR

Dr. Fazio and his colleague, Christopher Girkin, MD, EyeSight Professor and Chairman of Ophthalmology, received a four-year, \$2.55 million R01 grant from the NIH to explore how visual field loss developed with glaucoma is associated with individual-specific biomechanics of the eye. The African Descent and Glaucoma Evaluation Study (ADAGES) seeks to understand why individuals of African descent are at greater risk of developing glaucoma. To learn more about Dr. Fazio's ADAGES research, see the story on page 14.

RAFAEL GRYTZ, PHD, ASSOCIATE PROFESSOR

Dr. Grytz has two NIH-funded grants. Both are R01 grants from the NEI to explore the underlying cause of myopia, the most common refractive error of the eye, and the influence of ocular remodeling of glaucoma. Utilizing his knowledge of biomechanics, Dr. Grytz's laboratory has made major advances in the treatment of blinding eye diseases.

MIYOUNG KWON, PHD, ASSISTANT PROFESSOR

Dr. Kwon received her first R01 grant in 2017 from the NIH to study the perceptual mechanisms responsible for reading difficulty in glaucoma. This research could have a significant impact on patients, as it seeks to alleviate reading difficulties and optimize their remaining vision. To learn more about Dr. Kwon's glaucoma research, see the story on page 9.

LYNE RACETTE, PHD, ASSOCIATE PROFESSOR

Dr. Racette recently joined UAB Ophthalmology from Indiana University, where she was a pivotal figure in its research program. She will serve in the same capacity

for UAB's research aimed at identifying changes in glaucoma. Her NIH-funded grant seeks to detect and prevent glaucoma progression through a novel approach, allowing clinicians to make accurate assessments for patients.

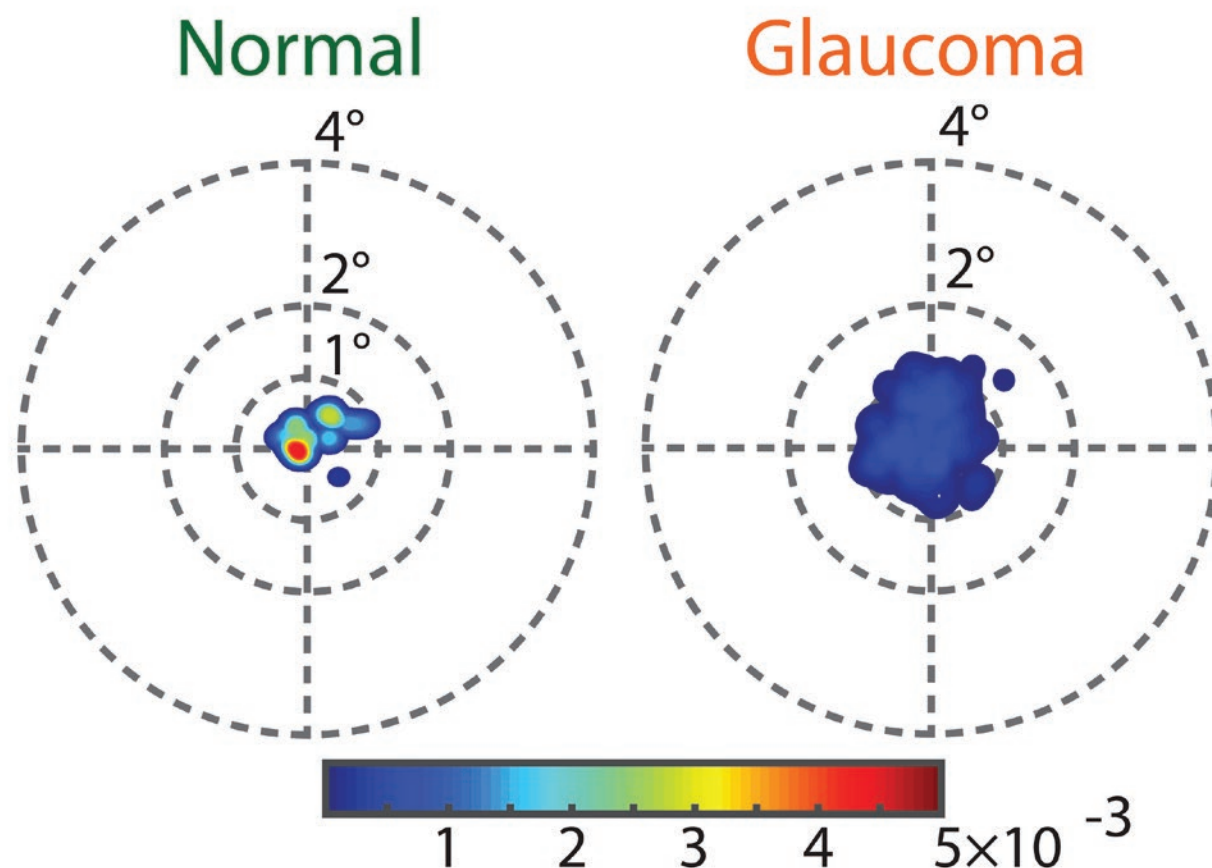
LINDSAY RHODES, MD, ASSISTANT PROFESSOR

Dr. Rhodes received a \$1 million NIH/NEI grant to study new care delivery models to treat glaucoma. She says it is essential to develop novel health care models, utilizing telemedicine, to improve the ability of routine eye exams to detect glaucoma at an earlier stage, and to provide a platform to manage this disease in community-based clinics to prevent further vision loss. The grant includes funding to develop Dr. Rhodes into an independent investigator through mentored research and the completion of a Master of Science in Public Health.

BRIAN C. SAMUELS, MD, PHD, ASSOCIATE PROFESSOR

Dr. Samuels has three NIH-funded grants. One is a five-year, \$1.5 million award (his first R01 grant) to explore the links between circadian fluctuations and glaucoma. The second is a five-year, \$2.3 million multi-PI R01 grant with Rafael Grytz, PhD, to study the link between myopia and glaucoma, and the third is an R21 grant that aims to validate the use of a tree shrew model in treating glaucoma. Dr. Samuels also recently received the Research to Prevent Blindness Physician-Scientist Award, and he continues to collaborate with scientists at the Georgia Institute of Technology and NASA's Glenn Research Center to understand why astronauts who spend long periods of time in space are experiencing vision problems.

Binocular fixational stability



Having unstable fixations or other forms of abnormalities in eye movements is often a major cause of reading difficulties, such as a slow reading rate or reading fatigue. Thus, our lab examines patients' eye movements while they are engaged in visual tasks. This figure shows poor fixation stability in glaucoma patients compared to normal cohorts.

Glaucoma's Impact on Reading Difficulty

MiYoung Kwon, PhD, assistant professor in the UAB Department of Ophthalmology and Visual Sciences, has received her first R01 grant from the National Institutes of Health (NIH) to study the perceptual mechanisms responsible for reading difficulty in people with glaucoma.

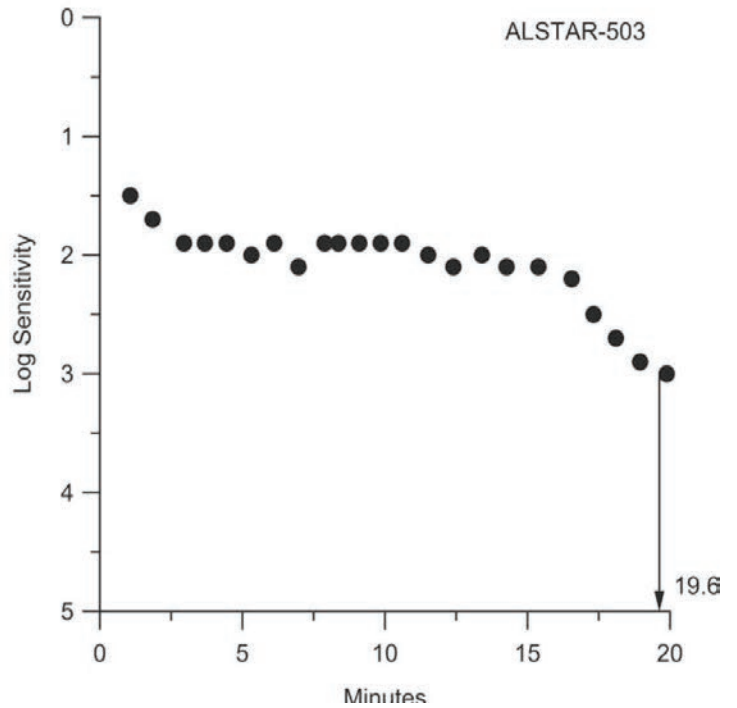
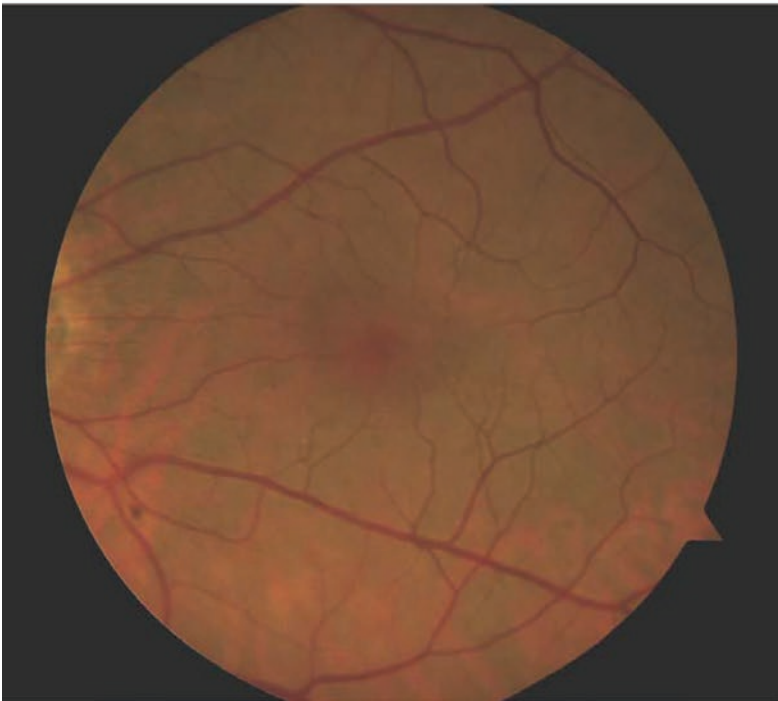
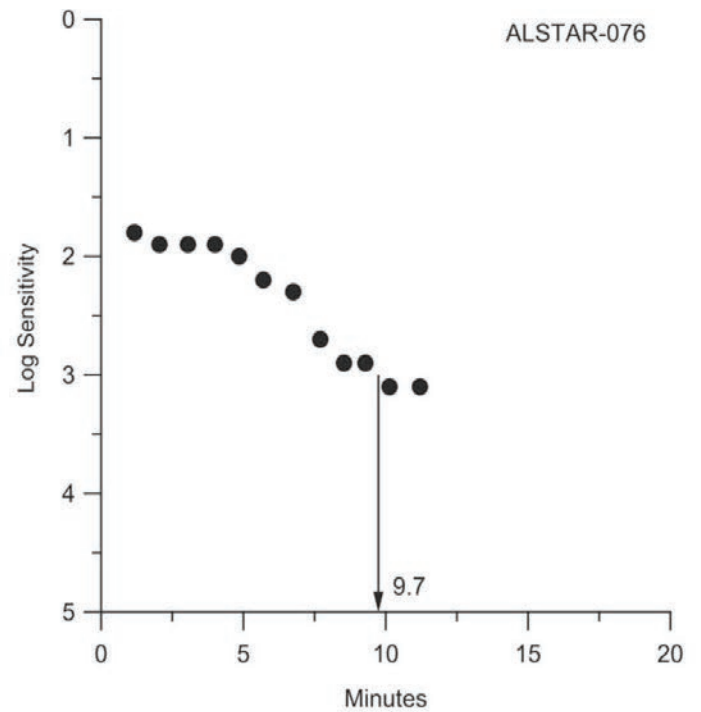
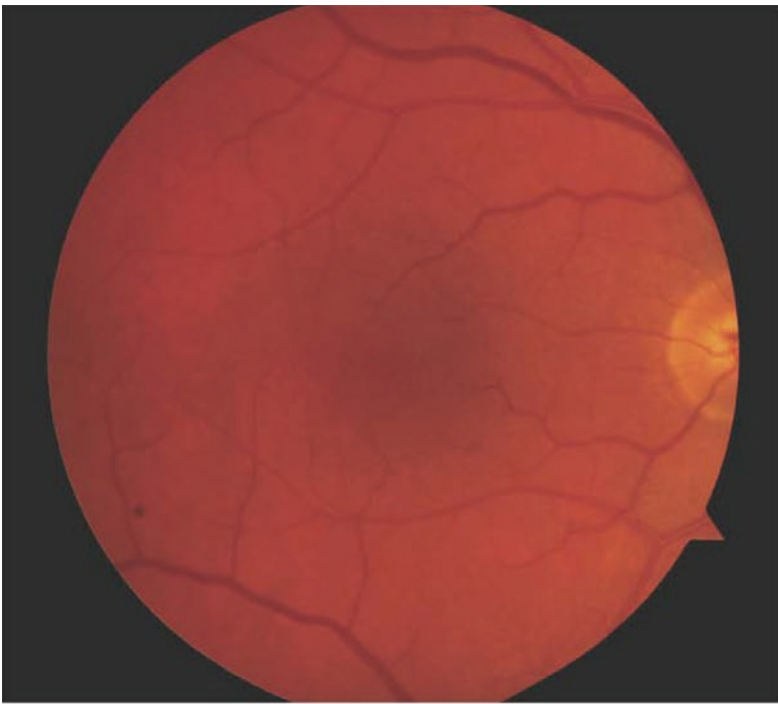
Glaucoma is a group of eye disorders that have few symptoms in their early stages but eventually lead to damage of the optic nerve (the bundle of nerve fibers that carry information from the eye to the brain), which can then result in vision loss or complete blindness. Glaucoma affects more than 3 million people in the United States and is the leading cause of blindness in African-Americans. Globally, 60.5 million had glaucoma in 2010, but given the world's aging population, this number may increase to 80 million by 2020.

"There is a viewpoint that glaucoma spares central vision because glaucoma develops slowly with the initial loss of peripheral (side) vision," Dr. Kwon says. "However, studies show that individuals with glaucoma, even in the early stages of the disease, report reading problems as one of their main difficulties. Despite this clinical significance, to date, little attention has been paid to understanding how glaucomatous damage undermines central vision tasks, such as reading."

Thanks to recent advances in retinal imaging technology, we now know that the macula, the central portion of the retina responsible for high-acuity vision, is significantly affected even in the early stages of glaucoma. Dr. Kwon's research aims to investigate the functional impact of this macular damage, and the outcome should reveal the perceptual factors underlying reading difficulties and help guide clinicians in prescribing appropriate reading aids and rehabilitative strategies to glaucoma patients.



Using a high-speed eye tracker, the gaze positions of a patient's eyes are being recorded by Dr. Kwon while the patient is engaged in a reading task. This study is designed to examine abnormalities in patterns of binocular eye movements following glaucomatous damage and its impact on reading performance.

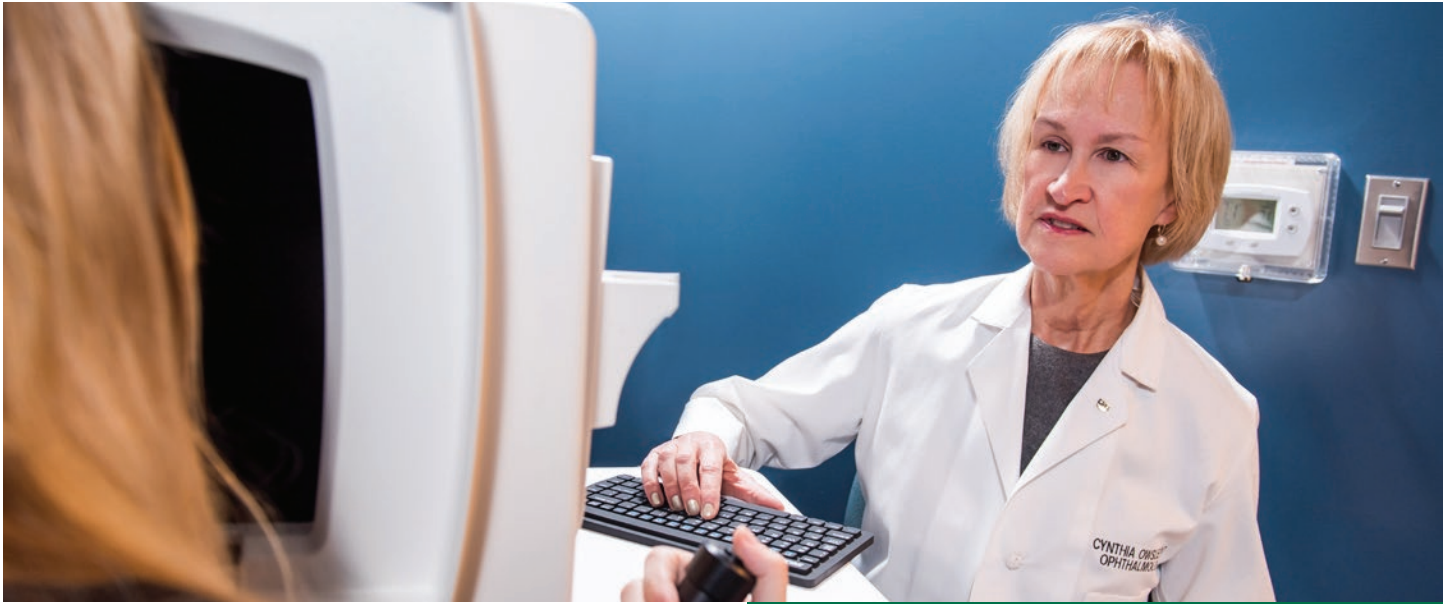


Top: Color fundus photograph (right eye) of a 75-year-old participant in normal macular health. Bottom: Color fundus photograph (left eye) of a 72-year-old participant in normal macular health yet has abnormal rod-mediated dark adaptation

ALSTAR Study Finds Answers in the Dark

Cynthia Owsley, PhD, MSPH, is studying the functional and structural risk factors for early-onset age-related macular degeneration (AMD) through the ALSTAR Study. ALSTAR, the Alabama Study on Early Age-Related Macular Degeneration, is funded by the National Institutes of Health (NIH) and aims to identify those factors that are responsible for developing early-stage AMD.

AMD is the leading cause of severe vision loss and legal blindness in Americans age 60 and older, affecting up to 15 million people in the United States today and expected to grow to almost 200 million people worldwide by 2020. As the population ages, those numbers will only increase. AMD occurs when the central portion of the retina, known as the macula, deteriorates. The exact cause is unknown, and new treatments are desperately needed.



Cynthia Owsley, PhD, uses the AdaptDx to measure dark adaptation.

Dr. Owsley, the Nathan E. Miles Chair of Ophthalmology, Vice Chair of Research Administration, and Director of the Clinical Research Unit, says lots of information is known about the characteristics that put people at risk for intermediate AMD, or AMD that progresses to advanced stages, but the scientific community knows very little about why the disease develops in the first place. Most researchers focus on preventing end-stage AMD, as this causes severe blindness, but she prefers to focus on the root cause and is searching for what factors are responsible for the transition between normal aging and early AMD.

BIOMARKER FOUND

The initial ALSTAR study is complete, and Dr. Owsley and her team are analyzing data. So far, there has been a significant finding. Dr. Owsley was able to identify the first functional biomarker for early-onset AMD: slowed dark adaptation – the amount of time it takes a person to adjust to darkness after leaving bright daylight.

“Imagine you are walking around outside on a bright, sunny day,” Dr. Owsley says. “Then you step into a dark movie theater. We all have that brief moment where our eyes naturally adjust between the light and the dark, but for people with early-onset AMD, that period of time is extended past a normal threshold. For these people, it doesn’t just take seconds – it takes several minutes.”

This was measured in the study using a dark adaptometer instrument known as AdaptDx. Patients were given a bright flash of light, similar to a bright photoflash. The flash “photobleached” the photoreceptors temporarily, but as the receptors sat in the dark and recovered, Dr. Owsley was able to measure the rate of light sensitivity recovery over the next few minutes.

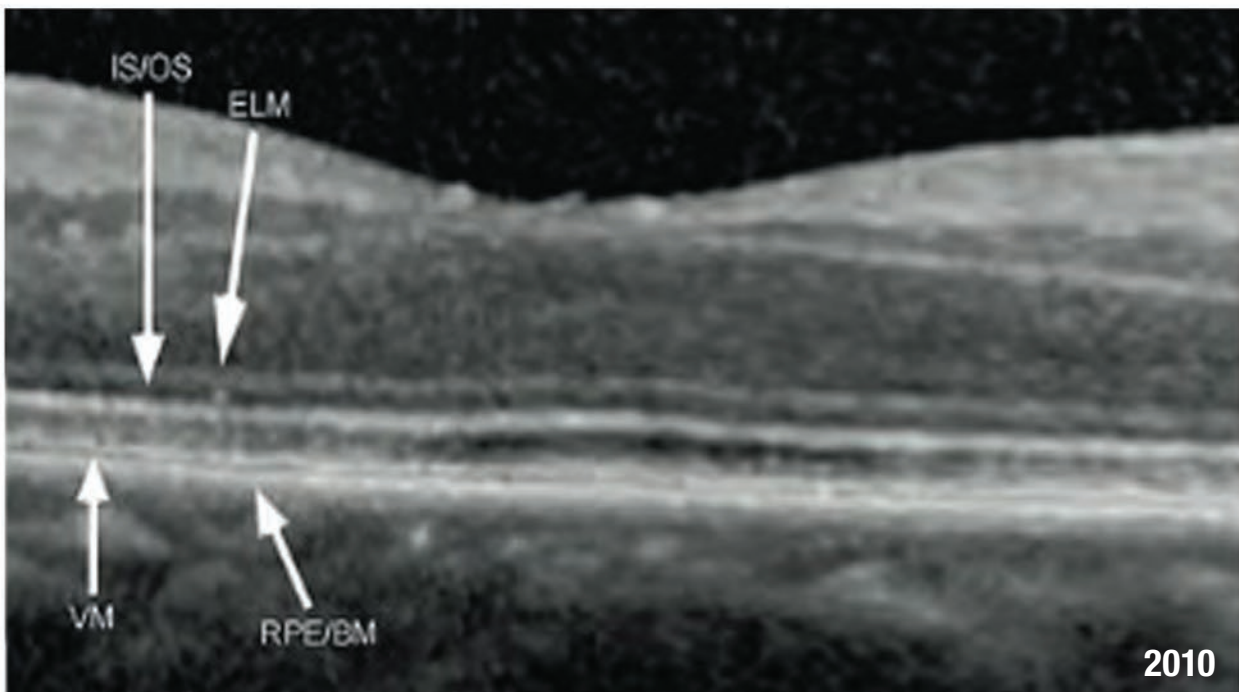
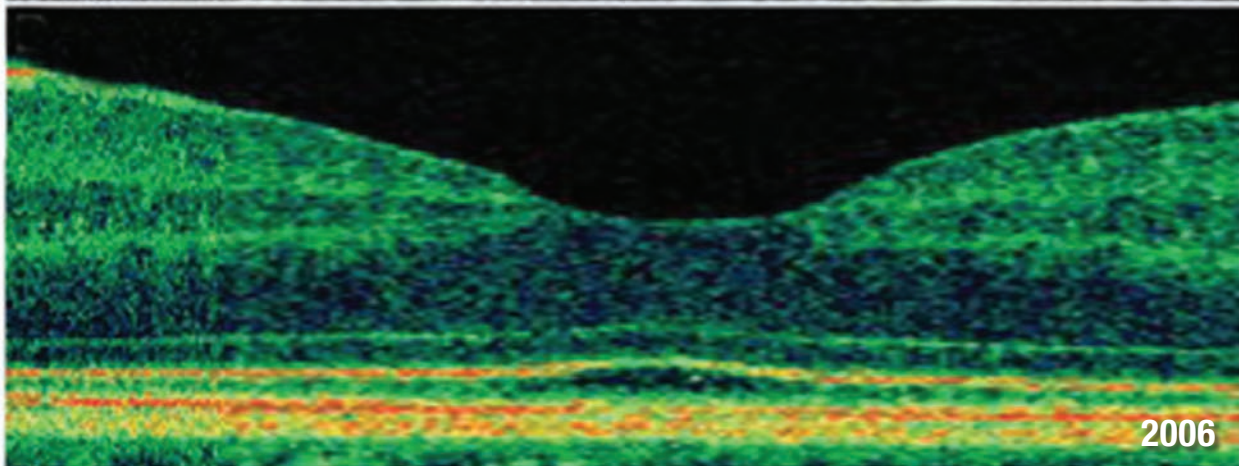
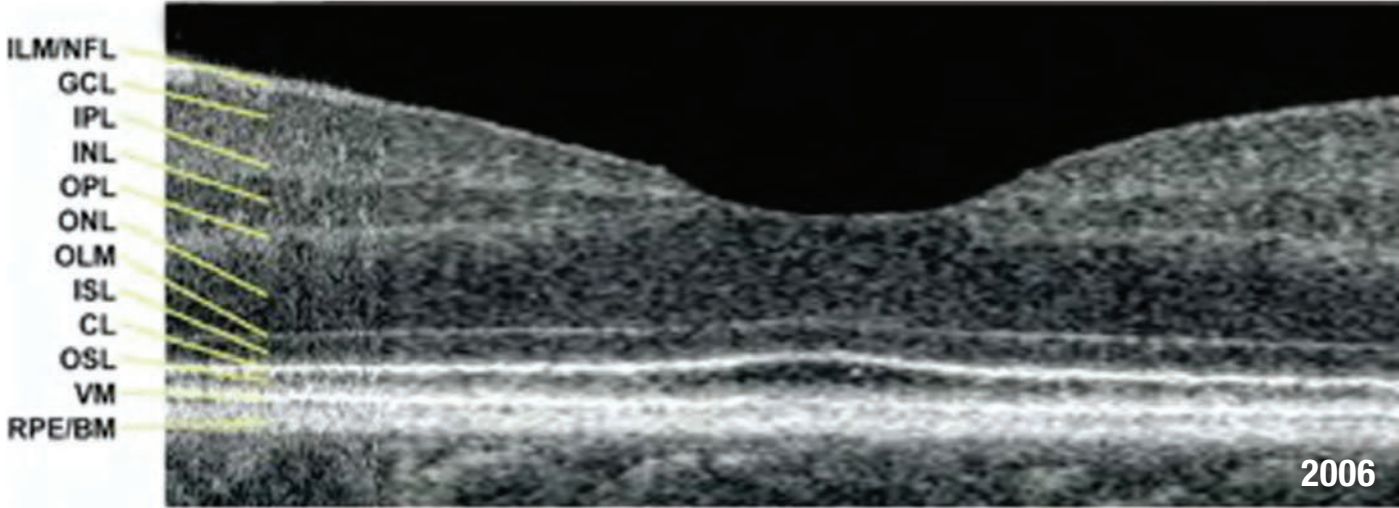
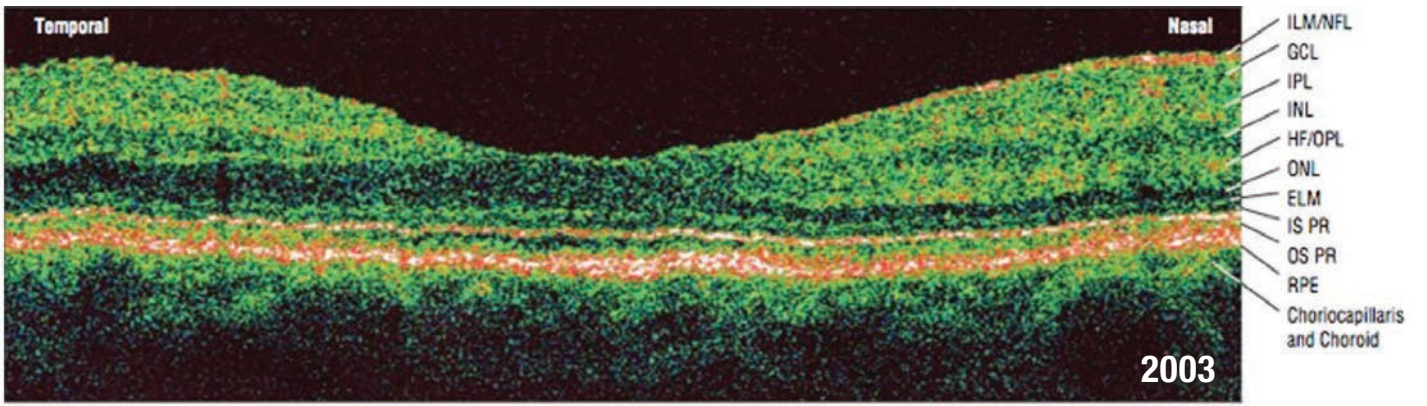
There are generally two types of photoreceptors in the eye: rods and cones. Cones are mostly responsible for seeing daylight, vision, and color, while rods specifically are used for seeing under dim illumination and at night.

The AdaptDx instrument was developed here at UAB by Cynthia Owsley, PhD, and a former colleague, Greg Jackson, PhD. Dr. Owsley says there was no computerized device available at the time that could measure dark adaptation, yet they saw a commercial and research need for such a device, so they developed one.

Rods are especially vulnerable to the aging process and the early degenerative changes in AMD. The more time it takes the rods to respond and take over, the slower the dark adaptation.

Over 600 patients were involved in the study. They were followed for three years, but the study took nearly seven years. Dr. Owsley and her colleague, Christine A. Curcio, PhD, a professor in the UAB Department of Ophthalmology and Visual Sciences, hope to soon move on to the next phase of the study, which calls for examining the structure-function relationships to better understand the disease’s progression over time. This should provide more information about how anatomical changes in the retina underlie slowed dark adaptation in AMD.

Dr. Owsley says this research will not only clarify what is going on in the initial phases of the disease, but it also will provide new tools for evaluating treatments to prevent AMD in older adults at higher risk for developing the disease.



OCT evolution has advanced over the years, and the layers become more defined over time. Dr. Curcio and her lab work to interpret images, such as this, to discover breakthroughs in AMD research.

Advanced Imaging Drives AMD Research

Christine A. Curcio, PhD, a professor in the UAB School of Medicine's Department of Ophthalmology and Visual Sciences, is validating imaging technology to help ophthalmologists understand the retina using optical coherence tomography (OCT). Her laboratory studies images and tissue samples to discover basic mechanisms underlying age-related macular degeneration (AMD) in the hope of developing better treatments for patients.

"OCT is a non-invasive imaging test that uses light waves to take cross-sectional pictures of the retina and the blood vessels behind it. It's often described like an ultrasound," Dr. Curcio says. "The eye functions like a camera, so when light shines through it and the light bounces back, we can visualize retinal layers. These images are able to communicate vital information about debilitating diseases, such as AMD."

MORE COMMON THAN ALZHEIMER'S

AMD is the leading cause of severe vision loss and legal blindness in Americans age 60 and older. It affects as many as 11 million people in the United States and is predicted to impact nearly 200 million people worldwide by 2020, according to the BrightFocus Foundation. It is twice as prevalent among the elderly as Alzheimer's disease.

Dr. Curcio describes the evolution of OCT technology as starting slowly, with each step being vital to science. In the 1990s, scientists first saw edema, or swelling, in the eye using OCT. Over the years, researchers were able to see more high-definition detail in reflective bands representing layers of the retina. Many bands were labeled in 2001. But without the detailed images we have now, scientists didn't know that the bands don't precisely correspond to the anatomical layers.

Dr. Curcio and her colleague, Richard Spaide, MD, a renowned specialist at Vitreous Retina Macula Consultants of New York, were the first scientists to discover this discrepancy and propose new definitions. As time progressed and OCT achieved higher resolution, scientists were able to see the distinctions between all of the reflective bands. These are now all named for their anatomical layers.

"It's amazing to see the evolution of clinical imaging over the span of time," Dr. Curcio says. "Yes, mistakes have been made in the scientific community, but these mistakes have led to the development of better imaging



"OCT is a non-invasive imaging test that uses light waves to take cross-sectional pictures of the retina and the blood vessels behind it. It's often described like an ultrasound."

– Christine A. Curcio, PhD

technology. With better imaging technology come better tools for physicians and the ability to develop guidelines for clinical trials."

By reviewing OCT images, Dr. Curcio's team has made major discoveries about the pathology of AMD over the years. She aspires to develop an accurate natural history of how the retina degenerates and likens it to studying evolution from the fossil record. Pieces are missing, but her laboratory – with her collaborator K. Bailey Freund, MD, in New York – is still able to make a timeline, like a movie of AMD progression over time, using OCT. If we know how the disease unfolds, she says, we will know when to intervene and save retinal neurons for vision.

"I am an optimist and believe we can beat AMD," Dr. Curcio says. "Although neurons are affected, AMD isn't a primary neurodegeneration like Alzheimer's or Parkinson's disease. How can you not beat a disease that you can so clearly see in living people? Science takes time, but I know we can get there with continued research."

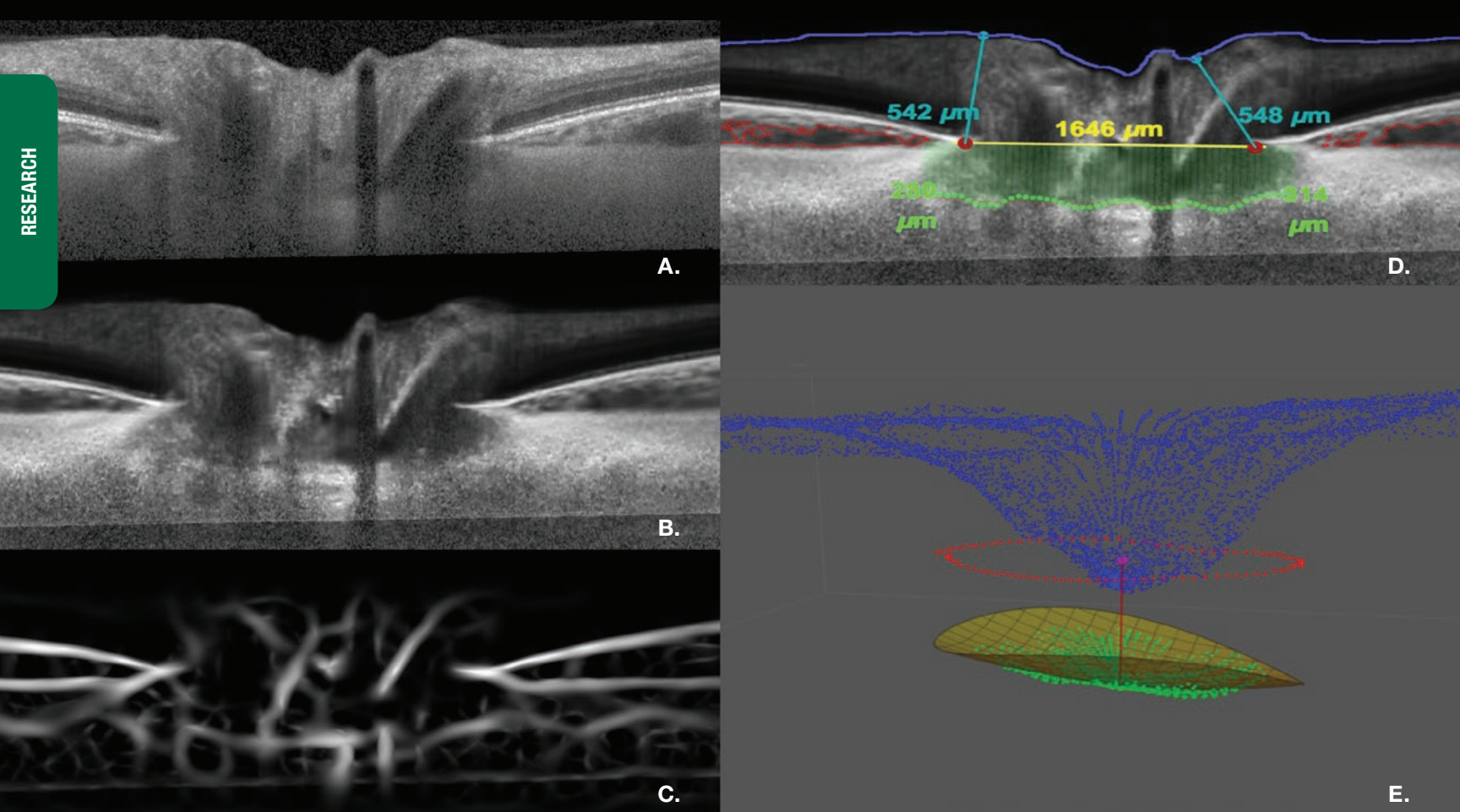


Figure: A) Typical view of the optic nerve of a glaucomatous patient; B) custom-processed and collagen tissue enhanced view; C) enhancement of the structural tissue of the optic nerve head; D) outcome of the auto-segmentation computation; E) 3D quantification of the optic nerve head morphology

Why Are People of African Descent at Greater Risk for Developing Glaucoma?

Massimo A. Fazio, PhD, assistant professor in the UAB Department of Ophthalmology and Visual Sciences, and Christopher A. Girkin, MD, MSPH, received a four-year, \$2.55 million R01 grant from the National Eye Institute to explore how visual field loss – developed with glaucoma – is associated with individual-specific biomechanics of the eye.

This study applies Dr. Fazio's novel computational approaches to a large, multicenter cohort of patients followed in the African Descent and Glaucoma Evaluation Study (ADAGES). Prior studies of this cohort (ADAGES 1 and 2) have defined racial differences in the progression of glaucoma, along with genetic factors (ADAGES 3). This new study will explore the role of the morphological and biomechanical differences in the optic nerve that may explain why individuals of African descent are at greater risk of developing glaucoma.

"The scope of the work aims to uncover how the morphology and biomechanics of the optic nerve head is associated with glaucoma onset and progression," Dr. Fazio says. "Our ultimate goal is to discover a biomarker to help physicians detect glaucoma before the visual field deteriorates, or to identify which individuals are more likely to progress too fast."

Dr. Fazio uses a laser-based technique called optical coherence tomography, or OCT, which allows researchers to capture 3D images of the optic nerve head. This data shows researchers the structural damage in each eye. He has developed novel methods to reveal and quantify structures deep within the optic nerve that are critical in the development of glaucoma.

This grant is a multi-site, multi-primary investigator study, partnering with The University of California San Diego and Columbia University. Dr. Fazio leads the investigation at UAB, together with Dr. Girkin, EyeSight Foundation of Alabama

Chair of the Department of Ophthalmology and Visual Sciences; Linda M. Zangwill, PhD, co-director of clinical research at the Shiley Eye Institute-The University of California San Diego; and Jeffrey M. Liebmann, MD, vice-chair and director of glaucoma services at Columbia University.

“The imaging protocols developed for this study, in collaboration with the OCT manufacturer, Heidelberg Engineering, allow us to uncover 3D structural and biomechanical parameters as no one has ever done before,” Dr. Fazio says. “This has generated a wealth of knowledge and created a large body of data that show there are indeed racial differences in the mechanical behavior of the optic nerve that may put individuals of African descent at greater risk for blindness from glaucoma. The collagen structure and biomechanics are different between the two groups and are therefore correlated with a different rate of damage. This study will define these structural and biomechanical differences in the optic nerve that exist between people of European and African descent and how these differences increase the rate of glaucoma progression and disease susceptibility within this at-risk minority group.”

An example of the computations of the custom methods developed by Dr. Fazio are shown in the figure to the left.

Dr. Fazio has a multidisciplinary background in machine design, experimental mechanics, and biomechanical characterization of soft tissue. He also is a mechanical engineer. He has dedicated his career to developing customized methods of non-contact optical techniques to measure deformations in loaded materials to gain a deeper understanding of the biomechanical properties of ocular tissues. At UAB, with the support of the EyeSight Foundation of Alabama (ESFA), he developed the world’s first dynamic laser interferometer for the measurement of ocular tissue biomechanics with nanometric precision. In 2017, for his research, he received the “Xtreme Research Award” from Heidelberg Engineering and the “Innovator Award” from Wolfram Research. Dr. Fazio holds a primary joint appointment in the Department of Biomedical Engineering.

GENEROUS INVESTMENT, SIGNIFICANT OUTCOMES

In 2003, Dr. Girkin partnered with the ESFA to fundraise for what then was known as the African-American Glaucoma Study. In 2004, the ESFA gave \$200,000 to support the preliminary data collection aimed at developing improved diagnostic methods to detect glaucoma. The ESFA went on to fundraise through a 2003-2006 capital campaign, raising another nearly \$200,000 from 30 donors across Alabama. This \$400,000 total was the baseline support system to expand this research through the ADAGES study.

Since that time in the early 2000s, the impact of this gift has been immeasurable. When these gifts were received, the department had two full-time faculty members in the glaucoma division. This grant alone has brought in approximately \$8 million dollars in competitive federal funding and resulted in over 70 peer-reviewed manuscripts describing improved methods to manage this blinding disease. During this span of time, the glaucoma division has grown to seven clinical and six



Dr. Fazio has recently won the 2017 Wolfram Alpha Innovators Award for biomedical research and the Xtreme Research Award from Heidelberg Engineering for creating a custom clinical imaging protocol for glaucoma patients that provides an estimate of the eye-specific mechanical response to time-varying intraocular pressure.

research faculty dedicated to translational research. This group represents one of the largest concentrations of glaucoma researchers in the country.

WHAT CAN A SMALL GIFT DO?

The ESFA was able to support Dr. Girkin’s vision through philanthropic giving, and we want to continue this legacy for our young researchers. The UAB Department of Ophthalmology and Visual Sciences launched a new program aimed at supporting the scientists who are enabling the creation of new vision treatment options and capturing data to secure larger federal and private grants through the Research Scholars Fund. This fund provides direct support to a distinguished faculty member by offering spendable resources to fund the most promising ideas.

All biomedical discoveries have one thing in common: They begin with a researcher’s idea. However, applications for federal research grants can be completed only after researchers have gathered conclusive data from extensive laboratory studies. Philanthropic support enables ideas to be developed and tested in early studies that can lead to federal funding. Supporting a researcher’s initial investments lays the foundation for the UAB Department of Ophthalmology and Visual Sciences to develop game-changing medical breakthroughs.

If you are interested in learning more about the Research Scholars Fund, please contact Morgan Quarles at nmrobinson@uabmc.edu or 205-325-8112.

New Research Hires



MICHAEL BOULTON, PHD – SUSAN AND DOWD RITTER/RPB ENDOWED CHAIR IN OPHTHALMOLOGY RESEARCH; PROFESSOR

Dr. Boulton has enjoyed a long-standing, highly prolific research career and is widely regarded as one of the world's experts in macular degeneration, neovascularization of the retina, and corneal wound healing. His lab has been extremely well-funded throughout his career, and he has a long track record of significant publications in high-impact journals, as outlined in his curriculum vitae. As evidence of his respect within the field, he recently finished a term as chair of the Biology of the Visual System (BVS) Study Section for the National Eye Institute (NEI). He also serves on the scientific review panel for the Foundation Fighting Blindness, another large nonprofit focused on blinding retinal disease. He has been invited to speak at many national and international meetings and is a preeminent participant in multiple high-profile meetings within his field.



MARIA GRANT, MD – EIVOR AND ALSTON CALLAHAN, MD, ENDOWED CHAIR IN OPHTHALMOLOGY; PROFESSOR

Dr. Grant is a highly accomplished researcher in diabetes and retinal disease. She is an incredibly dynamic scientist who has developed broad research programs focusing on stem cell biology and the microvascular complications of diabetic retinopathy. In pursuing these efforts she's become a leader in these fields, publishing in respected journals and securing significant extramural funding to support her research activities. She currently is funded by the NEI and has a highly fundable score on a second R01 with the NEI. Dr. Grant has authored 195 manuscripts in high-impact, peer-reviewed journals and serves as an editorial reviewer in multiple journals. Her research spans multiple disease areas including diabetic retinopathy, corneal and retinal neovascularization, and retinopathy of prematurity. She is widely recognized as a leader in the use of stem cells for vascular repair, as evidenced by her many invited lectures to preeminent national and international meetings and roles in organizing several major meetings in her field.



LYNE RACETTE, PHD, ASSOCIATE PROFESSOR

Dr. Racette completed her PhD in experimental psychology at Carleton University in Ottawa, Canada, and her postdoctoral fellowship at the University of California San Diego. She then went on to become an assistant professor at Indiana University in 2010. Now, as an associate professor with the UAB Department of Ophthalmology and Visual Sciences, Dr. Racette leads a research team focused on improving the detection of change in glaucoma. Her work continues to be funded by the National Institutes of Health as well as private sources. She has developed a model to assess glaucoma progression that jointly uses structural and functional data. Dr. Racette is an advocate for diversity in science and has served as the chair of the Diversity Initiatives Committee of the Association for Research in Vision and Ophthalmology.

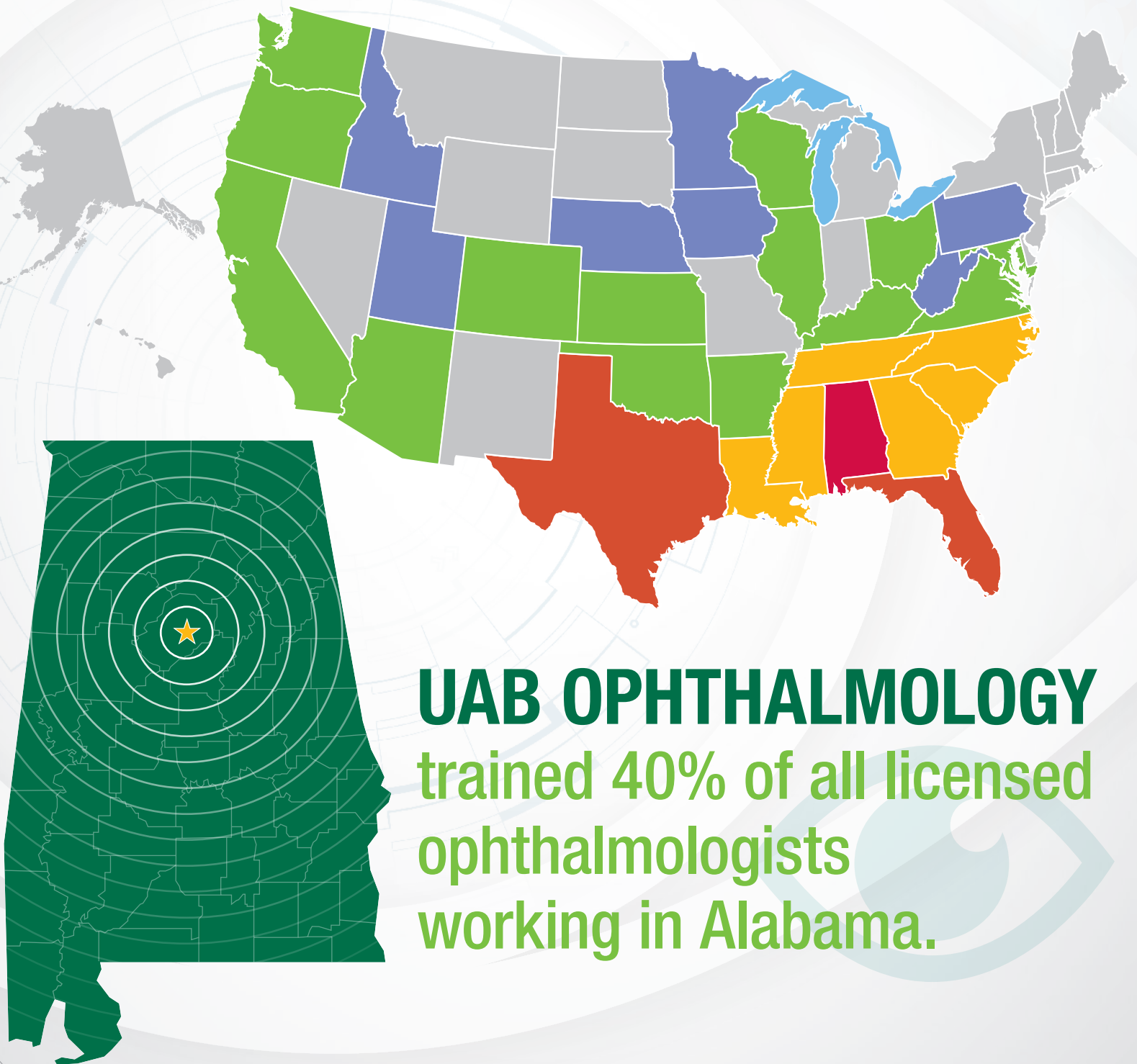
EDUCATION



UAB Ophthalmology provides comprehensive training programs for medical students, residents, and fellows. It is the only ophthalmology training program in the state and offers an exceptional foundation of knowledge for the next generation of ophthalmologists. The well-rounded program provides trainees the experience needed to excel in any area of ophthalmology by translating knowledge from the bench to the bedside.

UAB OPHTHALMOLOGY

trained 289 ophthalmologists practicing in 138 cities across the United States.



UAB OPHTHALMOLOGY
trained 40% of all licensed
ophthalmologists
working in Alabama.

Residents and Fellows

THIRD-YEAR RESIDENTS



Peter Daniel, MD



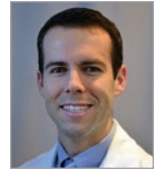
HongVan Le, MD



Katherine Orman, MD
Chief Resident



Kristen Peterson, MD



Arthur Stanley, MD
Chief Resident

SECOND-YEAR RESIDENTS



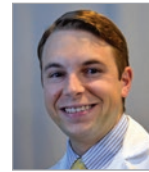
Bernard Dib, MD



Robert Knox, MD



Richard Martindale, MD



Alex McGaughy, MD



Nishi Shah, MD

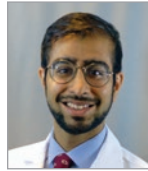
FIRST-YEAR RESIDENTS



Crystal Daigle, MD



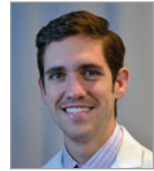
Setu Patel, MD



Amol Sura, MD



Jeffrey Tapley, Jr., MD



Robert Wann, MD

FELLOWS



Carson Bee, MD
Glaucoma



Adam Quinn, MD
Glaucoma



Kevin Bray, MD
Retina



Logan Christensen, MD
Retina



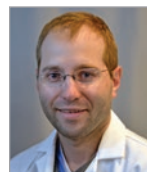
Andrew McFarland, MD
Retina



David Neely, MD
Retina



Kevin Wells, MD
Retina



Joseph Armenia, MD
Oculoplastics



Elizabeth Cameron, OD
Optometry Fellow



First-year resident Crystal Daigle, MD, performs an exam on a patient.

Lions Clinic Enables Real-World Training

The Lions Eye Clinic serves patients through providing eye exams, referrals for low-vision assistance, and other important services for patients in need of eye care. Last year alone, the Lions Clinic served more than 4,000 Alabamians.

The clinic's mission is to provide exceptional patient care, and a vital component of that is providing real-world training to future ophthalmologists. During training, residents rotate through the Birmingham Veterans Affairs (VA) Hospital and Cooper Green Mercy Clinic. This is accomplished with the help of the administrative and technical staff support that is needed to run a professional clinic. While these changes benefit third-year residents, the clinic also trains first-year residents and medical students.



The Lions Eye Clinic served more than 4,000 Alabamians in 2017.

With the rotation in the Lions Clinic, the UAB Ophthalmology Residency Training Program has set forth a vision for training that affords third-year residents an experience akin to a private practice that they run, setting them up for success when they enter practice.

“The Lions Clinic provides an excellent training experience in diagnosis and management of a wide range of advanced pathology in an autonomy-supported environment,” says Crystal Daigle, MD, a first-year ophthalmology resident.

The Department of Ophthalmology and Visual Sciences recently assumed managerial responsibilities for the Lions Clinic including staffing and providing the EHR system. Russell W. Read, MD, PhD, the Max and Lorayne Cooper Endowed Professor in Ophthalmology Residency Training, says with this transition, the Lions Clinic now is

like any other clinic of Callahan Eye Hospital and provides more efficiency in terms of staffing and coverage.

“When residents graduate from the Department of Ophthalmology and Visual Sciences Residency Training Program, they either begin a fellowship for specialized study or they enter private practice,” Dr. Read says. “Those who enter private practice typically go directly into a high-volume clinic setting and need these skills to succeed in a modern eye clinic. The Lions Clinic gives them that opportunity.”

To ensure ready access to attending supervision, Dr. Read relocated his uveitis clinic to the Lions Clinic. He says the department wants residents to have enough autonomy to develop their own skills, but it is also important that they have access to an attending.

INVESTING IN EXCELLENCE

Alabama Lions Sight is a program of the Lions Clubs of Alabama that promotes sight conservation through research, education, detection, and treatment. It funds much-needed eye care services and provides vision screenings for thousands of children and adults each year.

Since the founding of UAB Callahan Eye Hospital, the Lions Clubs of Alabama has helped provide quality eye care to low-income citizens in our community. Together, we have helped change the lives of Alabamians and opened their eyes to the future.

VISIT ALSCA.ORG TO LEARN MORE.

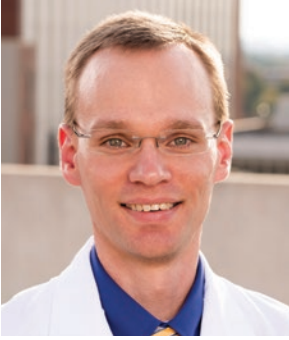


Brian Samuels, MD, PhD, and Lacinda Riesland train fellow Adam Quinn, MD, using high-definition personal cameras.

GoPro Cameras Used in Innovative Microsurgery 3D Video Training Project

Call it a hack, a workaround, or cutting-edge photography. Brian Samuels, MD, PhD, an associate professor at UAB School of Medicine's Department of Ophthalmology and Visual Sciences, has adapted inexpensive video cameras to create 3D training videos for surgeons. This unique innovation may soon be extended to other service lines across UAB Medicine.

Portable ophthalmic imaging already is seen as a profound technological development. In addition to recording surgical procedures for teaching and training residents and fellows, tele-ophthalmology networks are growing both in developed and developing countries. However, a critical factor in expanding the clinical use of such high-resolution imaging is in



Brian Samuels, MD, PhD

making the process portable, easy to use, and — most significantly — cost-effective. Accordingly, there's been interest in adapting non-ophthalmic imaging devices that are readily available, easy to use, and relatively inexpensive for ophthalmic use.

The ideal camera system is affordable, user-friendly, and captures the surgeon's view without interrupting the proceedings of the surgery. GoPro Inc. manufactures and markets high-definition personal cameras often used in extreme action video photography. Compact, lightweight GoPro cameras can capture still photos or video in high definition through a wide-angle lens and can be configured to work automatically with minimal intervention or controlled remotely.

Dr. Samuels adapted this existing technology for training surgical residents at UAB Medicine. In this case, the technique has been utilized to create 3D imagery, which provides the benefit of visual depth. The method has been submitted for a UAB Medicine Innovation Award.

“Some of the most innovative ideas don't create a new product,” Dr. Samuels says. “Instead, they simply apply existing technology in novel ways to generate paradigm shifts. Our Microsurgery 3D Video Training project is this type of innovation. Becoming a successful microsurgeon requires exceptional fine motor skills and the ability to learn a series of coordinated movements in a tight, three-dimensional space, such as inside of the eye.”

WHY IT'S BETTER

Currently, most microscopic surgical procedures are recorded from one microscope eyepiece, producing videos in 2D format and therefore lacking critical depth information. Using commercially available GoPro technology and an innovative platform to deliver the 3D videos with stereoscopic depth perception, surgical resident and fellow training can be significantly accelerated. The 3D imagery allows observers to visualize the surgery as if they were the actual surgeon or review their own cases with a faculty member after performing the surgery.

The technique electronically links two GoPro cameras so that video capture by each camera is perfectly synchronized. The cameras are then mounted to either the left or right microscope eyepiece to record simultaneous videos during the surgery. Dr. Samuels has collaborated with Lacinda Riesland, the executive director of IT infrastructure at Callahan Eye Hospital, to use commercially available video editing software to produce

“Some of the most innovative ideas don't create a new product. Instead, they simply apply existing technology in novel ways to generate paradigm shifts. Our Microsurgery 3D Video Training project is this type of innovation. Becoming a successful microsurgeon requires exceptional fine motor skills and the ability to learn a series of coordinated movements in a tight, three-dimensional space, such as inside of the eye.”

— Brian Samuels, MD, PhD

a 3D video version of the surgery for later viewing via 3D projector, monitor, television, or headset.

This project is considered innovative because it uses existing technology to create a high-quality teaching tool at low cost. Although there is hardware/software available to produce 3D videos directly from microscopes, implementation is prohibitively expensive and generally specific to the microscope vendor.

Dr. Samuels anticipates that the project will be scalable to ENT and Neurosurgery as those service lines begin operating at UAB Callahan Eye Hospital this year.

“This technology can be disseminated to the main UAB ORs in the future,” Dr. Samuels says. “In addition to resident training, this tool can also be adopted by other service lines to promote more effective education to medical students rotating on the service, new surgical support staff assisting with cases, or clinical colleagues learning new techniques.”

Currently, this project positively impacts the organization in several ways. First and foremost, it accelerates and enhances resident and fellow education. Secondly, as residents and fellows learn more quickly, patient safety is improved by limiting intraoperative complications.

Dr. Kline Stresses the Importance of Relationships

Lanning B. Kline, MD, professor and former chairman of the UAB Department of Ophthalmology and Visual Sciences, remembers his youth in Alberta, Canada. His father was the proprietor of a successful jewelry store and would enlist his son's help during busy holidays. Dr. Kline's father was trained as an optometrist but never practiced. Instead, he took over the family jewelry business.

"What I learned from my father was that business is all about relationships," Dr. Kline says. "What I learned from my mother was that I wasn't going into the jewelry business."

Dr. Kline knew from an early age that he would either go into law or medicine. His father's best friend was a cardiologist who served as a role model during his early years, and Dr. Kline would spend Sundays listening to his father and this cardiologist talk about what's important in life. These discussions had a major influence on him. One summer, while at home from Duke University School of Medicine, he followed this family friend around his clinic to learn more about the daily routine of a physician. The physician-patient conversations were very impactful for Dr. Kline.

"He could explain medical things clearly to his patients in an uncomplicated manner," he recalls. "You could just see that his patients loved him. What I learned is to treat everyone like they are your family. Take the time and explain to your patients what is going on without any fancy words. In medical school, we are often taught how to prescribe this medication and treat that patient, but we often overlook how physicians care for and talk to a patient. I think that is a really important part of medicine that isn't adequately taught in medical school. Some physicians can be the best surgeon but have a poor bedside manner. Teaching communication and professionalism are important when mentoring residents."

When Dr. Kline was in active practice at UAB, he emphasized to residents the importance of communication, compassion, and fostering relationships. He has seen many years of evolution in residency education. Libraries that once were the cornerstone of information have been replaced with tablet computers, but Dr. Kline continues to teach the importance of building relationships with patients, much like he saw years ago when shadowing his father's friend.

ONGOING ROLE IN THE DEPARTMENT

Dr. Kline stepped down as chairman in 2011 but remains



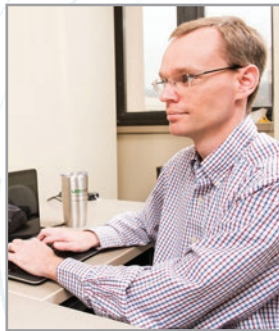
Lanning B. Kline, MD

on the faculty, continuing to see patients and teach residents. This allows him to continue playing a role in the department's continued growth and evolution.

"Our residency training program has always been top-notch, as we provide outstanding clinical training," Dr. Kline says. "The Lions Eye Clinic serves as a residency training clinic and is an excellent resource that served over 4,000 Alabamians last year alone. UAB Callahan Eye Hospital houses 16 operating rooms for surgical exposure, making it one of the largest eye facilities in the U.S. These are the fundamentals of ophthalmology residency education, but I still teach every resident that relationships and communication are vital to comprehensive patient care."

Dr. Kline and his wife, Ricki, celebrated their 40th wedding anniversary in April 2017. He has two children and one grandson. His son, Aaron, and his wife live in San Diego with their four-year-old son, Andrew. Dr. Kline's daughter, Evelyn – named after Kline's late mother – was married in Seattle in July 2017. He still dedicates his spare time to medicine and serves as editor-in-chief of the *Journal of Neuro-Ophthalmology* and on the board of directors of the American Board of Ophthalmology.

PATIENT CARE





Priscilla Fowler, MD, uses TrueTear on a patient.

Callahan Offering New Treatment for Dry Eye

UAB Callahan Eye Hospital and Clinics recently began offering an innovative new treatment for dry eye called the Allergan TrueTear Intranasal Tear Neurostimulator, which temporarily increases tear production using electrical stimulation.

Dry eye is a complex disease that has no cure, and the average patient requires multiple treatments. Some patients only see symptom relief after trying multiple therapies such as lid hygiene, heat masks, thermal pulsation, topical anti-inflammatories, and amniotic membranes. Early diagnosis and prompt treatment of dry eye can prevent damage that can lead to severe discomfort and vision problems later in life.

TrueTear is a non-invasive, nasal neurostimulation device that helps the body naturally produce tears through comfortable stimulation of the trigeminal nerve, which activates the entire lacrimal functional unit. The handheld stimulator features daily disposable tips, which are inserted into the nasal cavity. This produces natural tears that contain meibum from the meibomian glands, aqueous from the lacrimal glands, and mucin from goblet cell degranulation.

The treatment may be used as frequently as needed, depending on specific needs for dry eye relief, and it empowers patients to manage any signs and symptoms of the condition. Neurostimulation is a medical technique used in other areas, such as pain control and movement disorders. Pacemakers and cochlear implants for hearing loss are two common examples of neurostimulation devices. However, the technology is new to eye care, says UAB Callahan Eye Hospital Ophthalmologist Priscilla Fowler, MD.

“We are very excited to be able to offer novel therapies for dry eye,” Dr. Fowler says. “This allows us to really tailor the therapy to the patient’s needs and lifestyle, and we feel we are achieving much greater success than ever before.”

In Alabama, TrueTear is only available from Dr. Fowler at Callahan’s Dry Eye Clinic. The device was developed by a team of experts at Stanford University led by Michael Ackermann, PhD. It represents a new treatment class in eye care, as it is the first and only FDA-approved device that temporarily increases natural tear production in adult patients.

Dr. Samuels Named Chief of Staff, Director of Glaucoma Division

Brian C. Samuels, MD, PhD, associate professor in the UAB Department of Ophthalmology and Visual Sciences, has been named director of the Glaucoma Division and chief of staff of UAB Callahan Eye Hospital. Dr. Samuels completed his residency training at UAB, followed by clinical and research fellowships in glaucoma at Duke University. Since his fellowship, he has established a reputation in the glaucoma field as an outstanding clinician-scientist.

Dr. Samuels has built a successful research program since joining the UAB faculty. He is the primary investigator or co-primary investigator on three NIH grants and recently was awarded the prestigious Research to Prevent Blindness Physician-Scientist Award. His research focuses on identifying how the brain controls pressure inside the eye and brain. This is important because an imbalance in these pressures is thought to be a leading cause for the development and progression of glaucoma. He also works to develop novel research models aimed at accelerating the pace of new discoveries in the field of glaucoma research.

In addition to his own work, he collaborates with many of the leading glaucoma research experts, both on campus and nationwide. Of note is his collaboration with Georgia Tech and NASA that seeks to understand why astronauts who spend long periods of time in space are experiencing vision problems. While much of his focus is devoted to glaucoma research, Dr. Samuels also maintains an active clinical and surgical practice. He sees general ophthalmology patients, but his specific area of expertise is the diagnosis and management of glaucoma patients.

“I look forward to working with Dr. Samuels in his new roles as director of the UAB Glaucoma Division and chief of staff at the Callahan Eye Hospital,” says Christopher A. Girkin, MD, MSPH, FACS, EyeSight Foundation of Alabama Chair in the UAB Department of Ophthalmology and Visual Sciences. “As a practice partner and research



Brian C. Samuels, MD, PhD

collaborator, I have had the opportunity to see Brian develop into an accomplished clinician-scientist. He directs a well-funded, productive basic science laboratory and maintains a busy clinic practice delivering care to patients with complex glaucomatous disease. In addition, he is well respected by the faculty, residents, and staff within the department and among the community physicians. Dr. Samuels' previous research, clinical, and administrative experiences have positioned him to lead our growing Glaucoma Division, which now consists of seven fellowship-trained clinicians and clinician-scientists in addition to six faculty researchers. I am confident he will excel in these new roles and be a key leader in our continued success.”

An Uncommon Diagnosis and Successful Surgery for Jacob Farley

In fall 2017, Crista Farley noticed what she thought was a bruise on the left eyelid of her three-year-old son, Jacob. The bump got bigger over time and took on a blue, marble-shaped appearance, so the family took Jacob to a pediatrician, who then referred him to UAB Callahan Eye Hospital.

At Callahan, Jacob was seen by Sarah Jacobs, MD, an assistant professor in the UAB Department of Ophthalmology and Visual Sciences, who diagnosed him with pilomatrixoma.

Pilomatrixoma is a benign tumor of the hair follicle that occurs most often on the head, neck, arms, or torso; formation on the eyelid is extremely rare. These tumors usually appear reddish or blue due to dilated blood vessels, and white nodules may be seen through the skin.

“Orbital pilomatrixoma is an uncommon, benign tumor that arises from the hair follicle cells,” Dr. Jacobs says. “If left untreated, the tumor will enlarge over time, and very rarely it can transform into a cancer called pilomatrix carcinoma. Research has shown that there is a greater than 95 percent chance of a permanent cure for pilomatrixoma with complete surgical removal, and this is the course of treatment we chose for Jacob.”

The surgery was successful, and the nodule was removed. Jacob was able to recover at home without further treatment, and his vision was not affected.

“My son received excellent care at UAB Callahan Eye Hospital, from both the staff and Dr. Jacobs,” Crista says. “They were so kind and really cared about his recovery. I couldn’t have asked for a better surgeon.”



1. Jacob in his Halloween costume before the surgery. The pilomatrixoma is noticeable on his eyelid.
 2. Jacob just prior to surgery at UAB Callahan Eye Hospital.
 3. Jacob enjoys opening Christmas presents after his successful surgery.

PHILANTHROPY



Donor Spotlight: Research Support Fund Renamed to Honor Grandson



Yoder with his grandson, Hank

Steve Yoder's grandson, Henry "Hank" Hollis, was born three weeks early in February 2017. A few weeks after he was taken home from the hospital, Hank wouldn't wake up. His head had begun to swell, and it was obvious that something serious was happening, says Yoder, associate provost at UAB, an assistant professor at UAB's Collat School of Business, and a member of the boards of directors for both the Callahan Eye Hospital Health Care Authority and the EyeSight Foundation of Alabama.

It took some time to diagnose Hank, but doctors at Children's of Alabama eventually discovered the problem. Hank had toxoplasmosis, a rare parasitic infection that can be transmitted to the child during pregnancy. Toxoplasmosis also can affect vision.

Hank was in intensive care for several weeks. His brain swelled again while recovering, and he underwent emergency neurosurgery to relieve it. At the time, the

family was told that if he went six months without anymore swelling, then the surgery would be considered a success; Hank passed this milestone in late 2017. He remains under the care of multiple specialists, including an infectious disease physician, endocrinologist, and neurologist. UAB ophthalmologists Martin Cogen, MD, and Martin Thomley, MD, are helping ensure that Hank's vision is protected and preserved as best as possible.

"You can tell he isn't quite seeing normally, but he's a happy baby," Yoder says. "He enjoys watching 'Wheel of Fortune' because of all the colors on the wheel. This gives us hope because we know he's seeing something. It might not be perfect vision, but he can see something."

HOPE FOR THE FUTURE

The family is aware that Hank's vision in at least one eye will be limited but remains hopeful that the other eye will function normally. As he passes his first birthday, much is still undetermined regarding Hank's health and course of treatment. One thing is certain for Yoder and his family, though: They are grateful for the care Hank received and optimistic about his future.

Several years prior to Hank's birth, Yoder and his wife, Louise, created a research fund called the Stephen and Louise Yoder Fund in Ophthalmology. Yoder says it was important to his family that the fund be renamed the Henry M. Hollis Support Fund in Ophthalmology, with the objective of funding pediatric eye research.

"Research is vital. It makes for better patient care, and we want other families to have the same hopeful, positive results we are praying for," Yoder says. "We sometimes take it for granted that physicians know all they need to know about medicine, but this isn't the case. Accomplishments and achievements in science can only be made through research, and this is why we give. Research provides hope when the doctors don't have all of the answers. We feel that helping fund research is a gift of hope for the future."

To learn more about supporting the Henry M. Hollis Support Fund in Ophthalmology, please contact Morgan Quarles at nmrobinson@uabmc.edu or 205-325-8112.

Endowed Chair Established to Honor Callahan Eye Hospital Founder



Alston Callahan, MD



Eivor Callahan

In his 80s, Alston Callahan, MD, went on an epic sightseeing quest. He walked across Manhattan Island. He swam the Yazoo Canal. He explored Timbuktu. For his 83rd birthday, he visited the North Pole. The following year, he traveled to the South Pole.

Throughout his long career, Callahan was dedicated to another kind of quest. He performed reconstructive eye surgery during World War II, pioneered ophthalmologic plastic surgery, and served as the first chair of the UAB Department of Ophthalmology and Visual Sciences. In 1963, he founded the Eye Foundation Hospital, the first facility in Alabama dedicated to the care and treatment of the eye.

UAB purchased the hospital in 1997, later renaming it UAB Callahan Eye Hospital. The same year the hospital was purchased, Dr. Callahan – along with his son, Michael Callahan, MD, Loris Rich, and Charles Kelman, MD – founded the Birmingham-based International Retinal Research Foundation. The IRRF is dedicated to furthering research that seeks to cure blinding eye diseases such as macular degeneration. Since 1998, the organization has granted more than \$18 million to support scientific research into diseases of the eye.

In memory of Dr. Callahan, who passed away in 2005, and his wife, Eivor, who passed away in 2002, the IRRF has committed a gift to establish the Eivor and Alston Callahan, MD, Endowed Chair in Ophthalmology. “All of

us here at the IRRF are excited to endow this chair, not only in Dr. Callahan’s honor but also in honor of his wife and trusted confidant, Eivor, who supplied the support and strength that was needed for such a lifetime of accomplishments,” says IRRF Executive Director Sandra Blackwood.

“When I was growing up, the UAB Callahan Eye Hospital was my dad’s magnificent obsession. Our whole family life centered on the building of the hospital, which now stands as a brick-and-mortar testament to his passion,” says IRRF President Michael Callahan, MD, Dr. Callahan’s son and a professor in the UAB Department of Ophthalmology and Visual Sciences. “I thought – and the board agreed with me – that now was the right time to make an advancement in the march to find causes and treatments for blinding conditions by funding an endowed chair in his and my mother’s names. There’s nothing they would be prouder of.”

Dr. Alston Callahan is credited with raising more than \$40 million in his lifetime toward providing eye care to Alabamians in need. The effects of Mrs. Callahan’s and his personal philanthropy can be seen across Birmingham. They bequeathed a large collection of Asian art to the Birmingham Museum of Art and helped fund its annual Eivor and Alston Callahan Lecture Series, which focuses on Asian art. Dr. Callahan also was the driving force behind acquiring “Complex Vision,” the kinetic sculpture by Israeli artist Yaacov Agam that adorns the facade of UAB Callahan Eye Hospital.

“We are immensely grateful for the longtime support of the IRRF,” says Christopher Girkin, MD, the EyeSight Foundation of Alabama Endowed Chair of Ophthalmology and Visual Sciences. “Over the years, it has enabled us to fund an array of innovative research of blinding diseases. Now, the Eivor and Alston Callahan, MD, Endowed Chair in Ophthalmology will help us attract more world-class researchers to join our nationally ranked program, and it will honor the memory of Dr. and Mrs. Callahan for generations of faculty to come.”

A Lasting Legacy through Art



Miles Alston Callahan

In March 2017, UAB Callahan Eye Hospital expanded its operating room capacity from nine to 16 operating rooms, making it one of the nation's largest eye facilities. With this expansion came more efficient operating room workflow for doctors, nurses, staff, and patients, along with improved integration of care with the Callahan Eye Hospital clinics.

As patients and visitors enter this newly renovated space, they will notice a small replica of the kinetic sculpture that adorns the side of the hospital that faces University Boulevard. "Complex Vision" was created by Yaacov Agam for UAB Callahan Eye Hospital. Alston Callahan, MD, the founder of the hospital, was the primary force behind acquiring "Complex Vision," as he had a passion for art and helping people with eye disease.

The "Complex Vision" replica is dedicated in memory of Miles Callahan, the grandson of Alston Callahan, MD, and the son of Michael Callahan, MD. Miles passed away on July 4, 2015, at the age of 37.

Miles was born on April 24, 1978, the first of five children for Michael. He recalls the time they would spend together in the hospital in the early 1980s.

"I would operate on Fridays and come back on Saturday morning for rounds, and Miles would come with me," Michael Callahan says. "He was such a bright, outgoing child who would really only sit still when you gave him chocolate milk and sat him in front of cartoons. The nurses all knew him, so they would pile him up on a hospital bed with cartoons and milk. He was a bit of a staple during Saturday mornings at the hospital."

Miles attended Brevard College in North Carolina and moved back home to Birmingham to become a banker. He married Mandy, and together they had two beautiful daughters: Koco, age 11, and Coley, 9.

"After Miles passed away, gifts and donations in his memory just started coming into the hospital," Michael says. "Witnessing this type of generosity and seeing the

impact he had on people just blew me away. We started to discuss ways to honor his memory and what he meant to our family and the hospital, and we came up with the idea of the 'Complex Vision' replica. He was such an integral part of my experience here at the hospital, as he spent so many hours here as a child. My father, and Miles' grandfather, was the reason we have 'Complex Vision' outside the building, so it only made sense that we continued this family legacy of vision restoration depicted through art."

Patients and visitors will notice the replica with a commemorative plaque that reads:

Miles Alston Callahan

The kinetic sculpture to your right is a smaller replica of the Yaacov Agam sculpture "Complex Vision" that decorates the front of the UAB Callahan Eye Hospital. This new piece was given in memory of Miles Alston Callahan, the grandson of Callahan Eye Hospital founder Alston Callahan and son of distinguished ophthalmologist Dr. Michael Callahan and his wife Teresa. Miles passed away in 2015 at the age of 37.

Miles was a wonderful father and known for his passionate love and devotion to daughters; and he was known for his undying love, loyalty, and service to his family and friends. Once a friend of Miles, you were his friend for life. His open heart accepted all people and his faith remained strong throughout his life. Miles touched the lives of everyone he knew, and leaves a lasting legacy with his friends, family, and colleagues.

Mr. Agam, often called the father of Kinetic art, created "Complex Vision" in 1976 and supervised the creation of this new piece for Callahan Eye Hospital. As the primary force behind the hospital acquiring the original sculpture, Alston Callahan's love for art and commitment to helping people with blinding eye disease is a fitting memorial for Miles.

Michael Callahan, MD, operates his own private practice, Callahan Eye Clinic PC, and is the Director of the UAB Oculoplastics Division as a member of UAB Faculty.

UAB School of Medicine Honors EyeSight Foundation of Alabama



1. Selwyn M. Vickers, MD, UAB senior vice president for medicine and dean of the UAB School of Medicine; John Coleman, ESFA chair; Torrey DeKeyser, ESFA executive director; Ray Watts, MD, UAB president
2. Selwyn M. Vickers, MD, UAB senior vice president for medicine and dean of the UAB School of Medicine; Hartwell Davis, ESFA board member; Jim Davis, Visionary Award recipient; and Ray Watts, MD, UAB president
3. Clarence Blair, Visionary Award recipient
4. Ricki Kline, and Christopher Girkin, MD, EyeSight Foundation of Alabama chair

The EyeSight Foundation of Alabama (ESFA) was honored on Sept. 12, 2017, by the UAB School of Medicine at the Woodward House in recognition of the group's significant philanthropic commitment to UAB over the past 20 years. During that time, ESFA has graciously donated more than \$60 million in philanthropic support to a variety of areas including research, education, and patient care for the UAB Department of Ophthalmology and Visual Sciences, UAB Callahan Eye Hospital, the UAB School of Medicine, and the UAB School of Optometry.

Speakers at the ceremony included UAB President Ray L. Watts, MD, and Selwyn Vickers, MD, UAB senior vice president and dean of the UAB School of Medicine. President Watts and Dean Vickers honored ESFA with the Partnership Recognition Award, commemorating 20 years of support for both UAB and Callahan Eye Hospital. Accepting the award on behalf of ESFA was Torrey DeKeyser, ESFA executive director, and John Coleman, ESFA chair.

During the event, two honorees became recipients of the seventh and eighth ESFA Visionary Awards. One was presented to Clarence Blair, chair of the board of the Eye Foundation Hospital (later renamed UAB Callahan Eye Hospital) at the time UAB purchased it in 1997. The other was awarded to James "Jim" Davis, the first chair of the Alabama Eye Institute (later renamed the EyeSight Foundation of Alabama), the grant-making foundation established from the sale of the hospital. Congratulations to both 2017 Visionary Award recipients.

In addition to its support of UAB, the ESFA has awarded grants to more than 35 nonprofit organizations in Alabama that help fulfill its mission to serve as a catalyst for improving eyesight through education, research, and access to care.

Vision for the Future

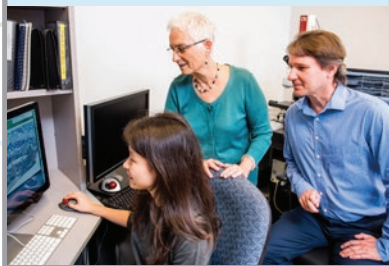
UAB Ophthalmology has a bright outlook for the future. As proud as we are of our accomplishments thus far, we truly believe the most meaningful advancements are yet to come and within our grasp.

The support of visionary philanthropic partners provides the potential for major breakthroughs in the treatment and care of blinding disease. With your support, we can achieve a brighter, healthier future.

OUR PRIORITIES

FACULTY SUPPORT

Foster an environment of collaboration and innovation by retaining and recruiting top physicians and scientists



RESEARCH AND INNOVATION

Accelerate the pace of discovery and efficiently translate key findings from bench to bedside



RESIDENT EDUCATION

Equip the next generation of ophthalmologists with a high degree of skill and lifelong thirst for knowledge



ENHANCING FACILITIES

Expand access to the highest-quality patient care and research through focused enhancements to facilities



PROGRAMMATIC SUPPORT

Strengthen our outreach programs that serve the needs of the community



Thanks to support from donors large and small, we have made significant progress toward our ultimate goal of improving health by alleviating blinding disease. This generosity has served as a catalyst in the following key areas:

- INNOVATIVE RESEARCH**
 Support for innovative ideas allowed investigators to launch promising new research programs.
- YOUNG SCIENTISTS**
 Philanthropic commitment jumpstarted the early stages of promising careers for young scientists.
- TOP TALENT**
 Gifts attracted world-class research talent to UAB.
- EDUCATION AND TRAINING**
 Investments in education enhanced training for the next generation of ophthalmologists.
- ADVANCED PATIENT CARE**
 Facility and equipment improvements provided the latest in vision care to patients at all income levels.

Seeing the Impact



the CAMPAIGN *for* UAB

GIVE SOMETHING | CHANGE EVERYTHING

"I truly hope you have enjoyed the 2017 UAB Department of Ophthalmology and Visual Sciences Annual Report. Our achievements would not be possible without our philanthropic partners. Your continued support will play an instrumental role in helping shape the future of the UAB Department of Ophthalmology and Visual Sciences and Callahan Eye Hospital. I invite you to partner with UAB Ophthalmology, and we thank you for your support. When you give something, you can change everything."

Morgan Quarles

Morgan Quarles
Development Officer

The \$1 billion Campaign for UAB is a visionary plan to align our resources with our aspirations and includes significant support for the School of Medicine. While strengthening our position as one of the nation's most productive and dynamic academic medical centers, the Campaign's success will change the world through the knowledge we teach, discover, and translate into patient care.

1B

CAMPAIGN GOAL: \$1 BILLION

As of December 31, 2017

← **\$857,591,948**

← **\$553,395,432***

**Funds contributed by UAB School of Medicine Supporters*

HOW TO HELP

Contact us to learn more about where your help is needed most.

MORGAN QUARLES, DEVELOPMENT OFFICER

Phone: 205.325.8112 • Email: nmrobinson@uabmc.edu
1720 University Boulevard, Suite 601 • Birmingham, AL 35233

WAYS TO GIVE:

Make a gift online, a simple and secure way to make an immediate impact: uabmedicine.org/perspective

Speak with our development office: **205.325.8112**

Mail in your gift: **1720 University Blvd., Suite 305 • Birmingham, AL 35233**

COMMUNITY OUTREACH



UAB Ophthalmologists Develop Exam Kit to Help EMS Deal with Eye Trauma

Some 2.5 million eye injuries occur in the United States every year, and nearly 1 million of those patients present to emergency rooms or eye trauma centers. Because many eye injuries are first encountered by emergency medical services (EMS) professionals, there is a need for reliable pre-hospital assessment, triage, and initiation of treatment.

UAB ophthalmologists C. Douglas Witherspoon, MD, David Neely, MD, and Kevin Bray, MD, developed a standardized examination system for EMS professionals to conduct on-site emergency evaluations of patients with eye injuries. The system emphasizes quick recognition and practical classification of eye injuries rather than exact diagnoses, and it helps EMS teams make timely decisions that can better prevent overall vision loss and long-term disability.

Dr. Witherspoon, a vitreoretinal and ocular trauma surgeon who was instrumental in securing Callahan Eye Hospital's Level 1 Ocular Trauma Center designation in 2011, currently co-directs the UAB Vitreoretinal Fellowship Training Program. Drs. Neely and Bray are senior fellows in that program. They recognized an opportunity to improve and standardize the methods EMS professionals use for emergency triage and treatment of eye injuries, drawing upon feedback the doctors received during annual lectures given to regional EMS professionals. Dr. Witherspoon noticed that even experienced EMS professionals commonly experience apprehension when dealing with eye injuries.

"These EMS teams see every kind of severe trauma in the field, and they aren't afraid of much," Dr. Witherspoon says. "But the reason that eye trauma causes so much concern is that they are uncertain how to proceed. They would often tell me they would rather deal with a heart attack, bad limb injury, or severe bleeding than treat an eye injury. Hearing that over and over made me suspect that our lectures on ocular trauma, which we have been presenting to EMS professionals for about 10 years now, weren't having the beneficial effect we had anticipated. So we decided to change the information to focus on the techniques and methods specifically designed for EMS professionals, rather than continue to detail the techniques ophthalmologists employ. We also decided to develop training videos and to make them available online in order to allow for repetition and individually paced self-training."



David Neely, MD (seated), and C. Douglas Witherspoon, MD

NARROW TREATMENT WINDOW

Dr. Neely notes that the doctors also saw the need for standardization.

"Sometimes a patient might be taken to a general ER that was not appropriate for the level of trauma they had experienced," Dr. Neely says. "We're trying to eliminate that because it uses valuable time, since there's usually a specific window of opportunity to provide effective treatment. On the other hand, if EMS assessment shows that there is no need to visit the eye trauma center, that's equally useful information. We could see that, with so many cases all being handled differently, standardization would be essential."

Dr. Bray says a standardized approach is immediately beneficial to patients.

"Patients are understandably frightened whenever they have an eye injury, and that can be a difficult situation to manage in the field," Dr. Bray says. "Having a

standardized way to approach eye problems gives EMS providers the confidence to sort non-emergent injuries from those that need a higher level of care. A standard approach not only allays patient fears, it also saves time and vision.”

Eye trauma often is accompanied by other traumatic injuries and easily can be overlooked, especially in pre-hospital settings where rapid stabilization and transport take priority. Therefore, the most important management principle is to protect the eye from further trauma during transport. Moreover, alerting hospital providers to possible eye injuries prompts them to continue appropriate shielding to prevent further damage and initiate definitive treatment once the patient is at the hospital. Through expert recognition and initiation of pre-hospital treatment, EMS providers can maximize a patient’s recovery from an eye injury.

“An initial evaluation is essential in determining the severity of an eye injury,” Dr. Witherspoon says. “The next step is to provide emergency treatment and stabilization and finally triage to the appropriate fixed treatment facility. Our eye emergency treatment manual includes algorithms we have established to assist in deciding how and when one should go through those steps.”

CONFIDENCE-BUILDER

To that end, Dr. Witherspoon and his team created an

organized and reproducible on-site eye examination system. They produced videos of emergency on-site examinations, wrote a detailed manual, and devised an accessory examination kit, which is an inexpensive, eye-specific set of examination tools that most EMS professionals generally don’t have at their disposal. The video and manual go through an examination sequence explaining exactly how each of the tools should be used.

Such education has not previously been provided to EMS professionals, Dr. Witherspoon says. Now, despite limited opportunities for direct experience and relevant training, EMS personnel can be fully prepared for scenarios that require emergency on-site evaluation of eye injuries.

Dr. Neely also regards the training kit as a confidence-builder.

“We think we have created a more comprehensive education model that goes beyond traditional classroom lectures,” Dr. Neely says. “The accessory exam kit provides a much more in-depth, hands-on experience. The algorithms we’ve established for assessment and treatment are analogous to the protocols that are now in place for other emergencies such as heart attack or stroke. You get those basic steps down, and from that point treatment gets easier and more effective because, in following a standardized sequence, you have confidence you’re getting it right.”

ADAPTIVE YOGA STUDY SHOWS PROMISE FOR VISUAL IMPAIRMENT

Executing yoga movements and poses correctly can be difficult enough, but imagine how much harder it would be if you can’t see those movements.

That’s an important challenge for people with vision impairment who wish to participate in instructional exercises such as yoga. A study at UAB Callahan Eye Hospital titled “Adaptive Yoga for Patients with Vision Impairment and Their Families” is addressing that challenge by evaluating the feasibility of designing yoga instruction for those with visual impairment.

A key rationale for making exercise instruction adaptable is that those with visual impediments are at risk for poor health outcomes, mainly due to sedentary behaviors and related weight management issues, says Laura Dreer, PhD, who directs the Psychological & Neuropsychology Clinical Research Services for

the UAB Department of Ophthalmology and Visual Sciences.

“We had yoga instructors show us some of the techniques they use in regular classes, and then we planned a pilot program in partnership with the UAB Campus Recreation Center,” Dreer says. “Then they used simulator goggles to experience how vision impairment impacts any efforts to do yoga poses, and from that we determined what our sample group might require in terms of instruction.”

The sample group yielded promising data. More than 90 percent of the group said they were satisfied with adaptive verbal instructions, 100 percent reported that the modifications were helpful, and almost 80 percent said they were likely to practice yoga at home.



FACULTY LISTING

**MICHAEL A. ALBERT JR., MD****EDUCATION**

Medical School: West Virginia University School of Medicine

Residency: University of Alabama at Birmingham

Fellowship: Retina Consultants of Alabama

TITLE: Associate Professor

CLINICAL SPECIALTY: Retina and vitreous

**R. JEFFREY CRAIN, MD****EDUCATION**

Medical School: University of Alabama at Birmingham

Residency: University of Alabama at Birmingham

TITLE: Director, Birmingham Veterans Affairs Medical Center Ophthalmology Service; Associate Professor

CLINICAL SPECIALTY: Comprehensive

**ANN MARIE ARCINIEGAS-BERNAL, MD****EDUCATION**

Medical School: University of Alabama at Birmingham

Residency: Henry Ford Hospital, Detroit, Michigan

Fellowship: W. K. Kellogg Eye Center, University of Michigan

TITLE: Assistant Professor

CLINICAL SPECIALTY: Pediatrics

**CHRISTINE A. CURCIO, PHD****EDUCATION**

Doctoral Training: University of Rochester

Postdoctoral Training: Boston University, School of Medicine; University of Washington School of Medicine

TITLE: Professor

RESEARCH INTEREST: Age-related macular degeneration, pathobiology, validation of clinical imaging (optical coherence tomography, autofluorescence, adaptive optics scanning laser ophthalmoscopy)

**RITA ARMITAGE, MD****EDUCATION**

Medical School: University of Kentucky

Residency: University of Alabama at Birmingham

TITLE: Assistant Professor

CLINICAL SPECIALTY: Comprehensive

**DAWN K. DECARLO, OD, MS, MSPH****EDUCATION**

Doctoral Degree: University of Alabama at Birmingham, School of Optometry

Master's Degrees: University of Alabama at Birmingham, School of Optometry; University of Alabama at Birmingham, School of Public Health

Residency: Hines Central Blind Rehabilitation; Chicago West Side Veterans Administration Medical Center

TITLE: Director, UAB Center for Low Vision Rehabilitation; Associate Professor

CLINICAL SPECIALTY: Low vision rehabilitation

RESEARCH INTEREST: Low vision rehabilitation, pediatric vision impairment

**J. WAID BLACKSTONE, MD****EDUCATION**

Medical School: University of Alabama at Birmingham

Residency: University of Alabama at Birmingham

TITLE: Assistant Professor

CLINICAL SPECIALTY: Comprehensive

**MICHAEL E. BOULTON, PHD****EDUCATION**

Doctoral Degree: Polytechnic of Central London, United Kingdom

Fellowship: Institute of Ophthalmology, United Kingdom

TITLE: Susan and Dowd Ritter/RPB Endowed Chair in Ophthalmology Research; Professor

RESEARCH INTEREST: Pathogenesis of age-related macular degeneration; diabetic retinopathy

**J. CRAWFORD DOWNS, PHD****EDUCATION**

Master's Degrees: Tulane University

Doctoral Training: Tulane University

Postdoctoral Training: LSU Eye Center, Louisiana State University

TITLE: Professor

RESEARCH INTEREST: Ocular biomechanics, glaucoma

**MICHAEL A. CALLAHAN, MD****EDUCATION**

Medical School: University of Alabama at Birmingham

Residency: University of California, San Francisco

Fellowship: Indiana University

TITLE: Director, Oculoplastics; Professor

CLINICAL SPECIALTY: Comprehensive

**LAURA E. DREER, PHD****EDUCATION**

Master's Degree: University of Hartford

Doctoral Degree: Central Michigan University

Postdoctoral Training: Duke University Medical Center (Neuropsychology); University of Alabama at Birmingham (Medical Rehabilitation Psychology)

TITLE: Associate Professor (Clinical Medical Rehabilitation Psychologist)

RESEARCH INTEREST: Adjustment to chronic health conditions and disabilities; development and evaluation of innovative behavioral health interventions to improve patient and caregiver health outcomes; understanding health and race disparities

**MARTIN S. COZEN, MD****EDUCATION**

Medical School: University of Alabama at Birmingham

Residency: University of Alabama at Birmingham

Fellowship: James Hall Eye Center/Scottish Rite Children's Hospital

TITLE: Director, Pediatric Ophthalmology and Strabismus; Professor

CLINICAL SPECIALTY: Pediatric ophthalmology

**ANDREW W. EVERETT, MD****EDUCATION**

Medical School: University of South Alabama
Residency: University of Alabama at Birmingham
Fellowship: University of Alabama at Birmingham
TITLE: Assistant Professor
CLINICAL SPECIALTY: Comprehensive

**MASSIMO ANTONIO FAZIO, PHD****EDUCATION**

Master's Degree: University of Calabria, Calabria, Italy
Doctoral Degree: University of Calabria, Calabria, Italy
Postdoctoral Fellowship: Devers Eye Institute, Portland, Oregon
TITLE: Assistant Professor
RESEARCH INTEREST: Ocular biomechanics, glaucoma

**RICHARD M. FEIST, MD****EDUCATION**

Medical School: University of Alabama at Birmingham
Residency: University of Illinois, Eye and Ear Infirmary
Fellowship: University of Iowa
TITLE: Associate Professor
CLINICAL SPECIALTY: Retina and vitreous

**PRISCILLA FOWLER, MD****EDUCATION**

Medical School: University of South Alabama
Residency: University of Alabama at Birmingham
Fellowship: Wills Eye Institute
TITLE: Director, Cornea Service; Assistant Professor
CLINICAL SPECIALTY: Cornea

**MARCELA FRAZIER, OD, MPH, FAAO****EDUCATION**

Doctoral Degree: University of Alabama at Birmingham, School of Optometry
Residency: University of Alabama at Birmingham, School of Optometry
TITLE: Associate Professor
CLINICAL SPECIALTY: Pediatric optometry

**PAUL D. GAMLIN, PHD****EDUCATION**

Doctoral Degree: State University of New York, Stony Brook
Postdoctoral Training: University of Alabama at Birmingham
TITLE: Professor
RESEARCH INTEREST: Neural control of eye movements

**CHRISTOPHER A. GIRKIN, MD, MSPH, FACS****EDUCATION**

Medical School: University of Arkansas
Residency: University of Alabama at Birmingham
Fellowship: Wilmer Eye Institute, Johns Hopkins University; Heed Fellow, Shiley Eye Center, University of California, San Diego
TITLE: Professor and Chairman, EyeSight Foundation of Alabama Endowed Chair
CLINICAL SPECIALTY: Adult and pediatric glaucoma, complex cataract
RESEARCH INTEREST: Clinical and basic research into glaucoma pathogenesis

**MARIA GRANT, MD****EDUCATION**

Medical School: University of Florida
Residency: University of Florida
Fellowship: University of Florida; The Wilmer Eye Institute, Johns Hopkins University
TITLE: Eivor and Alston Callahan, MD, Endowed Chair in Ophthalmology; Professor
CLINICAL SPECIALTY: Stem cell use for repair and regeneration

**RAFAEL GRYTZ, PHD****EDUCATION**

Master's Degree: Ruhr University Bochum, Germany
Doctoral Degree: Ruhr University Bochum, Germany
Postdoctoral Training: Devers Eye Institute, Portland, Oregon
TITLE: Associate Professor
RESEARCH INTEREST: Growth and remodeling mechanisms in myopia, keratoconus, and glaucoma

**TYLER A. HALL, MD****EDUCATION**

Medical School: Wright State University School of Medicine, Dayton, Ohio
Residency: University of Alabama at Birmingham
Fellowship: Emory University, Atlanta, Georgia
TITLE: Assistant Professor
CLINICAL SPECIALTY: Cornea, cataract, and external disease

**SARAH MIRELES JACOBS, MD****EDUCATION**

Medical School: Mayo Medical School
Residency: Washington University, St. Louis
Fellowship: University of Washington
TITLE: Assistant Director, Oculoplastics; Assistant Professor
CLINICAL SPECIALTY: Oculoplastics

**D. WADE JOINER, MD****EDUCATION**

Medical School: University of South Alabama
Residency: University of Alabama at Birmingham
Fellowship: New York Eye and Ear Infirmary
TITLE: Associate Professor
CLINICAL SPECIALTY: Glaucoma



LANNING B. KLINE, MD

EDUCATION

Medical School: Duke University

Residency: McGill University

Fellowship: Bascom Palmer Eye Institute, University of Miami; Montreal Neurological Institute

TITLE: Professor

CLINICAL SPECIALTY: Neuro-ophthalmology



ANDREW MAYS, MD

EDUCATION

Medical School: University of Alabama at Birmingham

Residency: University of Alabama at Birmingham

Fellowship: University of Florida

TITLE: Associate Professor

CLINICAL SPECIALTY: Glaucoma



MIYOUNG KWON, PHD

EDUCATION

Doctoral Degree: University of Minnesota

Postdoctoral Training: University of Southern California; Schepens Eye Research Institute, Harvard Medical School

TITLE: Assistant Professor

RESEARCH INTEREST: Low vision and spatial vision



CECIL JAMES MCCOLLUM, MD

EDUCATION

Medical School: University of Alabama at Birmingham

Residency: University of Alabama at Birmingham

Fellowship: Duke University

TITLE: Director of Emergency Services, Clinical Assistant Professor

CLINICAL SPECIALTY: Emergency Services, cornea



SARAH DILLE LEE, OD, MSPH, FAAO

EDUCATION

Doctoral Degree: University of Alabama at Birmingham, School of Optometry

Postdoctoral Training: University of Alabama at Birmingham, School of Public Health

TITLE: Assistant Professor

CLINICAL SPECIALTY: Pediatric optometry



SARAH MULLINS, MD

EDUCATION

Medical School: LSU Health Sciences, Shreveport

Residency: University of Alabama at Birmingham

TITLE: Instructor

CLINICAL SPECIALTY: Comprehensive



MARISSA K. LOCY, OD

EDUCATION

Doctoral Degree: University of Alabama at Birmingham, School of Optometry

Postdoctoral Training: University of Alabama at Birmingham

TITLE: Instructor

CLINICAL SPECIALTY: Comprehensive



CYNTHIA OWSLEY, PHD, MSPH

EDUCATION

Master's Degree: University of Alabama at Birmingham

Doctoral Degree: Cornell University

Postdoctoral Training: Northwestern University

TITLE: Vice Chair of Research; Nathan E. Miles Chair of Ophthalmology; Director, Clinical Research Unit; Professor

RESEARCH INTEREST: Aging-related vision impairment and eye disease; functional biomarkers for age-related macular degeneration; vision and driving; improving eye care access and quality for underserved populations



VIRGINIA LOLLEY, MD, FACS

EDUCATION

Medical School: Tulane University School of Medicine

Residency: University of Alabama at Birmingham

TITLE: Assistant Professor

CLINICAL SPECIALTY: Comprehensive, refractive cataract surgery



LYNE RACETTE, PHD

EDUCATION

Doctoral Degree: Carleton University, Ottawa, Canada

Postdoctoral Fellowship: University of California

San Diego

TITLE: Associate Professor

RESEARCH INTEREST: Glaucoma



JOHN O. MASON, MD

EDUCATION

Medical School: University of Alabama at Birmingham

Residency: University of Alabama at Birmingham

Fellowship: Wills Eye Hospital, Philadelphia, Pennsylvania

TITLE: Associate Professor

CLINICAL SPECIALTY: Retina and vitreous



RUSSELL W. READ, MD, PHD

EDUCATION

Residency: University of Washington Seattle

Fellowship: Doheny Eye Institute, University of Southern California

TITLE: Residency Director; Max and Lorayne Cooper Professor of Ophthalmology Residency Training

RESEARCH INTEREST: Health disparities in uveitis outcomes

CLINICAL SPECIALTY: Uveitis/ocular inflammatory disease



SHILPA REGISTER, OD

EDUCATION

Optometry Degree: University of Alabama at Birmingham, School of Optometry
Graduate Education: Ohio State University, College of Education and Human Ecology
Postdoctoral Training: UAB School of Medicine, Harvard University Extension School
TITLE: Clinical Assistant Professor
CLINICAL SPECIALTY: Primary eye care



LINDSAY RHODES, MD

EDUCATION

Medical School: Northwestern University Feinberg School of Medicine
Residency: University of Alabama at Birmingham
Fellowship: University of Alabama at Birmingham
TITLE: Assistant Professor
CLINICAL SPECIALTY: Glaucoma
RESEARCH INTEREST: Health services research; novel methods of care delivery, such as telemedicine



CAROL ROSENSTIEL, OD, FAAO

EDUCATION

Doctoral Degree: University of Alabama at Birmingham, School of Optometry
TITLE: Director, Contact Lens Service; Associate Professor
CLINICAL SPECIALTY: Primary eye care and contact lens service



BRIAN C. SAMUELS, MD, PHD

EDUCATION

Medical School: Indiana University
Residency: University of Alabama at Birmingham
Fellowship: Duke University
TITLE: Director, UAB Glaucoma Division; Director, UAB Glaucoma Fellowship; Chief of Staff, Callahan Eye Hospital; Associate Professor
CLINICAL SPECIALTY: Glaucoma
RESEARCH INTEREST: Role of the central nervous system in the development and progression of glaucoma



HAROLD SKALKA, MD

EDUCATION

Medical School: New York University
Residency: New York University
Fellowship: New York University
TITLE: Professor
CLINICAL SPECIALTY: Electrophysiology



JASON C. SWANNER, MD, FACS

EDUCATION

Medical School: University of South Alabama College of Medicine
Residency: University of Alabama at Birmingham
Fellowship: Massachusetts Eye and Ear Infirmary, Harvard School of Medicine
TITLE: Medical Director of Callahan Eye Hospital Clinics; Professor
CLINICAL SPECIALTY: Glaucoma



KAYLA L. THOMASON, OD

EDUCATION

Doctoral Degree: University of Alabama at Birmingham, School of Optometry
TITLE: Clinical Instructor
CLINICAL SPECIALTY: Primary eye care



MARTIN THOMLEY, MD

EDUCATION

Medical School: University of Alabama at Birmingham
Residency: Bascom Palmer Eye Institute, University of Miami
Fellowship: Bascom Palmer Eye Institute, University of Miami
TITLE: Associate Professor
CLINICAL SPECIALTY: Retina and vitreous



MICHAEL S. VAPHIADES, DO

EDUCATION

Medical School: University of New England
Medical Internship: Brown University
Residency: Loyola University
Fellowship: Michigan State University
TITLE: Director, Neuro-Ophthalmology and Electrophysiology Services; Professor
CLINICAL SPECIALTY: Neuro-ophthalmology



SHU-ZHEN WANG, PHD

EDUCATION

Doctoral Degree: Virginia Polytechnic Institute & State University
Postdoctoral Training: Virginia Polytechnic Institute & State University; Wilmer Eye Institute, Johns Hopkins University School of Medicine
TITLE: Professor
RESEARCH INTEREST: Photoreceptor regeneration in the mammalian eye



C. DOUGLAS WITHERSPOON, MD, FACS

EDUCATION

Medical School: St. Louis University
Residency: University of Alabama at Birmingham
Fellowship: University of Tennessee
TITLE: Professor
CLINICAL SPECIALTY: Retina and vitreous, ocular trauma
RESEARCH INTEREST: Retina and vitreous, ocular trauma



YUHUA ZHANG, PHD

EDUCATION

Master's Degree: Chinese Sciences Academy, China
Doctoral Degree: Tianjin University, China
Postdoctoral Training: Beijing Institute of Technology; Auckland University, New Zealand
TITLE: Associate Professor
RESEARCH INTEREST: Adaptive optics; high-resolution retinal imaging; age-related macular degeneration

Callahan Eye Hospital Medical Staff Physicians

Michael Albert, MD	Michelle Downing, MD	Mark Mandabach, MD	Daniel Rousso, MD
Matthew Albright, MD	George Dumas, MD	Justin Mann, MD	Craig Samford, MD
Ryan Almeida, MD	Susan Eiland, MD	John Mason, III, MD	Brian Samuels, MD
Ann Arciniegas-Bernal, MD	Craig Elmets, MD	Andrew Mays, MD	Mathew Sapp, MD
Joseph Armenia, MD	Andrew Everett, MD	Cecil McCollum, MD	Alethia Sellers, MD
Rita J. Armitage, MD	John Fannin, MD	Andrew McFarland, MD	Douglas Shaw, MD
Evans Bailey, MD	Joel Feinstein, MD	Bradley Meers, MD	Roland Short, MD
Kristin Bains, MD	Richard Feist, MD	Merrick Meese, MD	Jeffrey Simmons, MD
William Baker, MD	Grace Flowers, MD	Kelly Mercer, MD	Vinodkumar Singh, MD
Andrew Bartlett, MD	Priscilla Fowler, MD	Marc Michelson, MD	Sandra Sipe, MD
Carson Bee, MD	Marcela G. Frazier, OD	Jennifer Michelson, MD	Harold Skalka, MD
Cara Bevinetto, MD	Michael Froelich, MD	David Miller, MD	David Skier, MD
Susan Black, MD	Jeffrey Fuller, MD	Gary Monheit, MD	Alvin Smith, MD
James Blackstone, MD	Chris Girkin, MD	John Morgan, MD	Joshua Smith, MD
Christopher Blakely, MD	Christopher Godlewski, MD	Robert Morris, MD	Nathaniel Smith, MD
Gwendolyn Boyd, MD	William Graugnard, MD	Sara Mullins, MD	Weifeng Song, MD
Kevin Bray, MD	Tyler Hall, MD	Peter Nagi, MD	Jason Swanner, MD
Brandon Brooks, MD	Christopher Harmon, MD	David Neely, MD	Mark Tavakoli, MD
Larry "Dale" Brown, MD	Cara Heath Cox, MD	Michael Neimkin, MD	Kayla Thomason, OD
Michael Callahan, MD	Carolyn Hebson, MD	William O'Byrne III, MD	Martin Thomley, MD
Elizabeth Cameron, OD	Jose Humanez, MD	Matthew Oltmanns, MD	Stanislav Tolkachjov, MD
Tekuila Carter, MD	James Hunter Jr., MD	John Owen, MD	Matthew Townsley, MD
Lucy Chapman, MD	Elisa Illing, MD	John Parker, MD	Michelle Tubinis, MD
Michael Chestnut, MD	Sarah Jacobs, MD	John Parker, MD	Benjamin Tuck, MD
Do-Yeon Cho, MD	Darrell Joiner, MD	Christopher Paul, MD	Michael Vaphiades, MD
Logan Christensen, MD	Keith Jones, MD	Roswell Pfister, MD	Rodolfo Vargas, MD
Martin Cogen, MD	Shaconda Junious, MD	Mark Phillips, MD	Andrew Velazquez, MD
Bradley Coker, MD	Hari Kalagara, MD	Albert Pierce, MD	Jason T. Vice, OTR/L
Artemus Cox III, MD	Christopher Kelly, MD	Jorge Pino, MD	Matthew Vicinanza, MD
Jeffrey Crain, MD	Stephen Kelly, MD	William Potter, MD	Stacy Wade, MD
Jack Crawford, MD	Jonathan Kentros, MD	Mark Powell, MD	Brant Wagener, MD
Richard Cross, MD	Robert Kim, MD	Darrell Prestridge, MD	Marsha Wakefield, MD
Jason Crosson, MD	Lanning Kline, MD	Randall Proctor, MD	Oliver Ware, MD
Jyoti Dangle, MD	Promil Kukreja, MD	Adam Quinn, MD	Kevin Wells, MD
Jennifer Davidson, MD	Prentiss Lawson, MD	Russell Read, MD	Douglas Witherspoon, MD
Dawn K. DeCarlo, OD	Sarah D. Lee Lee, OD	Shilpa J. Register, OD	Bradford Woodworth, MD
Pankaj Desai, MD	Marissa K. Locy, OD	Lindsay Rhodes, MD	Songwei Wu, MD
Amanda Dinsmore, MD	Virginia Lolley, MD	Ronald Roan, MD	Jeffrey Yee, MD
Jeffrey Dobyns, MD	John Long, MD	Carol E. Rosenstiel, OD	Ahmed Zaky, MD
	Patrick Louis, MD, DDS	Randall Rougelot, MD	

** This list includes surgeons/physicians who manage patients at UAB Hospital, the VA, Children's of Alabama, and Callahan Eye Hospital.*



APPENDICES

Publications

PUBLICATIONS DISTRIBUTION

AMD	26
DIABETES/RETINA	22
NEUROSCIENCE	20
HEALTH SERVICES RESEARCH	17
GLAUCOMA	17
OTHER	12
CELL/GENE THERAPY	7
LOW VISION/VISUAL PREFORMANCE	5
OCULOPLASTICS	5
TOTAL: 131	



Akagi T, Zangwill LM, Saunders LJ, Yarmohammadi A, Manalastas PIC, Suh MH, **Girkin CA**, Liebmann JM, Weinreb RN. Rates of local retinal nerve fiber layer thinning before and after disc hemorrhage in glaucoma. *Ophthalmology*. 2017 September;124(9):1403-1411. PMID: 28499748

Asfar T, Lee DJ, Lam BL, Murchison AP, Mayro EL, **Owsley C**, **McGwin G Jr**, Gower EW, Friedman DS, Saaddine J. Evaluation of a web-based training in smoking cessation counseling targeting U.S. eye-care professionals. *Health Education & Behavior*. 2017 June. PMID: 28580802

Aurrecochea E, Llorca Díaz J, Diez Lizuain ML, **McGwin G Jr**, Calvo-Alen J. Gender-associated comorbidities in rheumatoid arthritis and their impact on outcome: data from GENIRA. *Rheumatology International*. 2017 April;37(4):479-485. PMID: 27987002

Baker DK, Perez JL, Watson SL, **McGwin G Jr**, Brabston EW, Hudson PW, Ponce BA. Arthroscopic versus open rotator cuff repair: Which has a better complication and 30-day readmission profile? *Arthroscopy*. 2017 July. pii: S0749-8063(17)30391-2. PMID: 28688827

Baker-Sparr C, Hart T, Bergquist T, Bogner J, **Dreer LE**, Juengst S, Mellick D, O'Neil-Pirozzi TM, Sander AM, Whiteneck GG. Internet and social media use after Traumatic Brain Injury: A Traumatic Brain Injury Model Systems study. *Journal of Head Trauma Rehabilitation*. 2017 April. PMID: 28422898

Balaratnasingam C, Cherepanoff S, Dolz-Marco R, Killingsworth M, Chen FK, Mendis R, Mrejen S, Too LK, Gal-Or O, **Curcio CA**, Freund KB, Yannuzzi LA. Cuticular Drusen: Clinical phenotypes and natural history defined using multimodal imaging. *Ophthalmology*. 2017 September. pii: S0161-6420(17)31088-6. PMID: 28964580

Balaratnasingam C, Hoang QV, Inoue M, **Curcio CA**, Dolz-Marco R, Yannuzzi NA, Dhrami-Gavazi E, Yannuzzi LA, Freund KB. Clinical characteristics, choroidal neovascularization, and predictors of visual outcomes in acquired vitelliform lesions. *American Journal of Ophthalmology*. 2016 December;172:28-38. PMID: 27640006, doi: 10.1016/j.ajo.2016.09.008

Balaratnasingam C, Messinger JD, Sloan KR, Yannuzzi LA, Freund KB, **Curcio CA**. Histologic and optical coherence tomographic correlates in drusenoid pigment epithelium detachment in age-related macular degeneration. *Ophthalmology*. 2017 May;124(5):644-656. PMID: 28153442, doi: 10.1016/j.ophtha.2016.12.034

Balaratnasingam C, Yannuzzi LA, **Curcio CA**, Morgan WH, Querques G, Capuano V, Souied E, Jung J, Freund KB. Associations between retinal pigment epithelium and drusen volume changes during the lifecycle of large drusenoid pigment epithelial detachments. *Investigative Ophthalmology & Visual Science*. 2016 October;57(13):5479-5489. PMID: 27760262, doi: 10.1167/iovs.16-19816

Baldivia S, Levy A, Hegde S, Aper SJ, Merckx M, **Grytz R**. A novel organ culture model to quantify collagen remodeling in tree shrew sclera. *PLoS One*. 2016 November;11(11): PMID: 27870875

Barrett OC, McDonald AM, Thompson JW, Bredel M, **McGwin G Jr**, Riley KO, Fiveash JB. Distant brain recurrence in patients with five or more newly diagnosed brain metastases treated with focal stereotactic radiotherapy alone. *Journal of Radiosurgery and SBRT*. 2017;4(4):255-263. PMID: 28626600

Barrington DA, Dilley SE, Landers EE, Thomas ED, Boone JD, Straughn JM Jr, **McGwin G Jr**, Leath CA 3rd. Distance from a comprehensive cancer center: A proxy for poor cervical cancer outcomes? *Gynecologic Oncology*. 2016 December;143(3):617-621. PMID: 27720232

Basavarajappa HD, Sulaiman RS, Qi X, Shetty T, Sheik Pran Babu S, Sishtla KL, Lee B, Quigley J, Alkhairy S, Briggs CM, Gupta K, Tang B, Shadmand M, **Grant MB**, **Boulton ME**, Seo SY, Corson TW. Ferrocenyl ferrocenyl is a therapeutic target for ocular neovascularization. *EMBO Molecular Medicine*. 2017 June;9(6):786-801. PMID: 28377496

Beaulieu WT, Bressler NM, Melia M, **Owsley C**, Mein CE, Gross JG, Jampol LM, Glassman AR; Diabetic Retinopathy Clinical Research Network. Panretinal photocoagulation versus ranibizumab for proliferative diabetic retinopathy: patient-centered outcomes from a randomized clinical trial. *American Journal of Ophthalmology*. 2016 October;170:206-213. PMID: 27523491

Beli E, Dominguez JM 2nd, Hu P, Thinschmidt JS, Caballero S, Calzi SL, Luo D, Shanmugam S, Salazar TE, Duan Y, **Boulton ME**, Mohr S, Abcouwer SF, Saban DR, Harrison JK, **Grant MB**. Erratum to: CX3CR1 deficiency accelerates the development of retinopathy in a rodent model of type 1 diabetes. *Journal of Molecular Medicine (Berlin)*. 2017 May;95(5):565-566. PMID: 28421250

Beltran WA, Cideciyan AV, Boye SE, Ye GJ, Iwabe S, Dufour VL, Marinho LF, Swider M, Kosyk MS, Sha J, Boye SL, Peterson JJ, **Witherspoon CD**, Alexander JJ, Ying GS, Shearman MS, Chulay JD, Hauswirth WW, **Gamlin PD**, Jacobson SG, Aguirre GD. Optimization of retinal gene therapy for x-linked retinitis pigmentosa due to RPGR mutations. *Molecular Therapy*. 2017 August 2;25(8):1866-1880. PMID: 28566226

Bertisch H, Krellman JW, Bergquist TF, **Dreier LE**, Ellois V, Bushnik T. Characteristics of firearm brain injury survivors in the Traumatic Brain Injury Model Systems (TBIMS) National Database: A comparison of assault and self-inflicted injury survivors. *Archives of Physical Medicine and Rehabilitation*. 2017 May. PMID: 28478127

Bhatwadekar AD, Beli E, Diao Y, Chen J, Luo Q, Alex A, Caballero S, Dominguez JM 2nd, Salazar TE, Busik JV, Segal MS, **Grant MB**. Conditional deletion of bmal1 accentuates microvascular and macrovascular injury. *American Journal of Pathology*. 2017 June;187(6):1426-1435. PMID: 28432873

Binda P, **Gamlin PD**. Renewed attention on the pupil light reflex. *Trends in Neuroscience*. 2017 August;40(8):455-457. PMID: 28693846

Boehme AK, Pamboukian SV, George JF, Beasley TM, Kirklin JK, Tallaj J, Dillon C, Levitan EB, Griffin R, **McGwin G Jr**, Hilleagass WB, Limdi NA. Anticoagulation control in patients with ventricular assist devices. *American Society for Artificial Internal Organs*. 2017 May. PMID: 28492415

Bourne RRA, Flaxman SR, Braithwaite T, Cicinelli MV, Das A, Jonas JB, Keeffe J, Kempen JH, Leasher J, Limburg H, Naidoo K, Pesudovs K, Resnikoff S, Silvester A, Stevens GA, Tahhan N, Wong TY, Taylor HR; **Vision Loss Expert Group**. Magnitude, temporal trends, and projections of the global prevalence of blindness and distance and near vision impairment: A systematic review and meta-analysis. *The Lancet Global Health*. 2017 September;5(9): e888-e897. PMID: 28779882

Bowling CB, Plantinga L, Phillips LS, McClellan W, Echt K, Chumbler N, **McGwin G Jr**, Vandenberg A, Allman RM, Johnson TM 2nd. Association of multimorbidity with mortality and healthcare utilization in chronic kidney disease. *Journal of the American Geriatrics Society*. 2017 April;65(4):704-711. PMID:27880003

Boye SE, Alexander JJ, **Witherspoon CD**, Boye SL, Peterson JJ, Clark ME, **Gamlin PD**. Highly efficient delivery of adeno-associated viral vectors to the primate retina (2016). *Human Gene Therapy*. 2016, 27(8), 580-597. PMID: 27439313

Brooks RD, **McGwin G Jr**. The epidemiology of emergency department-treated burn injuries associated with portable heaters in the United States, 2003-2013. *Journal of Burn Care & Research*. 2017 January/February;38(1): PMID: 27306722

Cain EL Jr, Fleisig GS, Ponce BA, Boohaker HA, George MP, **McGwin G Jr**, Andrews JR, Lemak LJ, Clancy WG Jr, Dugas JR. Variables associated with chondral and meniscal injuries in anterior cruciate ligament surgery. *Journal of Knee Surgery*. 2017 September;30(7):659-667. PMID: 27894146

Choudhury S, Strang CE, Alexander JJ, Scalabrino ML, Lynch Hill J, Kasuga DT, **Witherspoon CD**, Boye SL, **Gamlin PD**, Boye SE. Novel methodology for creating macaque retinas with sortable photoreceptors and ganglion cells. *Frontiers in Neuroscience*. 2016 December;10:551. PMID: 27990105

Crosson J, Mason L, **Mason JO 3rd**. The Role of Focal Laser in the Anti-VEGF Era. (Accepted for publication in *Ophthalmology and Eye Disease*)

Curcio CA, Huisingh C. Probing the role of inflammation in age-related macular degeneration. *JAMA Ophthalmology*. 2017 August;135(8):843-844. PMID: 28654970, doi: 10.1001/jamaophthalmol.2017.2008

Publications

Curcio CA, Zanzottera EC, Ach T, Balaratnasingam C, Freund KB. Activated retinal pigment epithelium, an optical coherence tomography biomarker for progression in age-related macular degeneration. *Investigative Ophthalmology & Visual Science*. 2017 May; 58, BIO211-BIO226. 10.1167/iov.17-21872

Cymerman RM, Skolnick AH, Cole WJ, Nabati C, **Curcio CA**, Smith RT. Coronary artery disease and reticular macular disease, a subphenotype of early age-related macular degeneration. *Current Eye Research*. 2016 November;41(11):1482-1488. PMID: 27159771

Dahdah MN, Hofmann M, Pretz C, An V, Barnes SA, Bennett M, **Dreer LE**, Bergquist T, Shafi S. Factors associated with rehabilitation outcomes after traumatic brain injury: Comparing functional outcomes between TBIMS centers using hierarchical linear modeling. *Journal of Head Trauma Rehabilitation*. 2017 July/August;32(4): E1-E10. PMID: 28489704

Daily LR, Boone JD, Machemehl HC, Thomas ED, **McGwin G Jr**, Straughn JM Jr, Leath CA 3rd. Does obesity affect pathologic agreement of initial and final tumor grade of disease in endometrial cancer patients? *International Journal of Gynecological Cancer*. 2017 May;27(4):714-719. PMID: 28333843

Dams-O'Connor K, Mellick D, **Dreer LE**, Hammond FM, Hoffman J, Landau A, Zafonte R, Pretz C. Rehospitalization over 10 years among survivors of TBI: A National Institute on Disability, Independent Living, and Rehabilitation Research Traumatic Brain Injury Model Systems study. *Journal of Head Trauma Rehabilitation*. 2017 May/June;32(3):147-157. PMID: 28476056

De Moraes CG, Hood DC, Thenappan A, **Girkin CA**, Medeiros FA, Weinreb RN, Zangwill LM, Liebmann JM. 24-2 visual fields miss central defects shown on 10-2 tests in glaucoma suspects, ocular hypertensives, and early glaucoma. *Ophthalmology*. 2017 May. pii:S0161-6420(16)32035-8. PMID: 28551166.

De Moraes CG, Murphy JT, Kaplan CM, Reimann JJ, Skaat A, Blumberg DM, Al-Aswad L, Cioffi GA, **Girkin CA**, Medeiros FA, Weinreb RN, Zangwill L, Liebmann JM. β -Zone parapapillary atrophy and rates of glaucomatous visual field progression: African descent and glaucoma evaluation study. *JAMA Ophthalmology*. 2017 June;135(6):617-623. PMID: 28494060

DeRamus ML, Stacks DA, **Zhang Y**, Huisinigh CE, **McGwin G Jr**, Pittler SJ. GARP2 accelerates retinal degeneration in rod cGMP-gated cation channel β -subunit knockout mice. *Scientific Reports*. 2017 February;15(7):42545. PMID: 28198469

Dillahunt-Aspillaga C, Nakase-Richardson R, Hart T, Powell-Cope G, **Dreer LE**, Eapen BC, Barnett SD, Mellick D, Haskin A, Silva MA. Predictors of employment outcomes in veterans with Traumatic Brain Injury: A VA Traumatic Brain Injury Model Systems study. *Journal of Head Trauma Rehabilitation*. 2017 July/August;32(4):271-282. PMID: 28060203

Diniz-Filho A, Abe RY, Zangwill LM, Gracitelli CP, Weinreb RN, **Girkin CA**, Liebmann JM, Medeiros FA. Association between intraocular pressure and rates of retinal nerve fiber layer loss measured by Optical Coherence Tomography. *Ophthalmology*. 2016 October;123(10):2058-65. PMID: 27554036

Dolz-Marco R, Litts KM, Tan ACS, Freund KB, **Curcio CA**. The evolution of outer retinal tubulation, a neurodegeneration and gliosis prominent in macular diseases. *Ophthalmology*. 2017 September;124(9):1353-1367. PMID: 28456420, doi: 10.1016/j.ophtha.2017.03.043

Downs JC, **Girkin CA**. Lamina cribrosa in glaucoma. *Current Opinion in Ophthalmology*. 2017 March;28(2):113-119. PMID:27898470

Dreer LE, Crowley MT, Cash A, O'Neill JA, Cox MK. Examination of teacher knowledge, dissemination preferences, and classroom management of student concussions: Implications for return-to learn protocols. *Health Promotion Practice*. 2017 May;18(3):428-436. PMID: 27234985

Dreer, LE, Tang, X, Nakase-Richardson, R, Pugh, MJ, Cox, MK, Bailey, EK, Finn, JA, Zafonte, R, Brenner, LA. Suicide and traumatic brain injury: A review by clinical researchers from the National Institute for Disability and Independent Living Rehabilitation Research (NIDILRR) and Veterans Health Administration Traumatic Brain Injury Model Systems. *Current Opinions in Psychology*. 2017 August;22:73-78. PMID: 28963946

Feola AJ, Coudrillier B, Mulvihill J, Geraldine DM, Vo NT, Albon J, Abel RL, **Samuels BC**, Ethier CR. Deformation of the lamina cribrosa and optic nerve due to changes in cerebrospinal fluid pressure. *Investigative Ophthalmology & Visual Science*. 2017 April;58(4):2070-2078. PMID: 28389675

Foroozan R, **Vaphiades MS**. *Kline's Neuro-Ophthalmology Review Manual*, 8th ed. SLACK Inc., 2017

Garoon RB, Foroozan R, **Vaphiades MS**. Don't drink in the valley. *Survey of Ophthalmology*. 2017 May-June;62(3):383-386. PMID: 27102841

Garrity ST, Pistilli M, **Vaphiades MS**, Richards NQ, Subramanian PS, Rosa PR, Lam BL, Osborne BJ, Liu GT, Duncan KE, Shin RK, Volpe NJ, Shindler KS, Lee MS, Moster ML, Tracey EH, Cuprill-Nilson SE, Tamhankar MA. Ophthalmic presentation of giant cell arteritis in African Americans. *Eye (London)*. 2017 January;31(1):113-118. PMID: 27636230

Ghannam MY, Naseemuddin M, Weiser P, **Mason JO 3rd**. Acute multifocal hemorrhagic retinal vasculitis in a child: A case report. *BMC Ophthalmology*. 2016 October;16(1):181. PMID: 27756269

Girkin CA, Fazio MA, Yang H, Reynaud J, Burgoyne CF, Smith B, Wang L, **Downs JC**. Variation in the three-dimensional histomorphometry of the normal human optic nerve head with age and race: Lamina cribrosa and peripapillary scleral thickness and position. *Investigative Ophthalmology & Visual Science*. 2017 July;58(9):3759-3769. PMID: 28738420

Global causes of blindness and distance vision impairment 1990-2020: A systematic review and meta-analysis. Flaxman SR1, Et al. **Vision Loss Expert Group of the Global Burden of Disease Study**. *Lancet Glob Health*. 2017 Dec;5(12):e1221-e1234. doi: 10.1016/S2214-109X(17)30393-5.

Hall TA, Alan B, Kyle M. Corneal cross-linking for the treatment of keratoconus: Laboratory science, clinical effect and the potential impact to eye banking in the United States. *International Journal of Eye Banking*. 2017. Vol. 5: No. 1

Hammer SS, Beli E, Kady N, Wang Q, Wood K, Lydic TA, Malek G, Saban DR, Wang XX, Hazra S, Levi M, Busik JV, **Grant MB**. The mechanism of diabetic retinopathy pathogenesis unifying key lipid regulators, Sirtuin 1 and Liver X Receptor. *EBioMedicine*. 2017 August;22:181-190. PMID: 28774737

Haque S, **Vaphiades MS**, Lueck CJ. The visual agnosias and related disorders. *J Neuroophthalmol*. [in press].

Holz FG, Sadda SR, Staurengi G, Lindner M, Bird AC, Blodi BA, Bottoni F, Chakravarthy U, Chew EY, Csaky K, **Curcio CA**, Danis R, Fleckenstein M, Freund KB, Grunwald J, Guymer R, Hoyng CB, Jaffe GJ, Liakopoulos S, Monés JM, Oishi A, Pauleikhoff D, Rosenfeld PJ, Sarraf D, Spaide RF, Tadayoni R, Tufail A, Wolf S, Schmitz-Valckenberg S; CAM group. Imaging protocols in clinical studies in advanced age-related macular degeneration: Recommendations from classification of atrophy consensus meetings. *Ophthalmology*. 2017 April;124(4):464-478. PMID: 28109563, doi: 10.1016/j.ophtha.2016.12.002

Hookway LA, **Frazier M**, Rivera N, Ramson P, Carballo L, Naidoo K. Population-based study of presbyopia in Nicaragua. *Clin Exp Optom*. 2016 Nov;99(6):559-563. doi: 10.1111/cxo.12402.

Hu R, Wang C, **Racette L**. Comparison of matrix frequency-doubling technology perimetry and standard automated perimetry in monitoring the development of visual field defects for glaucoma suspect eyes. *PLoS One*. 2017 May 18;12(5):e0178079. PMID: 28542536

Huisingh C, Levitan EB, Irvin MR, MacLennan P, Wadley V, **Owsley C**. Visual sensory and visual-cognitive function and rate of crash and near-crash involvement among older drivers using naturalistic driving data. *Investigative Ophthalmology & Visual Science*. 2017 June;58(7):2959-2967. PMID: 28605807

Jacobs SM, Chambers CB. Basic principles, instruments, and techniques. Book chapter, *Pediatric Oculoplastic Surgery*, Ed. James Katowitz, in press 2017

Jacobs SM, Chambers CB. Congenital eyelid disorders. Book chapter, *Pediatric Oculoplastic Surgery*, Ed. James Katowitz, in press 2017

Jacobs SM, Chambers CB. Surgery of the upper nasolacrimal drainage system. Book chapter, *Pediatric Oculoplastic Surgery*, Ed. James Katowitz, in press 2017

Jacobs SM, Vangipuram G, Latimer C, Chambers C. Keratin horn of the palpebral conjunctiva. *Ophthal Plast Reconstr Surg*. 2017 Jul 25. Doi 10.1097 [Epub ahead of print]

Jasien JV, Huisingh C, **Girkin CA, Downs JC**. The magnitude of hypotony and time course of intraocular pressure recovery following anterior chamber cannulation in nonhuman primates. *Investigative Ophthalmology & Visual Science*. 2017 June;58(7):3225-3230. PMID: 28660275

Johnson TM 2nd, Vaughan CP, Goode PS, Bliwise DL, Markland AD, Huisingh C, Redden DT, **McGwin G Jr**, Eisenstein R, Ouslander JG, Issa M, Burgio KL. Pilot results from a randomized trial in men comparing alpha-adrenergic antagonist versus behavior and exercise for nocturia and sleep. *Clinical Therapeutics*. 2016 October. pii: S0149-2918(16)30742-1. PMID: 28029383

Keenum Z, **McGwin G Jr, Witherspoon CD**, Haller JA, Clark ME, **Owsley C**. Patients' adherence to recommended follow-up eye care after diabetic retinopathy screening in a publicly funded county clinic and factors associated with follow-up eye care use. *JAMA Ophthalmology*. 2016 November;134(11):1221-1228. PMID: 27632231

Lee S, Elaskandrany M, Lau LF, Lazzaro D, **Grant MB**, Chaqour B. Interplay between CCN1 and Wnt5a in endothelial cells and pericytes determines the angiogenic outcome in a model of ischemic retinopathy. *Scientific Reports*. 2017 May;7(1):1405. PMID: 28469167

Li M, Dolz-Marco R, Messinger JD, Wang L, Feist RM, **Girkin CA**, Gattoussi S, Ferrara D, **Curcio CA**, Freund KB. Clinicopathologic correlation of anti-vascular endothelial growth factor-treated type 3 neovascularization in age-related macular degeneration. *Ophthalmology*. 2017 September. pii: S0161-6420(17)32193-0. PMID: 28964579

Li M, Zauhar RJ, Grazal C, **Curcio CA**, DeAngelis MM, Stambolian D. RNA expression in human retina. *Human Molecular Genetics*. 2017 August;26(R1): R68-R74. PMID: 28854577, doi: 10.1093/hmg/ddx219

Publications

- Li W, Chen X, Riley AM, Hiatt SC, Temm CJ, Beli E, Long X, Chakraborty S, Alloosh M, White FA, **Grant MB**, Sturek M, Obukhov AG. Long-term spironolactone treatment reduces coronary TRPC expression, vasoconstriction, and atherosclerosis in metabolic syndrome pigs. *Basic Research in Cardiology*. 2017 September;112(5):54. PMID: 28756533
- Liao HW, Ren X, Peterson BB, Marshak DW, Yau KW, **Gamlin PD**, Dacey DM. Melanopsin-expressing ganglion cells on macaque and human retinas form two morphologically distinct populations. *The Journal of Comparative Neurology*. 2016 October;524(14):2845-72. PMID: 26972791
- Litts KM, Wang X, Clark ME, **Owsley C**, Freund KB, **Curcio CA**, **Zhang Y**. Exploring photoreceptor reflectivity through multimodal imaging of outer retinal tubulation in advanced age-related macular degeneration. *Retina*. 2017 May;37(5):978-988. PMID: 27584549, doi: 10.1097/IAE.0000000000001265
- Liu R, Patel BN, **Kwon M**. Age-related changes in crowding and reading speed. *Scientific Reports*. Aug 2017; 7: 8271; doi:10.1038/s41598-017-08652-0
- Long DE, Peck BD, Martz JL, Tuggle SC, Bush HM, **McGwin G Jr**, Kern PA, Bamman MM, Peterson CA. Metformin to Augment Strength Training Effective Response in Seniors (MASTERS): Study protocol for a randomized controlled trial. *Trials*. 2017 April;18(1):192. PMID: 28441958
- Lu J, Gu B, Wang X, **Zhang Y**. High-speed adaptive optics line scan confocal retinal imaging for human eye. *PLoS One*. 2017 Mar 3;12(3):e0169358. PMID: 28257458, PMCID: PMC5336222
- Marcos S, Werner JS, Burns SA, Merigan WH, Artal P, Atchison DA, Hampson KM, Legras R, Lundstrom L, Yoon G, Carroll J, Choi SS, Doble N, Dubis AM, Dubra A, Elsner A, Jonnal R, Miller DT, Paques M, Smithson HE, Young LK, **Zhang Y**, Campbell M, Hunter J, Metha A, Palczewska G, Schallek J, Sincich LC. Vision science and adaptive optics, the state of the field. *Vision Res*. 2017 Mar;132:3-33. PMID: 28212982, PMCID: PMC5437977
- Mason L, Crosson J, **Mason JO 3rd**. Patient preferences for laser versus intravitreal injections in the treatment of diabetic macular edema. *Ophthalmology*. 017;2017:7398470. doi: 10.1155/2017/7398470. Epub 2017, Apr 4
- Marwitz JH, Sima AP, Kreutzer JS, **Dreer LE**, Bergquist TF, Zafonte R, Johnson-Greene D, Felix ER. Longitudinal examination of resilience after traumatic brain injury: A Traumatic Brain Injury Model Systems study. *Archives of Physical Medicine and Rehabilitation*. 2017 June. pii: S0003-9993(17)30469-0. PMID: 28734937
- Mason L, Crosson JN, **Mason JO 3rd**, **McGwin G Jr**. Patient preferences with regard to laser versus intravitreal injections in the treatment of diabetic macular edema. *Journal of Ophthalmology*. 2017 April; PMID: 28484646
- Mason L, **Mason JO 3rd**, Friedman D, Mason J IV. Postoperative bacterial endophthalmitis: Tap/Inject vs. sutureless vitrectomy. *Medical Research Archives*, Feb. 2017. ISSN 2375-1924
- Mason L, **Mason JO 3rd**. Patients' attitudes regarding physical characteristics of physicians in ophthalmology. *BMC Research Notes* 2017, (in Press)
- Mason L, Reddy D, Crosson J, **Mason JO 3rd**. Choroidal melanoma 25-gauge vitrectomy needle biopsy and I 125 brachytherapy outcome performed by directly supervised fellows vs. attending faculty. *Ophthalmology Retina*. ORET_2017_16. 2017
- Mason LB, Reddy D, Crosson J, **Mason JO 3rd**. Choroidal melanoma vitrectomy and transvitreal needle biopsy (Letter to the Editor). *Ophthalmology* 2017 (in Press).
- McGwin G Jr**, Hudson PW, Ponce BA. Methodological concerns of safety of overlapping surgery at a high-volume referral center. *Annals of Surgery*. 2017 March. PMID: 28288064
- Miller DT, Paques M, Smithson HE, Young LK, **Zhang Y**, Campbell M, Hunter J, Metha A, Palczewska G, Schallek J, Sincich LC. Vision science and adaptive optics, the state of the field. *Vision Res*. 2017 Mar;132:3-33. PMID: 28212982, PMCID: PMC5437977
- Murchison AP, Haller JA, Mayro E, Hark L, Gower E, Huisingsh C, **Rhodes LA**, Friedman DS, Lee DJ, Lam BL; Innovative Network for Sight (INSIGHT) Research Group. Reaching the unreachable: Novel approaches to telemedicine screening of underserved populations for vitreoretinal disease. *Current Eye Research*. 2017 July;42(7):963-970. PMID: 28506091
- Neely DC, Bray KJ, Huisingsh CE, Clark ME, **McGwin G Jr**, **Owsley C**. Prevalence of undiagnosed age-related macular degeneration in primary eye care. *JAMA Ophthalmology*. 2017 June;135(6):570-575. PMID: 28448669
- Neely D, Mason L, Bray K, Crosson J, **Mason JO 3rd**. Bupivacaine versus long acting bupivacaine (Exparel) for management of post uveal melanoma brachytherapy ocular pain. *Journal of Vitreoretinal Disease*. 2017.
- Neely D, Zarubina AV, Clark ME, Huisingsh CE, Jackson GR, **Zhang Y**, **McGwin G Jr**, **Curcio CA**, **Owsley C**. Association between visual function and subretinal drusenoid deposits in normal and early age-related macular degeneration eyes. *Retina*. 2017 July;37(7):1329-1336. PMID: 28633153, doi: 10.1097/IAE.0000000000001454
- Nelson ES, Mulugeta L, Feola A, Raykin J, Myers JG, **Samuels BC**, Ethier CR. The impact of ocular hemodynamics and intracranial pressure on intraocular pressure during acute gravitational changes. *Journal of Applied Physiology* (1985). 2017 August;123(2):352-363. PMID: 28495842

Oladeji LO, Raley JA, Smith S, Perez JL, **McGwin G Jr**, Ponce BA. Behind the match process: Is there any financial difference lurking below the specialty of choice? *American Journal of Surgery*. 2016 December;82(12):1163-1168. PMID: 28234179

O'Neill JA, Cox MK, Clay OJ, Johnston JM, Novack TA, Schwebel DC, **Dreer LE**. A review of the literature on pediatric concussions and return-to-learn (RTL): Implications for RTL policy, research, and practice. *Rehabilitation Psychology*. 2017 August;62(3):300-323. PMID: 28836810

Owsley C, Clark ME, **McGwin G Jr**. Natural history of rod-mediated dark adaptation over 2 years in intermediate age-related macular degeneration. *Translational Vision Science & Technology*. 2017 June;6(3):15. PMID: 28593103

Owsley C, **McGwin G Jr**, Clark M, **Callahan M**, **Kline L**, **Witherspoon CD**, **Curcio C**, Jackson G. Delayed rod-mediated dark adaptation is a functional biomarker for incident early age-related macular degeneration. *Ophthalmology* 2016, 123(2), 344-351. PMID 26522707

Owsley C. Vision and aging. *Annual Review of Vision Science*. 2016 October;2:255-271. PMID: 28532355

Park SS, Moisseiev E, Bauer G, Anderson JD, **Grant MB**, Zam A, Zawadzki RJ, Werner JS, Nolta JA. Advances in bone marrow stem cell therapy for retinal dysfunction. *Progress in Retinal and Eye Research*. 2017 January;56:148-165. PMID: 27784628

Perez JL, Mosher ZA, Watson SL, Sheppard ED, Brabston EW, **McGwin G Jr**, Ponce BA. Readability of orthopaedic patient-reported outcome measures: Is there a fundamental failure to communicate? *Clinical Orthopaedics and Related Research*. 2017 August;475(8): PMID: 28374349

Pilgrim MG, Lengyel I, Lanzirotti A, Newville M, Fearn S, Emri E, Knowles JC, Messinger JD, **Read RW**, Guidry C, **Curcio CA**. Subretinal pigment epithelial deposition of drusen components including hydroxyapatite in a primary cell culture model. *Investigative Ophthalmology & Visual Science*. 2017 February;58(2):708-719. PMID: 28146236, doi:10.1167/iovs.16-21060

Qi X, Pay SL, Yan Y, Thomas J Jr, Lewin AS, Chang LJ, **Grant MB**, **Boulton ME**. Systemic injection of RPE65-programmed bone marrow-derived cells prevents progression of chronic retinal degeneration. *Molecular Therapy*. 2017 April;25(4):917-927. PMID: 28202390

Raykin J, Forte TE, Wang R, Feola A, **Samuels BC**, Myers JG, Mulugeta L, Nelson ES, Gleason RL, Ethier CR. Characterization of the mechanical behavior of the optic nerve sheath and its role in spaceflight-induced ophthalmic changes. *Biomechanics and Modeling in Mechanobiology*. 2017 February;16(1):33-43. PMID: 27236645

Reddy DM, Mason LB, **Mason JO 3rd**, Crosson JN, Yunker JJ. Vitrectomy and vitrector port needle biopsy of choroidal melanoma for gene expression profile testing immediately before brachytherapy. *Ophthalmology*. 2017 September;124(9):1377-1382. PMID: 28461017

Register SJ, Cherrington A, Howard V, Carson A, Yuan Y, Harrington K. Smoking, diabetes status, and incident vision loss among middle-aged and older US adults; 2017, *American Diabetes Association*.

Register SJ, Harrington KF, Agne AA, Cherrington AL. Effectiveness of non-primary care based smoking cessation interventions for adults with diabetes: A systematic literature review. *Current Diabetes Report*, 2016, 16(81). Doi 10.1007/s11892-016-0777-8

Register SJ, King K. Promotion and tenure: Application of scholarship of teaching and learning, and scholarship of engagement criteria to health professions education. *Journal of Health Professions Education*, February 2017. DOI 10.1016/j.hpe.2017.02.002

Rhodes LA, Huisingh CE, Quinn AE, **McGwin G Jr**, LaRussa F, Box D, **Owsley C**, **Girkin CA**. Comparison of Bruch's Membrane opening minimum rim width among those with normal ocular health by race. *American Journal of Ophthalmology*. 2017 February;174:113-118. PMID: 27825982

Ritter AC, Wagner AK, Fabio A, Pugh MJ, Walker WC, Szaflarski JP, Zafonte RD, Brown AW, Hammond FM, Bushnik T, Johnson-Greene D, Shea T, Krellman JW, Rosenthal JA, **Dreer LE**. Incidence and risk factors of posttraumatic seizures following traumatic brain injury: A Traumatic Brain Injury Model Systems study. *Epilepsia*. 2016 December;57(12):1968-1977. PMID:27739577

Salazar TE, Richardson MR, Beli E, Ripsch MS, George J, Kim Y, Duan Y, Moldovan L, Yan Y, Bhatwadekar A, Jadhav V, Smith JA, McGorray S, Bertone AL, Traktuev DO, March KL, Colon-Perez LM, Avin KG, Sims E, Mund JA, Case J, Deng X, Kim MS, McDavitt B, **Boulton ME**, Thinschmidt J, Li Calzi S, Fitz SD, Fuchs RK, Warden SJ, McKinley T, Shekhar A, Febo M, Johnson PL, Chang LJ, Gao Z, Kolonin MG, Lai S, Ma J, Dong X, White FA, Xie H, Yoder MC, **Grant MB**. Electroacupuncture promotes central nervous system-dependent release of mesenchymal stem cells. *Stem Cells*. 2017 May;35(5):1303-1315. PMID: 28299842

Sapru S, Berkold J, Crews JE, Katz LJ, Hark L, **Girkin CA**, **Owsley C**, Francis B, Saaddine JB. Applying RE-AIM to evaluate two community-based programs designed to improve access to eye care for those at high-risk for glaucoma. *Evaluation and Program Planning*. 2017 December;65:40-46. PMID: 28689028

Publications

- Singletary BA, Do AN, Donnelly JP, Huisingh C, Mefford MT, Modi R, Mondesir FL, Ye Y, **Owsley C, McGwin G Jr.** Self-reported vs state-recorded motor vehicle collisions among older community dwelling individuals. *Accident Analysis & Prevention*. 2017 April;101:22-27. PMID: 28167421
- Song C, Mitter SK, Qi X, Beli E, Rao HV, Ding J, Ip CS, Gu H, Akin D, Dunn WA Jr, Bowes Rickman C, Lewin AS, **Grant MB, Boulton ME.** Oxidative stress-mediated NF κ B phosphorylation upregulates p62/SQSTM1 and promotes retinal pigmented epithelial cell survival through increased autophagy. *PLoS One*. 2017 February. 21;12(2). PMID: 28222108
- Spaide RF, **Curcio CA.** Evaluation of segmentation of the superficial and deep vascular layers of the retina by Optical Coherence Tomography angiography instruments in normal eyes. *JAMA Ophthalmology*. 2017 March;135(3):259-262. PMID: 28097291, doi: 10.1001/jamaophthalmol.2016.5327
- Stevens LF, Lapis Y, Tang X, Sander AM, **Dreer LE,** Hammond FM, Kreutzer JS, O'Neil-Pirozzi TM, Nakase-Richardson R. Relationship stability after Traumatic Brain Injury among veterans and service members: A VA TBI Model Systems study. *Journal of Head Trauma Rehabilitation*. 2017 July/August;32(4):234-244. PMID: 28520674
- Stevens M, Hastings SN, Markland AD, Hwang U, Hung W, Vandenberg AE, Bryan W, Cross D, Powers J, **McGwin G Jr,** Fattouh N, Ho W, Clevenger C, Vaughan CP. Enhancing Quality of Provider Practices for Older Adults in the Emergency Department (EQUIPPED). *Journal of the American Geriatrics Society*. 2017 July;65(7):1609-1614. PMID: 28388818
- Swain TA, **McGwin G Jr,** Griffin R. Laundry pod and non-pod detergent related emergency department visits occurring in children in the USA. *Injury Prevention*. 2016 December;22(6):396-399. PMID: 27339062
- Swain TA, **McGwin G Jr.** Yoga-related injuries in the united states from 2001 to 2014. *Orthopaedic Journal of Sports Medicine*. 2016 November;4(11): PMID: 27896293
- Swain TA, Tully AS, Redford T, **McGwin G Jr.** Hair removal-related injuries in the United States, 1991-2014. *Journal of Cosmetic Dermatology*. 2016 December;15(4):444-451. PMID: 27596260
- Swanson MW, Weise KK, **Dreer LE,** Johnston J, Davis RD, Ferguson D, Hale MH, Gould SJ, Christy JB, Busetini C, Lee SD, Swanson E. Academic difficulty and vision symptoms in children with concussion. *Optometry and Vision Science*. 2017 January;94(1):60-67. PMID: 27668641
- Sweeney AR, Shaftel SS, **Jacobs SM,** Jian-Amadi A. Lateral wall orbital decompression: Comparison of outcomes in rim sparing and temporary rim removal techniques. *J Craniofac Surg*. 2017;28(2):379-82.
- Tamimi EA, Pyne JD, Muli DK, Axman KF, Howerton SJ, Davis MR, **Girkin CA,** Vande Geest JP. Racioethnic differences in human posterior scleral and optic nerve stump deformation. *Investigative Ophthalmology & Visual Science*. 2017 August;58(10):4235-4246. PMID: 28846773
- Tan ACS, Astroz P, Dansingani KK, Slakter JS, Yannuzzi LA, **Curcio CA,** Freund KB. The evolution of the plateau, an Optical Coherence Tomography signature seen in geographic atrophy. *Investigative Ophthalmology & Visual Science*. 2017 April;58(4):2349-2358. PMID 28437524, doi: 10.1167/iovs.16-21237
- Thomas ED, Nugent EK, MacAllister MC, Moxley KM, Landrum L, L Walker J, McMeekin DS, Mannel RS, **McGwin G Jr,** Moore KN. Effectiveness of cyanoacrylate microbial sealant in the reduction of surgical site infection in gynecologic oncology procedures: A phase III single institution prospective randomized trial. *Gynecologic Oncology*. 2017 January;144(1):193-199. PMID: 27836205
- Tong Y, Ben Ami T, Hong S, Heintzmann R, Gerig G, Ablonczy Z, **Curcio CA,** Ach T, Smith RT. Hyperspectral autofluorescence imaging of drusen and retinal pigment epithelium in donor eyes with age-related macular degeneration. *Retina*. 2016 December;36 Suppl 1: S127-S136. PMID:28005671, doi: 10.1097/IAE.0000000000001325
- Turner DC, **Samuels BC,** Huisingh C, **Girkin CA, Downs JC.** The magnitude and time course of IOP change in response to body position change in nonhuman primates measured using continuous IOP telemetry. *Invest Ophthalmol Vis Sci*. 2017 December 1;58(14):6232-6240. doi: 10.1167/iovs.17-22858
- Ugarte-Gil MF, Pimentel-Quiroz VR, Vilá LM, Reveille JD, **McGwin G Jr,** Alarcón GS. Factors associated with disease expression patterns in systemic lupus erythematosus patients: Results from LUMINA (LXXVII), a multiethnic US cohort. *Lupus*. 2017 May;26(6):650-655. PMID: 27558795
- Vaphiades MS,** Grondines B. Occult acute macular neuroretinopathy. *Neuro-Ophthalmology*. 2017. Ahead of print.
- Vaphiades MS.** Pituitary ring sign plus sphenoid sinus mucosal thickening: Neuroimaging signs of pituitary apoplexy. *Neuro-ophthalmology*. 2017 [in press].
- Vaphiades MS,** Roberson GH. Imaging of oculomotor (third) cranial nerve palsy. *Neurologic Clinics*. 2017 February;35(1):101-113. PMID: 27886888

Publications

Williams JF, Watson SL, Baker DK, Ponce BA, **McGwin G Jr**, Gilbert SR, Khoury JG. Psychomotor testing for orthopedic residency applicants: A pilot study. *Journal of Surgical Education*. 2017 September/October;74(5):820-827. PMID: 28283375

Xu X, Liu X, Wang X, Clark ME, **McGwin G Jr**, **Owsley C**, **Curcio CA**, **Zhang Y**. Retinal pigment epithelium degeneration associated with subretinal drusenoid deposits in age-related macular degeneration. *American Journal of Ophthalmology*. 2017 March;175:87-98. PubMed PMID:27986424, doi: 10.1016/j.ajo.2016.11.021

Yan Y, Gao R, Trinh TLP, **Grant MB**. Immunodeficiency in pancreatic adenocarcinoma with diabetes revealed by comparative genomics. *Clinical Cancer Research*. 2017 July. PMID: 28684632.

Zanzottera EC, Ach T, Huisingh C, Messinger JD, Freund KB, **Curcio CA**. Visualizing retinal pigment epithelium phenotypes in the transition to atrophy in neovascular age-related macular degeneration. *Retina*. 2016 December;36 Suppl 1: S26-S39. PMID: 28005661, doi: 10.1097/IAE.0000000000001330

Zanzottera EC, Ach T, Huisingh C, Messinger JD, Spaide RF, **Curcio CA**. Visualizing retinal pigment epithelium phenotypes in the transition to geographic atrophy in age-related macular degeneration. *Retina*. 2016 December;36 Suppl 1:S12-S25. PMID: PMC5448560, doi: 10.1097/IAE.0000000000001276

Zarubina AV, Neely DC, Clark ME, Huisingh CE, **Samuels BC**, **Zhang Y**, **McGwin G Jr**, **Owsley C**, **Curcio CA**. Reply. *Ophthalmology*. 2017 February;124(2):e20-e21. PMID: 28126088, doi: 10.1016/j.ophtha.2016.09.032

Zhang Y, Wang X, Godara P, Zhang T, Clark ME, **Witherspoon CD**, Spaide RF, **Owsley C**, **Curcio CA**. Dynamism of dot subretinal drusenoid deposits in age-related macular degeneration demonstrated with adaptive optics imaging. *Retina*. 2017 February. PMID: 28196054, doi: 10.1097/IAE.0000000000001504

Zweifel SA, Mihic-Probst D, **Curcio CA**, Barthelmes D, Thielken A, Keller PM, Hasse B, Böni C. Clinical and histopathologic ocular findings in disseminated *Mycobacterium chimaera* infection after cardiothoracic surgery. *Ophthalmology*. 2017 February;124(2):178-188. PMID: 27871762

Invited Lectures & Presentations

LECTURES & PRESENTATIONS DISTRIBUTION

AMD/RETINA	26
GLAUCOMA	19
NEUROSCIENCE	17
PEDIATRICS/MYOPIA	12
LOW VISION/VISUAL PERFORMANCE	9
HEALTH SERVICES RESEARCH	7
OTHER	4
TOTAL:	94



Invited Lectures & Presentations

CHRISTINE A. CURCIO, PHD

“Visualizing Retinal Pigment Epithelium Fate in AMD by Histology and Optical Coherence Tomography.” 4th Biennial International Symposium on AMD, MEEI-Schepens, Boston, Massachusetts, October 2016

“Age-Related Macular Degeneration: Subretinal Drusenoid Deposits, Drusen, and the Biology of Rods and Cones.” Lions Eye Institute Seminar Series, University of Western Australia, Nedlands, November 2016

“Visualizing RPE Fate in AMD Through Validated Multimodal Imaging.” Save Sight Institute, University of Sydney, Australia, November 2016

“Basal Linear Deposit and Subretinal Drusenoid Deposit.” Australia-New Zealand Society of Retina Specialists, Festschrift for Shirley and John Sarks, Melbourne, Australia, November 2016

“Visualizing Neovascular AMD in Histology and Optical Coherence Tomography.” Royal Australia-New Zealand College of Ophthalmology, College Plenary Session, Melbourne, Australia, November 2016

“Histopathology of Choriocapillaris and RPE in Atrophic AM.” Advisory Board, Novartis Global Ophthalmics, London, United Kingdom, December 2016

“Approaches to Understanding Subretinal Tissue in Neovascular Age-Related Macular Degeneration.” Advisory Board, Novartis UK Ophthalmics, London, United Kingdom, December 2016

“Histological Guidance for SDOCT Atrophy Metrics in Age-Related Macular Degeneration.” Advisory Board, Novartis UK Ophthalmics, London, United Kingdom, December 2016

“The Specific Lesions of Age-Related Macular Degeneration and the Biology of Rods and Cones.” Queens University Belfast Centre of Experimental Medicine, Belfast, United Kingdom, December 2017

Invited Faculty. “Subretinal Drusenoid Deposits: Histology and High-Resolution Imaging.” Fourth International Congress on OCT Angiography and Advances in OCT, Rome, Italy, December 2016

Invited Faculty. “Validation of Mitochondria as Reflectivity Sources in Optical Coherence Tomography.” Fourth International Congress on OCT Angiography and Advances in OCT, Rome, Italy, December 2016

Invited Speaker. “Subretinal Drusenoid Deposits: Histology and High-Resolution Imaging.” ARVO-Asia 2017, Brisbane, Australia, February 2017

Invited Faculty. “The Oil Spill Strategies for AMD: Update and Model System.” Angiogenesis, Exudation, and Degeneration, Bascom Palmer Eye Institute, Miami, Florida, February 2017

Invited Lecturer. “Visualizing RPE Fate in Age-Related Macular Degeneration by Validated SDOCT – The Untold Story of Geographic Atrophy.” Grand Rounds, Department of Ophthalmology, University of Colorado Medical School, March 2017

Invited Lecturer. “Drusen in Age-Related Macular Degeneration: Pathology, Imaging, Model Systems, Therapeutics.” Vision Science Seminar, Department of Ophthalmology, University of Colorado Medical School, March 2017

Invited Faculty. “Müller Cells of Human Fovea: A Connectomics Approach.” International Retinal Imaging Symposium V, UCLA David Geffen School of Medicine, March 2017

“Visualizing RPE Fate Over Drusen in Age-Related Macular Degeneration.” Unity Biotechnology, Brisbane, California, March 2017

Invited Lecturer. “Specific Lesions of Age-Related Macular Degeneration and the Biology of Cones and Rods.” LuEsther Mertz Lectureship, Manhattan Eye and Ear Hospital, Northwell Health System, New York City, New York, April 2017

J. CRAWFORD DOWNS, PHD

“Optic Nerve Head Biomechanics in Aging and Disease.” International Conference on Diseases Involving Intraocular and Intracranial Pressure, Beijing, China, August 2016

“Lamina Cribrosa Remodeling in Glaucoma.” XXII Biennial Meeting of the International Society for Eye Research (ISER), Tokyo, Japan, September 2016

“Astrocytes and Biomechanics.” Optic Nerve Conference, Obergurgl, Austria, December 2016

Distinguished Lecturer Pro Tempore. “Ocular Biomechanics in Aging and Disease.” Cole Eye Institute, Cleveland Clinic, Cleveland, Ohio, January 2017

Invited Lecturer. “Ocular Biomechanics in Health, Aging, and Disease.” Grand Rounds, State University of New York (SUNY) – Downstate, Brooklyn, New York, February 2017

“IOP and Ocular Biomechanics in Health and Disease.” Celebrating 42 Years in Sight, USC Roski Eye Institute Annual Symposium, Los Angeles, California, June 2017

Invited Lectures & Presentations

Featured Scientist. “*See How Dynamic Pressures in the Eye and Brain Provide a New Framework for Understanding Glaucoma.*” An Evening with BrightFocus, Foundation Fundraiser and Gala, Washington, D.C., June 2017

Faculty Lecturer. “*Continuous Invasive and Non-Invasive IOP Monitoring – Present/Future.*” 7th World Glaucoma Congress, Helsinki, Finland, June 2017

Faculty Lecturer. “*IOP Variability.*” Faculty Lecturer in the “New Frontiers in Glaucoma” Session, 7th World Glaucoma Congress, Helsinki, Finland, July 2017

LAURA E. DREER, PHD

Invited Presentation. “*Traumatic Brain Injury as a Chronic Health Condition.*” Symposium Between Divisions 22 (Rehabilitation Psychology) and 19 (Military), American Psychological Association, Annual Convention, Denver, Colorado, August 2016

Invited presentation. “*The Role of Social Support for Persons with Low Vision.*” Invited Research Presenter by the Alabama Department of Rehabilitation Services (ADRS), October 2016

Invited Lecture. “*Examination of Nutrition, Physical Activity, Lifestyle Factors, and Weight Management Among Persons with TBI: Findings from the Weight Module.*” Traumatic Brain Injury Model Systems (TBIMS) Project Directors’ Meeting, Washington, D.C., June 2017

“*Return-to-Think: How is Learning Affected?*” 4th Annual Concussion Summit, Children’s of Alabama Hospital, Birmingham, Alabama, April 2017

Invited Speaker. “*Low Vision, Stroke, and Adjustment: Treating the Whole Person.*” Education Committee at the VA Blind Rehabilitation Center, Birmingham, Alabama. Oral presentation at the Stroke and Vision Rehabilitation Conference, Birmingham, Alabama, October 2016

“*Communication Post-Concussion: Helping Pave the Road to Recovery.*” 4th Annual Concussion Summit, Children’s of Alabama Hospital, Birmingham, Alabama, April 2017

“*UAB/Children’s of Alabama Concussion Research Initiatives, Opportunities, and Updates: Translating Science into Better Prevention, Detection, and Management of Concussions.*” 4th Annual Concussion Summit, Children’s of Alabama Hospital, Birmingham, Alabama, April 2017

MASSIMO ANTONIO FAZIO, PHD

“*In-Vivo Quantification of Biomechanics and Morphometry Across Ocular Disease.*” Xtreme Research Award Lecture, Baltimore, Maryland, 2017

“*Ocular Connective Tissue Biomechanics Assessment by Means of Non-Contact Optical Techniques.*” Computational and Mathematical Biomedical Engineering (CMBE), Pittsburgh, Pennsylvania, March 2017

MARCELA FRAZIER, OD, MPH, FFAO

“*Technology in Amblyopia Treatment.*” Rio De Janeiro, Brazil, November 2016

Alabama Chapter of the American Academy of Pediatrics, Vision Symposium, Destin, Florida, May 2017

Pediatric Eye Examination Workshop, COMOF Mexican Optometric Association Annual Meeting, Merida, Mexico, September 2017

Poster Presentation. “*Can the Beery VMI be Used for Children with Low Vision?*” American Academy of Optometry Meeting, Chicago, Illinois, October 2017

“*Technology in Amblyopia Treatment.*” FEDOPTO Colombian Optometric Association Medellin, Colombia, October 2017

“*Technology in Amblyopia Treatment.*” Panama Optometric Association Meeting, Panama, November 2017

PAUL D. GAMLIN, PHD

“*Intrinsically-Photosensitive Ganglion Cells: Anatomy, Physiology and Behavioral Roles.*” Borish Scholar, School of Optometry, Indiana University, December 2016

“*Intrinsically-Photosensitive Ganglion Cells: Anatomy, Physiology and Behavioral Roles.*” University of Pisa, Pisa, Italy, September 2017

CHRISTOPHER A. GIRKIN, MD, MSPH, FACS

“*It’s Not Glaucoma: Visual Field Loss Due to Neurological Causes.*” Glaucoma Subspecialty Day. Annual Meeting of the American Academy of Ophthalmology. Chicago, IL. October 2016

“*Enhanced Detection and Clinical Assessment in Glaucoma Management.*” AAO/Heidelberg Engineering Technology Symposium. American Academy of Ophthalmology. Chicago, IL. October 2016

“*The Implications of Variation in Three-Dimensional Morphometry of the Human Lamina Cribrosa on the Pathogenesis of Glaucoma.*” University of Kentucky Annual Research Symposium. Lexington, Kentucky. April 2017

52nd Annual C.S. O’Brien Professorship Lecture. “*The Implications of Variation in Three-Dimensional Morphometry of the Human Lamina Cribrosa on the Pathogenesis of Glaucoma.*” 39th Annual Tulane Eye Alumni Day. Tulane University Health Sciences Center, Department of Ophthalmology. June 2017

Invited Lectures & Presentations

MARIA GRANT, MD

Cedars-Sinai Regenerative Medicine Seminar, June 2017

RAFAEL GRYTZ, PHD

Invited Lecturer. *"How Collagen Remodeling Shapes our Eyes and Produces Clear Vision."* Sigma Xi Lecture, University of Alabama at Birmingham, Birmingham, Alabama, March 2017

"What Determines the Final Size of the Eye? Scleral Growth versus Scleral Remodeling." Vision Science Research Center, University of Alabama at Birmingham, Birmingham, Alabama, March 2017

"Insight from Computational Models on Scleral Growth and Remodeling in Myopia." Special Interest Group on Beyond Axial Length: Modern Imaging Biomarkers for Better Understanding Myopia Development and Progression, (Panelist), Association for Research in Vision and Ophthalmology Annual Meeting (ARVO), Baltimore, Maryland, May 2017

"How Scleral Growth and Remodeling Shapes our Eyes and Produces Clear Vision." Department of Biomedical Engineering, Georgia Institute of Technology & Emory University School of Medicine, Atlanta, Georgia, June 2017

TYLER A. HALL, MD

"Common Eye Problems." Alabama Academy of Family Physicians, Fall Forum, December 2016

"Corneal Cross-Linking: Principles, Indications, & Controversies." University of Alabama at Birmingham School of Optometry, Primary Eye Care Update, April 2017

"Cataract Surgery in Special Situations." University of Alabama at Birmingham School of Optometry, Primary Eye Care Update, April 2017

SARAH MIRELES JACOBS, MD

Video Presentation. *"Blepharoptosis Repair Technique with Hangback Sutures and Intraoperative Adjustment."* American Society for Ophthalmic Plastic and Reconstructive Surgery, November 2017

LANNING B. KLINE, MD

"Optic Neuritis: The Typical, the Atypical, and the Nonexistent." Breakfast with the experts, Annual meeting of the American Academy of Ophthalmology, Chicago, Illinois, October 2016

"Curbside Consultation in Neuro-Ophthalmology." Instruction course at the Annual Meeting of the American Academy of Ophthalmology, Chicago, Illinois, October 2016

Moderator. *"Neuro-Ophthalmology Original Papers."*

Symposium at the Annual Meeting of the American Academy of Ophthalmology, Chicago, Illinois, October 2016

Invited Speaker. Taiwan Academy of Ophthalmology, Taipei, Taiwan, March 2017

Invited Speaker. The 42nd Anniversary Symposium of USC Roski Eye Institute, Los Angeles, California, June 2017

Invited Speaker. Forum for Indian Neurology Education (FINE). Neuro- Ophthalmology and Neuro-Otology Course, Mumbai, India, August 2017

Carol Zimmerman Lecture, Department of Ophthalmology, University of Texas Southwestern Medical Center, Dallas, Texas, 2016

MIYOUNG KWON, PHD

Invited Lecture. *"Changes in Spatial and Temporal Integration in Impaired Vision."* Minnesota Laboratory for Low-Vision Research, University of Minnesota, Minneapolis, August 2016

"Understanding Perceptual Factors Limiting Reading Speed in People with Visual Field Defects." Association for Research in Vision and Ophthalmology Annual Meeting, Baltimore, Maryland, May 2017

Invited Lecture. *"Perceptual Issues in Impaired Vision."*

Department of Psychology, University of Alabama at Birmingham (UAB), October 2016

SARAH DILLE LEE, OD, MSPH, FFAO

Guest Lecturer. *"Examining Children with Special Needs."* UAB School of Optometry in the Pediatrics Course, Spring 2017

Poster Presentation. *"Evaluation of Feasibility and Acceptability of the Convergence Insufficiency Symptom Survey for Concussion (CISS-CON) Among Concussed Youth."* Association of Researchers in Vision and Ophthalmology (ARVO), Baltimore, Maryland, May 2017

Poster Presentation. *"Can the Beery VMI be Used for Children with Low Vision?"* American Academy of Optometry (AAO), Chicago, Illinois, October 2017

JOHN O. MASON, MD

"Visual Outcomes of Patients Undergoing Vitrectomy for Macular Pucker with Good Initial Vision." UAB Alumni Day, 2017

"Visual Outcomes After Ozurdex for Chronic DME in Patients That Had Existing Iluvien Implant." UAB Alumni Day, 2017

Invited Lectures & Presentations

Poster Presentation. *“Treatment Outcomes and Follow-up Compliance Rates of Kenyan Patients with Diabetic Macular Edema.”* AAO, New Orleans, Louisiana, 2017

Poster Presentation. *“Fluocinolone Acetonide Intravitreal Implant vs. Combined Vitrectomy with Implant for Chronic Diabetic Macular Edema.”* AAO, New Orleans, Louisiana, 2017

“25 Gauge Sutureless PPV versus Observation for Hemorrhagic PVD.” AAO, New Orleans, Louisiana, 2017

CYNTHIA OWSLEY, PHD, MSPH

Invited Lecture. *“Delayed Dark Adaptation as a Functional Biomarker for Early AMD.”* Medical College of Wisconsin, Eye Institute, Milwaukee, Wisconsin, October 2016

Invited Presentation. *“Low Vision Care in the United States: Who is Doing What and What is Needed.”* American Academy of Ophthalmology Annual Meeting, Chicago, Illinois, October 2016

Invited Symposium Speaker. *“Visual and Ophthalmic Risk Factors for Motor Vehicle Collision Involvement by Older Drivers.”* Association for Research in Vision and Ophthalmology Annual Meeting, Baltimore, Maryland, May 2017

LYNE RACETTE, PHD

“An Individualized Approach to Monitor Glaucoma Progression Using Structural and Functional Information Jointly.” 32nd Asia-Pacific Academy of Ophthalmology (APAO) Congress, Singapore, March 2017

“A New Approach to Monitor Glaucoma Progression.” Summer Vision Science Seminar Series, Ohio State University, Columbus, Ohio, May 2017

SHILPA REGISTER, OD

“Integration of Simulation Throughout Medical Education to Support Effective Collaboration Within Interprofessional Teams.” Entrusting Professional Activities (EPA) Across the Continuum Poster Session at Learn Serve Lead 2016, The AAMC Annual Meeting, Seattle, Washington, November 2016

Debriefing for Interprofessional Simulation, Collaborating Across Borders VI, 2017

“Learning About Poverty Through Large Scale Interprofessional Simulations.” 17th International Meeting on Simulation in Healthcare, Orlando, Florida, January 2017

“Modeling Interprofessional Behavior: High Expectations, High Regard.” The National Academies of Practice Annual Meeting and Forum, Philadelphia, Pennsylvania, March 2017

LINDSAY RHODES, MD

Invited Presentation. *“Using Telemedicine to Improve Glaucoma Care in the Community.”* American Academy of Ophthalmology Annual Meeting, Chicago, Illinois, October 2016

Invited Presentation. *“Using Telemedicine for Glaucoma Care in the Community.”* Alabama Vision Coalition Vision Summit, Birmingham, Alabama, October 2016

BRIAN C. SAMUELS, MD, PHD

“Tree Shrew – A ‘Rodent’ Model for Lamina Cribrosa.” 7th World Glaucoma Congress, Helsinki, Finland, June 2017

“The Tree Shrew Model of Glaucoma.” Brightfocus/ISER 2017 Glaucoma Symposium, Atlanta, Georgia, October 2017

“CNS Control of Intraocular and Intracranial Pressure.” Optometric Glaucoma Society: 16th Annual Scientific Meeting, Chicago, Illinois, October 2017

MICHAEL S. VAPHIADES, DO

“Macular Degeneration and the Role of Lipids in Macular Disorders.” Alabama Osteopathic Medical Association Science & Management CME Conference, Birmingham, Alabama, February 2017

C. DOUGLAS WITHERSPOON, MD, FACS

“On-Site Emergency Evaluation of Eye Injury Patients for EMS Professionals.” Southern Regional EMS Coordinators Meeting, Birmingham, Alabama, August 2017

Poster Presentation. *“Do Subretinal Drusenoid Deposits Have a Spectral Fingerprint?”* Association for Research in Vision and Ophthalmology, 2017

YUHUA ZHANG, PHD

Invited Lecturer. *“Ultrastructure of Chorioretinal Diseases.”* University of California Davis Eye Center, Sacramento, California, March 2017

Invited Lecturer. *“Adaptive Optics Imaging of Chorioretinal Diseases.”* Department of Biomedical Engineering, University of California at Davis, Davis, California, March 2017

Grants & Awards

GRANTS DISTRIBUTION

AMD/RETINA	12
GLAUCOMA	11
NEUROSCIENCE	7
CELL/GENE THERAPY	5
DIABETES	5
LOW VISION/VISUAL PREFORMANCE	5
OTHER	3
TOTAL: 48	



MICHAEL A. ALBERT JR., MD

Safety and Efficacy of Abicipar Pegol in Patients with Neovascular Age-Related Macular Degeneration; Allergan Sales, LLC; 11/10/2015-05/31/2020

ANN MARIE ARCINIEGAS-BERNAL, MD

An Observational, Multicenter Study of the Prevalence of Cerebrotendinous Xanthomatosis (CTX) in Patient Populations Diagnosed with Early-Onset Idiopathic Bilateral Cataracts; Retrophin, Inc.; 06/21/2017-06/20/2019

MICHAEL E. BOULTON, PHD

Optimizing Systemic Stem/Progenitor Cell Therapy for AMD; NEI/NIH/DHHS; 09/01/2017-08/31/2018

CHRISTINE A. CURCIO, PHD

Single Cell Sequencing of Retinal Cells; The University of Pennsylvania; 01/01/2017-12/31/2017

Clinicopathologic Correlation in Age-Related Macular Degeneration; F. Hoffmann-La Roche Ltd.; 11/10/2016-05/09/2018

A Hyperspectral Approach to RPE Fluorophores in AMD; NEI/NIH/DHHS; 07/01/2017-06/30/2021

Visualizing Aging in the Eye: A Personalized Strategy for Preserving Vision in the Aging Population in Europe; Medical University of Vienna; 07/01/2015-03/31/2018

DAWN K. DECARLO, OS, MS, MSPH

Prognostic Indicators for Reading and Pediatric Vision Impairment; Administration for Community Living/DHHS; 09/30/2015-09/29/2018

LAURA E. DREER, PHD

Enhancing Glaucoma Medication Adherence Among African Americans; NEI/NIH/DHHS; 06/01/2015-08/31/2020

Mitchel Rosenthal Award for Best Scientific Publication in 2016 Using the NIDILRR-Funded Traumatic Brain Injury Model Systems National Database. 2017

J. CRAWFORD DOWNS, PHD

Continuous Telemetric Measurement and Chronic Control of Cerebrospinal Fluid Pressure; BrightFocus Foundation; 07/01/2016-06/30/2018

IOP and OPP Fluctuation as Risk Factors for Glaucoma; NEI/NIH/DHHS; 05/01/2015-04/30/2018

IOP and OPP Fluctuation as Risk Factors for Glaucoma; NEI/NIH/DHHS; 12/01/2015-11/30/2019

MASSIMO ANTONIO FAZIO, PHD

African Descent and Glaucoma Evaluation (ADAGES) IV: Alterations of the Lamina Cribrosa in Progression; NEI/NIH/DHHS; 04/01/2017-03/31/2021

The Influence of Ocular Remodeling on Glaucoma; NIH/NEI; 04/01/2017-01/31/2022

Xtreme Research Award; Heidelberg Engineering; May 2017

Grants & Awards

RICHARD M. FEIST, MD

A Phase III, Multicenter, Randomized, Double-Masked, Sham-Controlled Study to Assess the Efficacy and Safety of Lampalizumab Administered Intravitreally to Patients with Geographic Atrophy Secondary to Age Related Macular Degeneration; F. Hoffmann-La Roche Ltd.; 11/04/2014-11/03/2017

A Multicenter, Open-Label Extension Study to Evaluate the Long-Term Safety and Tolerability of Lampalizumab in Patients with Geographic Atrophy Secondary to Age-Related Macular Degeneration Who Have Completed a Roche-Sponsored Study; F. Hoffmann-La Roche Ltd.; 05/01/2017-04/30/2019

PRISCILLA FOWLER, MD

Zoster Eye Disease Study (ZEDS): A Multi-Center, Randomized, Double-Masked, Placebo-Controlled Clinical Trial of Suppressive Valacyclovir for One Year in Immunocompetent Study Participants with a History of Dendriform Epithelial Keratitis, Stromal Keratitis, Endothelial Keratitis, and/or Iritis Due to Herpes Zoster Ophthalmicus (HZO) in the Year Prior to Enrollment. 06/30/2017-06/29/2022

PAUL D. GAMLIN, PHD

Midbrain Circuitry for Neuronal Control of Gaze; University of Mississippi Medical Center; 04/01/2015-03/31/2019

Motor Unit Diversity in Horizontal Eye Movement Control; NEI/NIH/DHHS; 08/01/2012-07/31/2017

Melanopsin Photosensitivity and Psychopathology; University of Pittsburgh; 09/14/2014-07/31/2018

Research to Prevent Blindness Disney Award for Amblyopia Research; Research to Prevent Blindness; 06/13/2014-06/12/2019

Intrinsically Photosensitive Retinal Ganglion Cells and Their Central Projections; NEI/NIH/DHHS; 12/01/2015-11/30/2020

Gene Editing Using the CRISPR/Cas9 System in Primate Retina; EDITAS; 02/26/2016-02/25/2018

Developing Efficient AAV Vectors for Photoreceptor Targeting via the Vitreous; University of Florida; 06/30/2015-06/29/2019

Screening of Novel AAV Library in Non-Human Primate; Applied Genetic Technologies Corporation; 07/01/2014-09/01/2017

R11 Track-2 FEC: Bridging Cognitive Science and Neuroscience Using Innovative Imaging Technologies; Medical University of South Carolina; 08/01/2015-07/31/2019

CHRISTOPHER A. GIRKIN, MD, MSPH, FACS

Unrestricted Grant; Research to Prevent Blindness; 01/01/2013-12/31/2017

ADAGES III: Contribution of genotype to glaucoma phenotype in African Americans; University of California-San Diego; 09/01/2013-08/31/2018

Enhancing Glaucoma Medication Adherence Among African Americans; 06/01/2015-05/31/2020

Using Telemedicine to Improve Glaucoma Care: An Emerging Eye Care Delivery Model; 03/01/2016-02/28/2020

African Descent and Glaucoma Evaluation (ADAGES) IV: Alterations of the Lamina Cribrosa in Progression.

MARIA GRANT, MD

Somatostatin Blockade of CNS Autonomic Hyperactivity for Treatment of Diabetic Retinopathy; NEI/NIH/DHHS; 09/30/2017-05/31/2021

LXR as a Novel Therapeutic Target in Diabetic Retinopathy; NEI/NIH/DHHS; 09/01/2017-08/31/2019

Dyslipidemia and Diabetic Retinopathy; Michigan State University; 07/01/2017-11/30/2020

Human iPSC for Repair of Vasodegenerative Vessels in Diabetic Retinopathy 6/30/2016- 7/1/2020

RAFAEL GRYTZ, PHD

Scleral Remodeling in Myopia; NEI/NIH/DHHS; 09/07/2016-08/31/2021

The Influence of Ocular Remodeling on Glaucoma; NEI/NIH/DHHS; 04/01/2017-03/31/2022

TYLER A. HALL, MD

Eye Bank Association of America: Physician Leadership Program. February 25-26, 2017

MIYOUNG KWON, PHD

Perceptual Mechanisms Underlying Reading Difficulties in Glaucoma; NEI/NIH/DHHS; 09/01/2017-06/30/2022

Age-Related Macular Degeneration, Scotopic Dysfunction, and Driving Performance in a Simulator; The Roybal Center NIA P30 Grant; 06/1/2017-05/31/2018

Compensatory Perceptual and Cortical Changes Following Prolonged Blurred Vision; UAB Civitan International Research Center MRI Pilot Grant; 10/26/2016-10/26/2017

Grants & Awards

ANDREW MAYS, MD

A Prospective, Double-Masked, Randomized, Multi-Center, Active-Controlled, Parallel-Group 12-Month Study Assessing the Safety and Ocular Hypotensive Efficacy of PG324 Ophthalmic Solution Compared to AR-3324 Ophthalmic Solution, 0.02% and Latanoprost Ophthalmic Solution, 0.005% in Subjects with Elevated Intraocular Pressure; Aerie Pharmaceuticals, Inc.; 11/09/2015-11/08/2018

CYNTHIA OWSLEY, PHD, MSPH

Older Drivers and Vision Impairment: Naturalistic Driving Studies; NEI/NIH/DHHS; 04/01/2008-03/31/2019

Inflammatory, Cholesterol and Genetic Characteristics in Older Adults in Normal Retinal Health as Potential Biomarkers for the Incident Development of Early Age-Related Maculopathy; EyeSight Foundation of Alabama; 07/01/2010-06/30/2018

Visual Risk Factors for Motor Vehicle Collision Involvement: SHRP2; NEI/NIH/DHHS; 04/01/2017-03/31/2019

LYNE RACETTE, PHD

Early Detection of Glaucoma Progression Using a Novel Individualized Approach; NEI/NIH/DHHS; 08/01/2017-07/31/2021

RUSSELL W. READ, MD, PHD

A Phase 3 Randomized, Double-Masked, Vehicle-Controlled Trial to Evaluate the Safety and Efficacy of ADX-102 Ophthalmic Solution in Subjects with Non-infectious Anterior Uveitis; Aldeyra Therapeutics, Inc.; 09/08/2017-09/07/2019

SHILPA REGISTER, OD

2018 Individual Performance as a Member of a Healthcare Team Tool Development Pilot Project Proposal; UAB Quality Enhancement Program

2015-2018 NACDD Vision and Eye Health Initiative; FOA #12015A; Alabama Department of Public Health

Telehealth Services for the Appalachian Region-Connecting Patients to Providers at County Health Departments; Alabama Appalachian Regional Commission; Alabama Vision Coalition; 2017

2017 Individual Performance as a Member of a Healthcare Team Tool Development Pilot Project Proposal; UAB Quality Enhancement Program

2016 Incorporating Peer Assessment to Enhance Interprofessional Education in a Simulation Patient Care Environment; SOM, Department of Medical Education PROSPER Curricular Enrichment and Innovations Award

LINDSAY RHODES, MD

Using Telemedicine to Improve Glaucoma Care: An Emerging Eye Care Delivery Model; NEI/NIH/DHHS; 05/01/2016-04/30/2021

BRIAN C. SAMUELS, MD, PHD

VIIP Simulations of CSF, Hemodynamics and Ocular Risk (VIIP SCHOLAR); Georgia Institute of Technology (NASA); 10/01/2016-09/30/2019

Validation of the Tree Shrew as Model of Glaucoma; NEI/NIH/DHHS; 09/01/2016-08/31/2018

Central Nervous System Control of Intraocular and Intracranial Pressure; NEI/NIH/DHHS; 02/01/2017-01/31/2022

The Influence of Ocular Remodeling on Glaucoma; NEI/NIH/DHHS; 4/1/2017-3/31/2022

Tree Shrew Optic Nerve Biomechanics; Research to Prevent Blindness Physician-Scientist Award; 12/15/2017-12/14/2019

SHU-ZHEN WANG, PHD

Engaging the RPE for Photoreceptor Regeneration; NEI/NIH/DHHS; 09/30/2016-09/29/2018

YUHUA ZHANG, PHD

In Vivo Ultrastructure of Chorioretinal Disease; NEI/NIH/DHHS; 01/01/2015-12/31/2019



A special thanks to our contributors:

Produced by UAB Medicine

*Project Coordinators:
Coleman Upchurch and Jessica Martindale*

*Art Director:
Erick Guillen*

*Editor:
Don Milazzo*

*Writers:
Amy Bickers, Jessica Martindale,
and David Pelfrey*

*Photographers:
Nik Layman, Jessica Martindale,
Jennifer Spears, and Steve Wood*

*Contributors:
Andrea Bevan
Jackie Wood
Morgan Quarles*

UAB MEDICINE

CALLAHAN EYE HOSPITAL & CLINICS
DEPARTMENT OF OPHTHALMOLOGY
AND VISUAL SCIENCES

UAB Callahan Eye Hospital
1720 University Blvd.
Suite 305
Birmingham, AL 35233

NON PROFIT
U.S. Postage
PAID
Permit #1256
Birmingham, AL