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,

Christopher A. Girkin, MD, MSPH, FACS
EyeSight Foundation of Alabama Chair, UAB Department of Ophthalmology and Visual Sciences

Rett Grover, MSHA, MBA
Interim Chief Executive Officer
UAB Callahan Eye Hospital & Clinics
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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

TOTAL FUNDING $11.2 MILLION

- $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

- CATARACT: 5,369
- RETINA: 3,138
- PLASTICS: 1,838
- CORNEA: 737
- GLAUCOMA: 677
- ENT: 188

DEDICATED EYE CARE FACILITY

- 11,947 SURGERY PROCEDURES
- 2,635 LASER PROCEDURES
- 1-IN-4 CASES AT UAB MEDICINE ARE PERFORMED AT CALLAHAN

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 GROWTH

2012 2013 2014 2015 2016 2017

29 35 38 40 45 49

FACULTY CLINICS
AFFILIATE CLINICS
TEACHING CLINICS
RESEARCH
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

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.
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.
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.
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.

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 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.”
RESEARCH

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.

GENTLE 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 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*
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.
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.
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
EDUCATION

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 the eye.”

– Brian Samuels, MD, PhD

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 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 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
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 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.”
Donor Spotlight: Research Support Fund Renamed to Honor Grandson

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

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

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.
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

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

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

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 $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.

CAMPAIGN GOAL: $1 BILLION

$857,591,948

$553,395,432*

*Funds contributed by UAB School of Medicine Supporters

As of December 31, 2017

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“"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
Development Officer
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.”

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.
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)

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
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Residency: University of Alabama at Birmingham
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CLINICAL SPECIALTY: Comprehensive

J. CRAWFORD DOWNS, PHD
EDUCATION
Master’s Degrees: Tulane University
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

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

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

MARTIN S. COGEN, 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

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
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, Oculoplastic; Assistant Professor
CLINICAL SPECIALTY: Oculoplastic

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
<table>
<thead>
<tr>
<th>NAME</th>
<th>EDUCATION</th>
<th>CLINICAL SPECIALTY</th>
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<tr>
<td>LANNING B. KLINE, MD</td>
<td>Medical School: Duke University</td>
<td>Neuro-ophthalmology</td>
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<td></td>
<td>Residency: McGill University</td>
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<td>Fellowship: Bascom Palmer Eye Institute,</td>
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<td>University of Miami; Montreal Neurological</td>
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<td></td>
<td><strong>TITLE:</strong> Professor</td>
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<tr>
<td>MIYOUNG KWON, PHD</td>
<td>Doctoral Degree: University of Minnesota</td>
<td>Low vision and spatial vision</td>
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<td>California; Schepens Eye Research Institute,</td>
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<td>SARAH DILLE LEE, OD, MSPH,</td>
<td>Doctoral Degree: University of Alabama at</td>
<td>Comprehensive</td>
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<td>FAAO</td>
<td>Birmingham, School of Optometry</td>
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<td>Postdoctoral Training: University of Alabama</td>
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<td>MARISSA K. LOCY, OD</td>
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<td><strong>TITLE:</strong> Instructor</td>
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<tr>
<td>VIRGINIA Lolley, MD, FACS</td>
<td>Medical School: Tulane University School of</td>
<td>Comprehensive, refractive cataract surgery</td>
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<td>Medicine</td>
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<td>Residency: University of Alabama at Birmingham</td>
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<tr>
<td>JOHN O. MASON, MD</td>
<td>Medical School: University of Alabama at</td>
<td>Retina and vitreous</td>
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<td>Fellowship: Wills Eye Hospital, Philadelphia,</td>
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<tr>
<td>ANDREW MAYS, MD</td>
<td>Medical School: University of Alabama at</td>
<td>Glaucoma</td>
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<td><strong>TITLE:</strong> Associate Professor</td>
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<tr>
<td>CECIL JAMES MCCOLLUM, MD</td>
<td>Medical School: University of Alabama at</td>
<td>Emergency Services, cornea</td>
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<td>Residency: University of Alabama at Birmingham</td>
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<td><strong>TITLE:</strong> Director of Emergency Services,</td>
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<td></td>
<td>Clinical Assistant Professor</td>
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<tr>
<td>SARAH MULLINS, MD</td>
<td>Medical School: LSU Health Sciences, Shreveport</td>
<td>Comprehensive</td>
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<td></td>
<td>Residency: University of Alabama at Birmingham</td>
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<td><strong>TITLE:</strong> Instructor</td>
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<tr>
<td>CYNTHIA OWSLEY, PHD, MSPH</td>
<td>Master’s Degree: University of Alabama at</td>
<td>Aging-related vision impairment and eye</td>
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<tr>
<td></td>
<td>Birmingham</td>
<td>disease; functional biomarkers for</td>
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<td></td>
<td>Doctoral Degree: Cornell University</td>
<td>age-related macular degeneration; vision</td>
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<td></td>
<td>Postdoctoral Training: Northwestern University</td>
<td>and driving; improving eye care access and</td>
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<tr>
<td></td>
<td><strong>TITLE:</strong> Vice Chair of Research; Nathan E.</td>
<td>quality for underserved populations</td>
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<tr>
<td></td>
<td>Miles Chair of Ophthalmology; Director,</td>
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<td></td>
<td>Clinical Research Unit; Professor</td>
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<tr>
<td>LYNE RACETTE, PHD</td>
<td>Doctoral Degree: Carleton University, Ottawa,</td>
<td>Glaucoma</td>
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<tr>
<td></td>
<td>Canada</td>
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<td></td>
<td>Postdoctoral Fellowship: University of California</td>
<td>San Diego</td>
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<td><strong>TITLE:</strong> Associate Professor</td>
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<tr>
<td>RUSSELL W. READ, MD, PHD</td>
<td>Residency: University of Washington Seattle</td>
<td>Uveitis/ocular inflammatory disease</td>
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<td>Fellowship: Doheny Eye Institute, University</td>
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<td>of Southern California</td>
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<td></td>
<td><strong>TITLE:</strong> Residency Director; Max and Lorayne</td>
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<tr>
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<td>Cooper Professor</td>
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<tr>
<td></td>
<td><strong>RESEARCH INTEREST:</strong> Health disparities in</td>
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<td>uveitis outcomes</td>
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</tr>
</tbody>
</table>
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: Primary eye care

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

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

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

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

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


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)

**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/iovs.17-21872


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


Lee S, Elskandrany M, Lau LF, Lazzaro D, Grant MB, Chaquor 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


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


Publications


Publications


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Invited Lectures & Presentations

**LECTURES & PRESENTATIONS DISTRIBUTION**

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<td>TOTAL:</td>
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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 Seminar Series, 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


“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 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


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


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


“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, FAAO
“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


“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


-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

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

sarah dille lee, od, msph, faao
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


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

LINDSAY RHODES, MD


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 Intracocular 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


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

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


LYNE RACETTE, PHD

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

SHILPA REGISTER, OD

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


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

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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 ofSuppressive 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; 07/01/2017-11/30/2020

RIL 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; 03/01/2016-02/28/202

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

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 OWSELY, 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

SHI-PAA 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; 07/01/2017-03/31/2022
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

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