

# This Is Why.

2020 Annual Report | Alzheimer's Disease Research | Macular Degeneration Research | National Glaucoma Research



## Inside

<i>Alzheimer's Disease Research</i>	6
<i>Macular Degeneration Research</i>	10
<i>National Glaucoma Research</i>	14
<i>2020 Grant Recipients</i>	18
<i>Scientific Review Committees</i>	24
<i>Partnerships for a Cure</i>	26
<i>Investing in a Cure</i>	28
<i>Financial Highlights</i>	38
<i>Board &amp; Leadership</i>	39

# Over 322 Million Impacted.

## Which is why we'll never quit.

In 2020, an estimated 322 million people worldwide are currently living with Alzheimer's, macular degeneration and/or glaucoma. Our three scientific research programs are *Alzheimer's Disease Research*, *Macular Degeneration Research*, and *National Glaucoma Research*.



## Our Mission

BrightFocus funds exceptional scientific research worldwide to defeat Alzheimer's disease, macular degeneration, and glaucoma, and provides expert information on these heartbreaking diseases.

## DEAR FRIENDS,

2020 has been a year of great adversity and uncertainty, and also a sharp reminder of how precious life is and how much we value both those we love and the experiences we treasure.

Our annual report is titled *This is Why*, because this year powerfully reaffirms why, at BrightFocus, we relentlessly pursue a mission of innovative science to save mind and sight, to better the quality of life for our children, grandchildren, and generations to come.

On the following pages, you will meet several of the many hundreds of researchers we have funded around the world. You will discover their “why” – what fuels their lifelong pursuit of the bold “what-if’s” of scientific discovery.

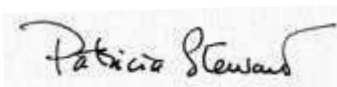
You will meet several of the many thousands of donors across the country who each year support BrightFocus and its three scientific programs: Alzheimer’s Disease Research, Macular Degeneration Research, and National Glaucoma Research. Their generosity and loyalty inspire us daily, a shared belief that research equals hope.

More than ever, the need for innovative science is abundantly clear. This is why in 2020 we awarded \$17.8 million for 93 new grants, a single-year record level of support, with 70 percent going toward testing the bold ideas of early-career researchers.

We hope *This is Why* gives you a glimpse into the creativity and brilliance of the scientists we partner with, and the selfless, unyielding commitment of our donors, staff, and Board. No matter how great the challenges may seem, we fully believe there will be a day when these diseases become a thing of the past.



**Stacy Pagos Haller**  
President and CEO



**Patricia McGlothlin Stewart, CFP**  
Chair, Board of Directors

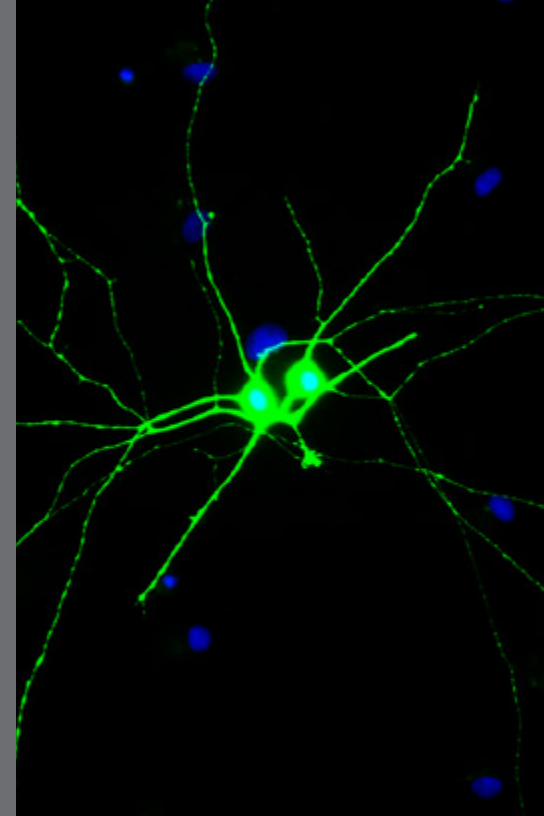


# 10,000 AMERICANS TURN 65 EVERY DAY

*Left: Alzheimer’s Fast Track workshop session.*

# NEARLY \$50M IN RESEARCH IN LAST THREE YEARS ALONE

*Right: Retinal ganglion cells (green) differentiated from human pluripotent stem cells. (Courtesy of Meyer Lab, Indiana University)*





FUNDING  
RESEARCH IN  
**25**  
COUNTRIES

*Left: Marilyn Nadolny, one of our Donor Spotlights. (featured on page 30)*



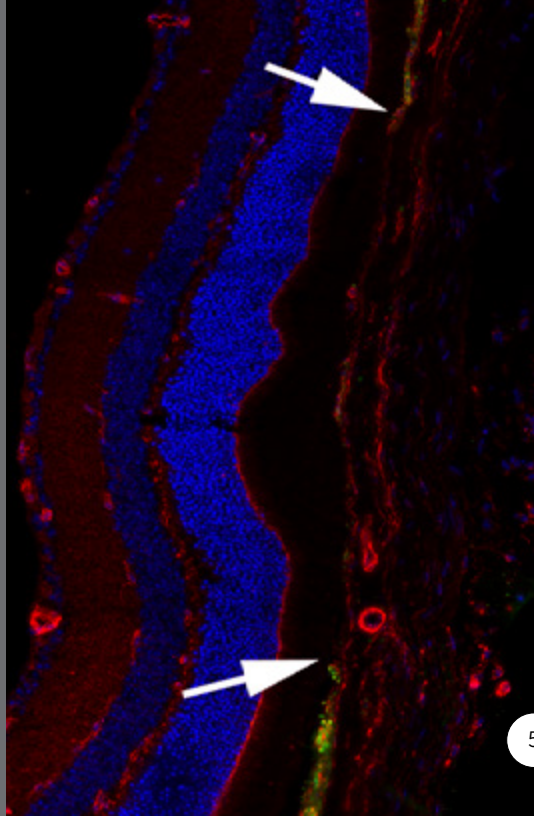
**93**  
NEW  
RESEARCH  
GRANTS

*Left: Colleen McDowell, PhD, University of Wisconsin-Madison at Glaucoma Fast Track.*

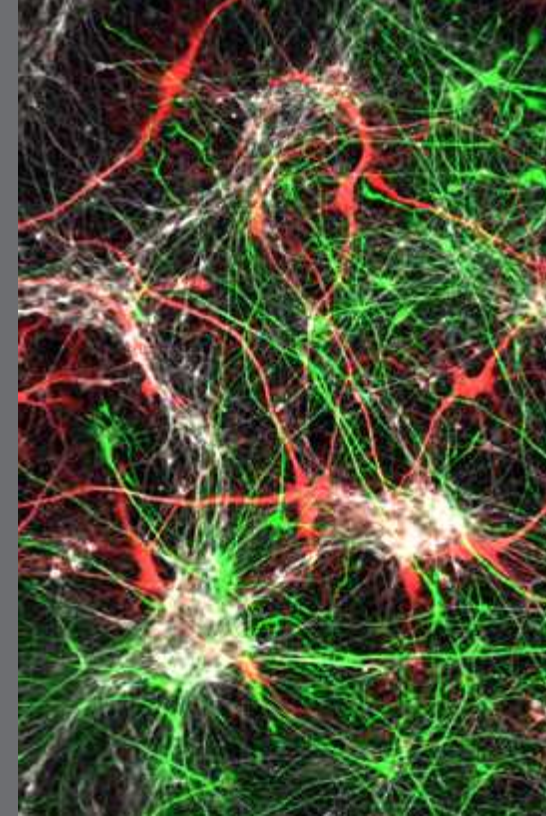
*Below: Neurons and astrocytes. (Courtesy of Dominik Paquet, PhD, Ludwig Maximilian University of Munich, Germany)*

OVER  
**220**  
RESEARCH  
PROJECTS

*Right: A cross section of central retinal-pigmented epithelium region with atrophy, as seen by the loss of green color (between two arrows), marking retinal-pigmented epithelium cells. The optic nerve head (ONH) at the top indicates that the section is in the center. (Courtesy of Claudio Punzo, PhD, University of Massachusetts Medical School)*

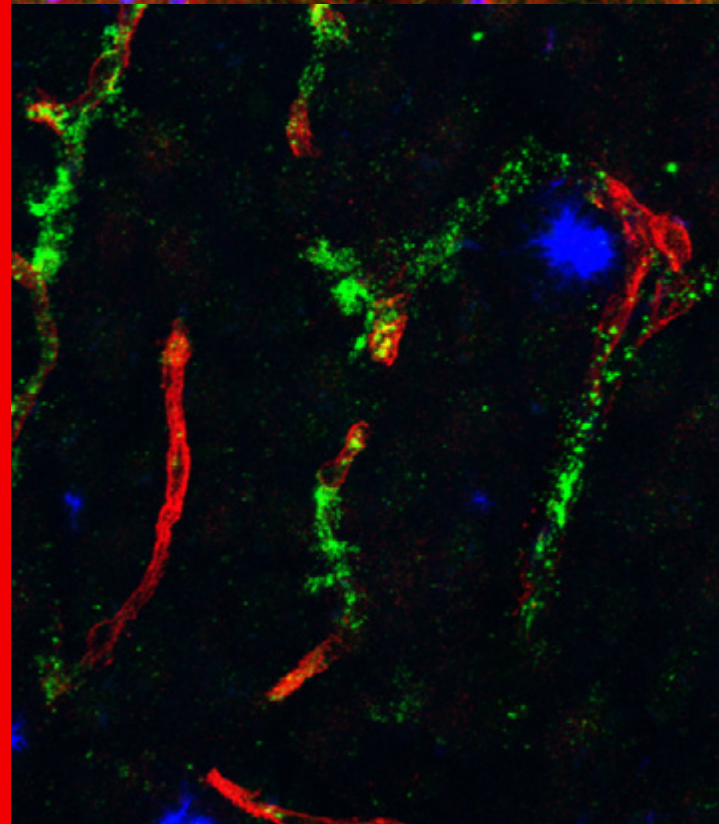
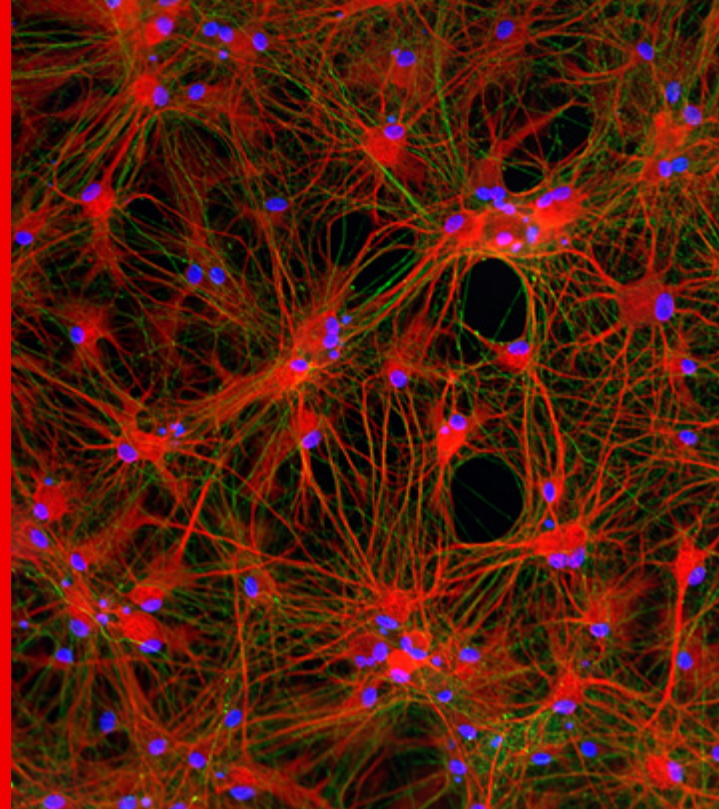


**70%**  
OF NEW  
GRANTS WILL  
TEST THE  
BOLD IDEAS  
OF EARLY-  
CAREER  
RESEARCHERS



# Every day more than 1,300 Americans develop Alzheimer's disease.

In 2020, BrightFocus awarded more than \$11 million in funding for 53 new Alzheimer's research grants.



# 5.8 million

people live with Alzheimer's in the United States today and by 2050 there will be close to

# 15 million.



**Above left:** Alzheimer's Fast Track® workshop session. **Above right:** Alzheimer's Fast Track Co-chairs (left to right): Harry Steinbusch, PhD; Cynthia Lemere, PhD; Stacy Pagos Haller; Diane Bovenkamp, PhD; and Frank LaFerla, PhD.

## Incubator for Promising Researchers

Nearly 90 scientists from across the globe attended the latest BrightFocus Alzheimer's Fast Track® workshop in October 2019. Bringing together preeminent Alzheimer's disease experts with graduate students, postdoctoral fellows or other early career scientists, they reviewed the latest discoveries and research directions and fostered new

collaborations to accelerate progress toward treatments and cures.

"Alzheimer's Fast Track is an immersive learning opportunity specifically created for scientists who are starting or contemplating a career in Alzheimer's research," said Diane Bovenkamp, PhD, BrightFocus Vice President, Scientific Affairs.

**Page 6 top:** This 3-D "Alzheimer's-in-a-dish" collection of blue, green and red brain nerve cells is for studying the causes of protein clumping or nerve cell death. (Courtesy of Dominik Paquet, PhD, Ludwig Maximilian University of Munich, Germany)

**Page 6 bottom:** Reducing the excitability of brain neurons with a repurposed drug may reduce amyloid-beta deposits in Alzheimer's (nerve cells in green, blood cells in red and amyloid plaques in green). (Courtesy of Shannon Macauley, PhD, Wake Forest University)



*In pre-pandemic days, Dr. Patrick Kehoe takes the podium at a scientific conference in Japan. His groundbreaking BrightFocus-funded research is among the first to examine biological links between Alzheimer's and hypertension, with relevance to COVID-19.*

## Groundbreaking Insights Into Alzheimer's and Hypertension

Patrick Kehoe, PhD, Gestetner Professor of Translational Dementia Research at the University of Bristol, UK, a current Alzheimer's Disease Research grantee, is exploring molecular links between hypertension and Alzheimer's, and whether some existing drugs could be repurposed as Alzheimer's treatments.

His findings, published in early 2020, were viewed in an even broader light than might have been imagined because of their potential relevance to the COVID-19 disease process and treatments being developed.



*Kristine Yaffe, MD, University of California, San Francisco being interviewed by Richard Lui, MSNBC on World Alzheimer's Day.*

## Marking World Alzheimer's Day

Appearing on an MSNBC program, University of California, San Francisco researcher and former Alzheimer's Disease Research grantee, Kristine Yaffe, MD, joined MSNBC anchor Richard Lui on a segment to mark World Alzheimer's Day. She shared key scientific findings of the increased dementia risk for military

veterans who sustained traumatic brain injury.

Dr. Yaffe sees patients and conducts research through her roles as a UCSF professor and chief of Geriatric Psychiatry and director of the Memory Evaluation Clinic at the San Francisco Veterans Affairs Medical Center.



*Virginia M.Y. Lee, PhD, University of Pennsylvania.*

## Renowned Alzheimer's Researcher Wins "The Oscars of Science"

University of Pennsylvania professor Virginia M.Y. Lee, PhD, who helped develop and guide BrightFocus Foundation's Alzheimer's Disease Research program, won a 2020 *Breakthrough Prize in Life Sciences*. The prize, known as the "The Oscars of Science," recognizes her research leading to new avenues for potential drug discovery and development.





**“BODY WEIGHT LOSS IS A COMMON FEATURE OF ALZHEIMER’S DISEASE THAT WORSENS AS ALZHEIMER’S PROGRESSES.”**

## Guided by his Grandmother’s Experience

Makoto Ishii, MD, PhD, of Weill Cornell Medicine, is shedding new light on why Alzheimer’s can lead to weight loss, particularly early in the course of the disease.

Ishii is running a clinical trial analyzing blood and spinal fluid samples from cognitively healthy volunteers who have the earliest pathological signs of Alzheimer’s and comparing those samples to healthy individuals who lack Alzheimer’s pathology. Through his research, Ishii hopes to explore new avenues for developing better diagnosis and treatment of the disease.

He has seen the awful impact of Alzheimer’s up close. When watching the progression of his grandmother’s disease, he not only noticed her loss of identity and independence, but also that she shed a significant amount of weight despite eating what appeared to be her normal amount of food.

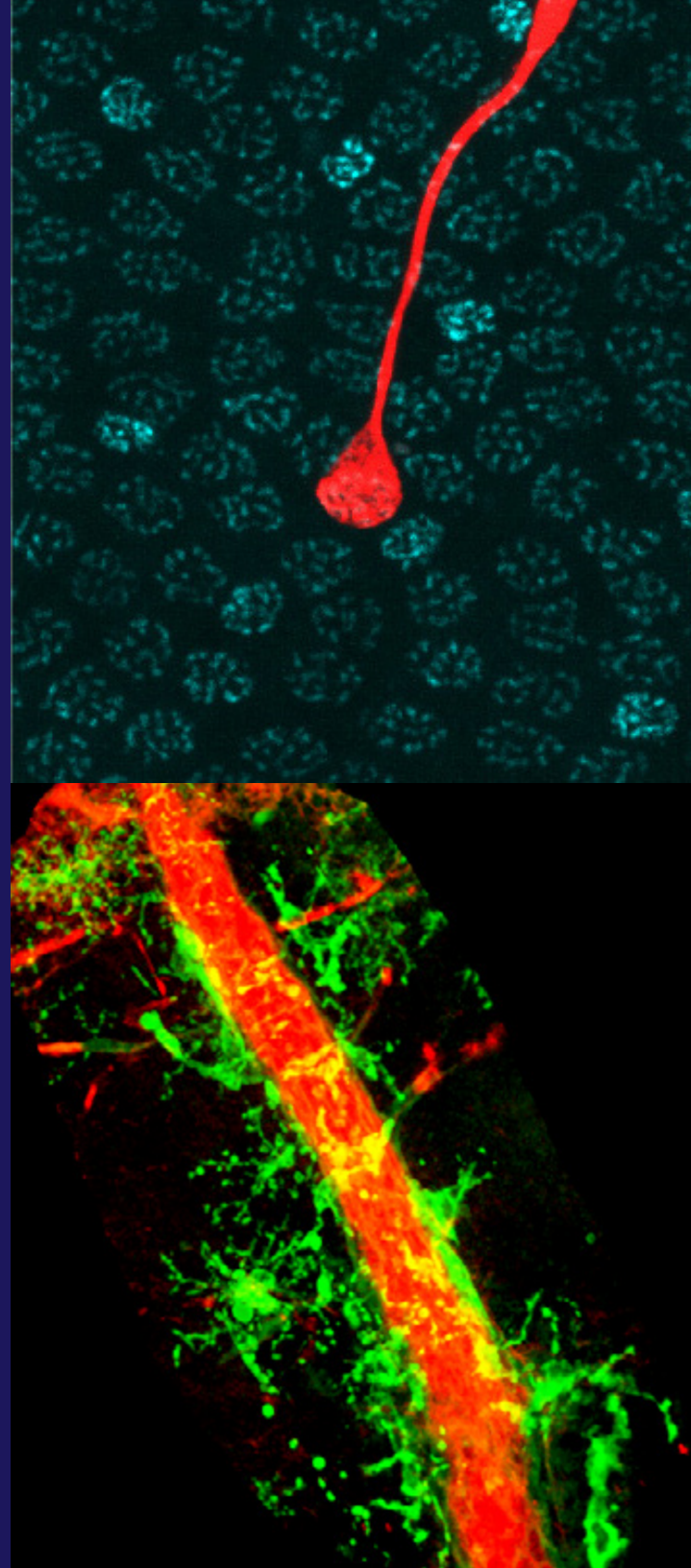
“As a grandson, I feel at times helpless as my grandmother’s dementia continues to worsen,” said Ishii. “As a clinician-scientist, I see the potential advances we can make by exploring clinical observations that can help solve the complexities of Alzheimer’s disease.”

Ishii began his connection to BrightFocus by attending *Alzheimer’s Fast Track*, its signature program to identify and train the most promising early-career scientists in the field.

Grateful for a grant from the foundation’s Alzheimer’s Disease Research program, he aims to make, “a broader contribution to the large community of clinicians, research scientists, tireless family caregivers, and most importantly to the patients like his grandmother, who are all battling this devastating disease.”

**Age-related Macular Degeneration is a leading cause of irreversible vision loss in the United States, and for Caucasians over age 40, it is the leading cause of blindness.**

**In 2020, BrightFocus awarded \$3.5 million in funding for 22 new macular degeneration research grants.**



TODAY



11 million  
in US

BY 2050



The incidence  
of macular  
degeneration  
is expected to

double  
by 2050



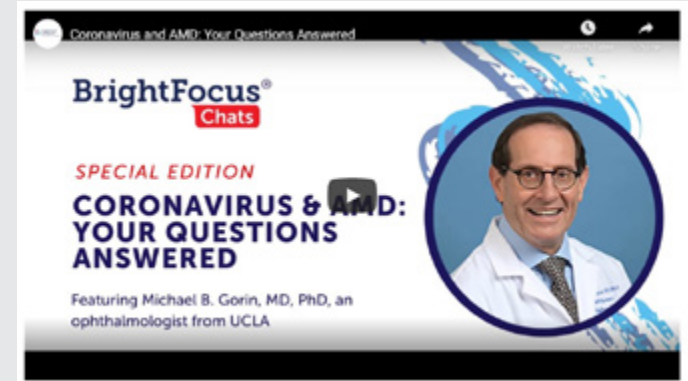
## Sharing Guidance with Families

Our free, monthly telephone call-in series, *BrightFocus Chats*, features the latest news and advice for those living with vision loss. Researchers, clinicians, and low vision specialists share their tips and answer questions from participants via phone or online. The *Chats* are archived at [BrightFocus.org](http://BrightFocus.org).

A recent telephone discussion featured Michael B. Gorin, MD, PhD, an ophthalmologist from UCLA devoted to research and clinical care of hereditary retinal disorders, especially age-related macular degeneration, retinal dystrophies and other medical retinal conditions.

Noting both patients' questions and concerns, as well as changes in vision care during the pandemic, Dr. Gorin cautioned, "It is very important that we do not lose ground in maintaining your sight going forward."

**Page 10 top:** Shown in red is a cone photoreceptor on an array of other cone terminals, responsible for high-definition central vision, the kind lost in macular degeneration. (Courtesy of Mrinalini Hoon, PhD and Raunak Sinha, PhD, University of Wisconsin) **Page 10 bottom:** Inflammation is a major player in AMD, where fragile, leaky blood vessels damage retinal cells. Here, immune cells (green) interact with blood vessels (red) in an animal retina. (Courtesy of David Alvarez, PhD Harvard Medical School, and Ye Sun, MD, PhD)



Michael B. Gorin, MD, PhD, UCLA, shared tips on vision care during the pandemic with Chat listeners.

**CORONAVIRUS & AMD**  
Your Questions Answered

**CAN I STILL GO TO MY EYE DOCTOR?**  
American Academy of Ophthalmology has recommended that all ophthalmologists see only urgent and emergent cases.  
Call your eye doctor for more information regarding your clinic.

**TELEMEDICINE**  
(tel-eh-mee-ee-see-ee-see)  
gives you the opportunity to have a dialogue with your physician in order to know if this is a situation that really warrants you to take the risk to come on in, or can you safely defer.

**AMD SAFETY TIPS FOR EYE CARE**

1. Wash your hands for 20 seconds with soap and warm water
2. Wipe down eye drop bottle with disinfectant
3. Administer drops and put them away
4. Continue eye drop regimen as prescribed

**EYE EMERGENCY? NOW WHAT?**  
The ER is not ideal now, during a pandemic. Also, the ER's are not set up for ocular emergencies/imaging nor have drug readily available (anti-VEGF). The best thing you can do is call nearest retina specialist.

**Keep your healthy diet & routine, adjust to social distancing requirements.**

Learn more: [BrightFocus.org](http://BrightFocus.org)



Diane Bovenkamp, PhD, BrightFocus Vice President, Scientific Affairs, at the podium during the Geroscience Summit 2019.

## BrightFocus Takes Leadership Role at Geroscience Summit

Diane Bovenkamp, PhD, BrightFocus Vice President, Scientific Affairs, addressed the third NIH Geroscience Summit on how the field of geroscience (the relationship between aging and most age-related diseases) intersects with the mission of improving health and well-being in later years, and advancing cures for diseases of aging, specifically of mind and sight.

"What's really relevant for today's geroscience summit is that age is the number one risk factor for Alzheimer's, macular degeneration, and glaucoma," said Bovenkamp. "Time lost is vision lost and cognition lost."



An action plan for moving forward on personalized medicine, preventive medicine and disease-based research will be published in the future.

**RESEARCH IN BRIEF**

**MACULAR DEGENERATION**

**"The most innovative aspect of this study is that we are using patient-derived cells to study the derived mechanism of macular degeneration in the cell type(s) that are affected in the patient eyes."**


Ruchira Singh, PhD  
University of Rochester

BrightFocus grantees' discoveries are shared with the world on our social media channels.

**Take 5**

**"I was driven by a combination of wanting to help sick people recover and wanting to understand how the human body works."**



Joshua Dunaief, MD, PhD  
University of Pennsylvania

Take 5 is a new feature on our website that reveals the personal side of our grantees and expert contributors.



# Working Toward a New Treatment for AMD

**“I WOULD LIKE TO SAY A MASSIVE THANK YOU FOR GIVING ME THE OPPORTUNITY TO DO THE RESEARCH THAT I LOVE DOING.”**

A professor at the Institute of Neurosciences at Trinity College Dublin, Sarah Doyle, PhD, focuses her research on investigating the role of inflammation in advanced forms of age-related macular degeneration (AMD), a leading cause of blindness.

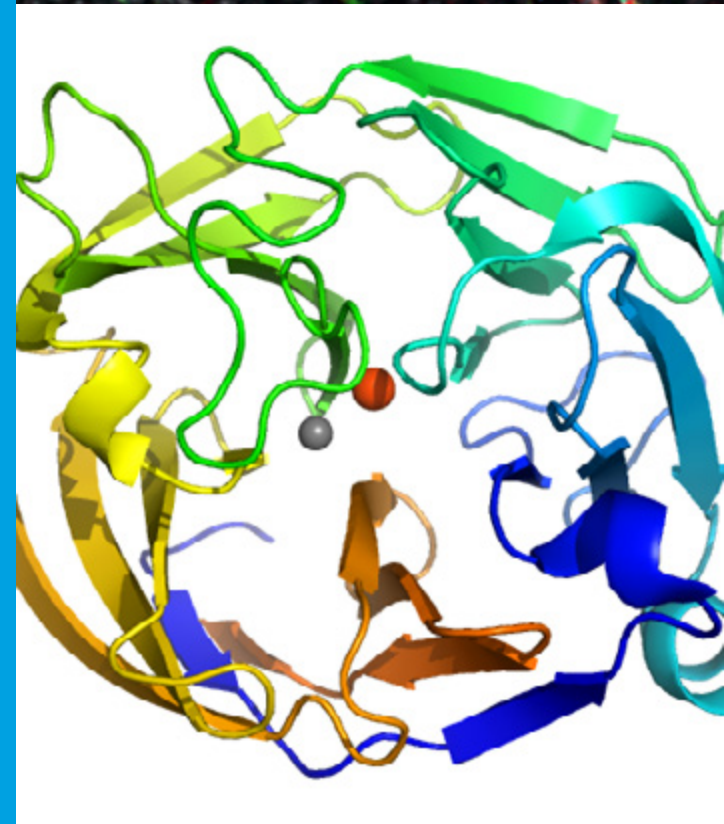
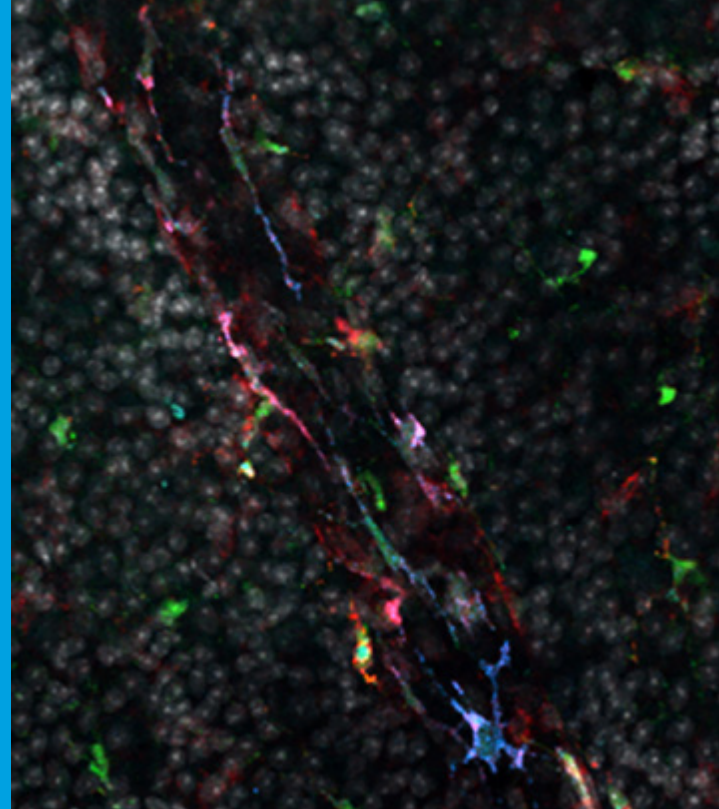
According to Doyle, “The more we understand about the disease processes underlying AMD, the better we’ll be to contribute to new treatments. Our work on a therapeutic for wet AMD continues, and we are hopeful that our research can lead to a new way for treating this condition.”

Doyle serves as one of the world’s experts in AMD as a reviewer on the BrightFocus Macular Degeneration Research Scientific Review Committee. She has served as an investigator and co-investigator on past-BrightFocus projects.

The support of Macular Degeneration Research, a BrightFocus program, has been key to her research. “I would like to say a massive thank you for giving me the opportunity to do the research that I love doing,” said Doyle. “I can’t imagine what it would be like to lose my sight... to be able to help people keep their sight would be amazing.”

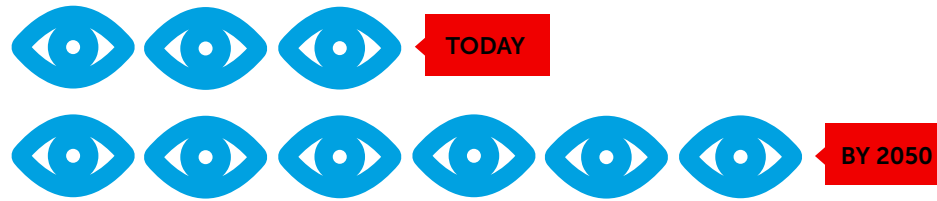
**Glaucoma is the second leading cause of irreversible blindness worldwide, and shows increased risk for Hispanics and African Americans according to the World Health Organization.**

**In 2020, BrightFocus awarded more than \$3 million in funding for 18 new glaucoma research grants.**



Today, more than **3 million** Americans have glaucoma. By 2050, it is estimated that the number will double to

**6 million people**



## Forum for Rising Researchers

BrightFocus held its second Glaucoma Fast Track™ to accelerate the fight for a cure by investing in promising young scientists in the field of vision research.

The Glaucoma Fast Track featured world-renowned glaucoma experts who are known for their research

and/or clinical expertise, as well as their mentoring skills. Together, they reviewed the latest discoveries and research directions, and inspired new thinking and interdisciplinary approaches in the search for cures.

*Above left and center: Glaucoma Fast Track™ attendees at the Emory Conference Center.*

*Above right: Jessica Cooke Bailey, PhD, Case Western Reserve University School of Medicine is interviewed by Richard Lui, MSNBC.*

**Page 14 top:** Gene therapy is being explored as a way to rebalance immune factors in the eye that could protect against glaucoma. In this animal model showing neurons (white), microglia (green), and varied gene expression (multicolored), it's shown some success. (Courtesy of Alejandra Bosco, PhD, University of Utah). **Page 14 bottom:** A BrightFocus-funded team was first to unveil the 3D structure of myocilin, a protein linked to inherited forms of glaucoma, to shed light on how it becomes misshapen through genetic miscoding. (Courtesy of Raquel Lieberman, PhD, Georgia Institute of Technology)



## BrightFocus Town Hall on Challenges of COVID-19 and Older Adults

BrightFocus held a virtual town hall on *COVID-19 and Older Adults* to address topics like long-distance caregiving, tele-health, social isolation and anxiety disproportionately affecting aging adults. The program featured guests Scott Kaiser, MD, a noted geriatrician and Chief

Innovative Officer with the Motion Picture & Television Fund, and Art Taylor, CEO of the Better Business Bureau's Wise Giving Alliance, and moderator Cecilia Arradaza, a leading health and science communicator and Executive Director, Strategy, Wondros.

## Resources for Families

Resources for families to better understand, manage and engage with loved ones who are impacted by diseases of mind and sight, are available free for download at [BrightFocus.org](https://BrightFocus.org) or upon request by email to [info@brightfocus.org](mailto:info@brightfocus.org).

BrightFocus also has a trial finder tool on our website, powered by *Antidote*, to identify local clinical trials.







# Unlocking the Genetics of Glaucoma in Africa

Working to save sight, National Glaucoma Research is supporting Kathryn Burdon, PhD, of Australia's University of Tasmania and Girum Gessesse, MD, of Ethiopia's St. Paul's Hospital Millennium Medical College to expand our scientific understanding of glaucoma in Africa.

The majority of glaucoma research has studied white populations in Europe and in the United States. Now, with this upcoming study, scientists will examine the genetic variants of African populations in hopes of better meeting the needs of those at a higher risk of vision loss, while also reducing the medication burden for those at lower risk. Their work will begin by focusing on patients in Ethiopia, and then broaden by comparing their research findings with other studies of African populations.

"Although Sub-Saharan Africa is with the highest prevalence of glaucoma with particularly

worse outcome, research undertakings on the disease are very limited in the region. We need to do much more," said Gessesse. "Research on glaucoma is very important for better understanding of the clinical, epidemiological and genetic nature of the disease, for evidence-based decision-making in our clinic work, and also for planning and policy making by the government."

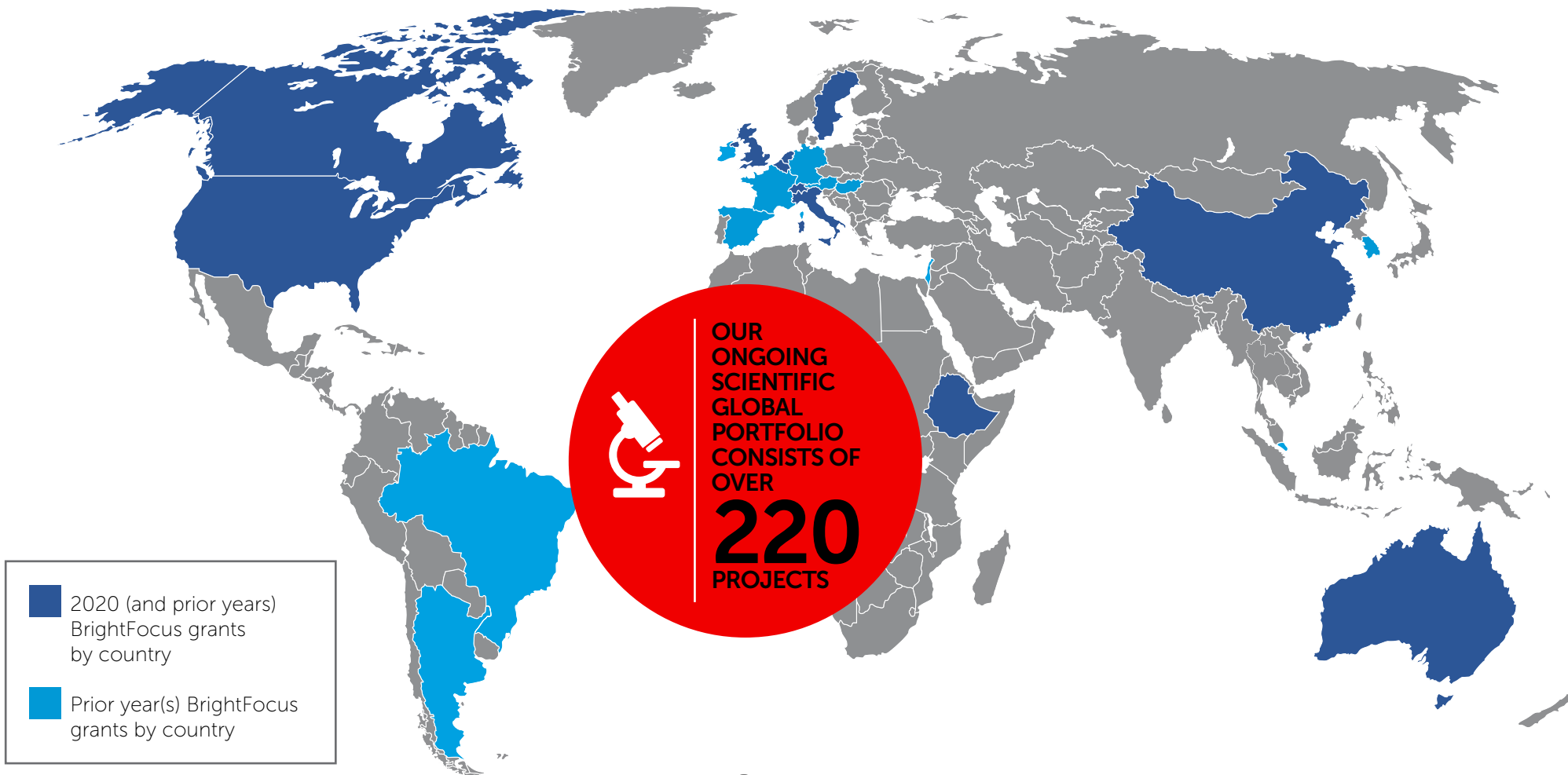
Burdon credits her grandfather for her inspiration. "He was an ophthalmologist who provided eye treatment to Aboriginal Australians to ensure they got the care they needed. When the opportunity came up to do a PhD in the genetics of eye disease, it seemed like the perfect way to combine my interests and honor the earlier work of my grandfather preventing blindness. I still strive towards this goal every day."

**SHE SEES HER WORK AS A "WAY TO HONOR MY GRANDFATHER... AN OPHTHALMOLOGIST WHO PROVIDED EYE TREATMENT TO ABORIGINAL AUSTRALIANS."**

These new research awards that were offered total

**more than \$17.8 million**

in 2020, part of our ongoing scientific portfolio of over 220 projects, nearly \$50 million investment in research worldwide in the past three years alone.



## 2020 BrightFocus Grants at a Glance

**BASIC** – Research that aims to better understand how a disease happens, and to obtain new ideas of how to stop the disease.

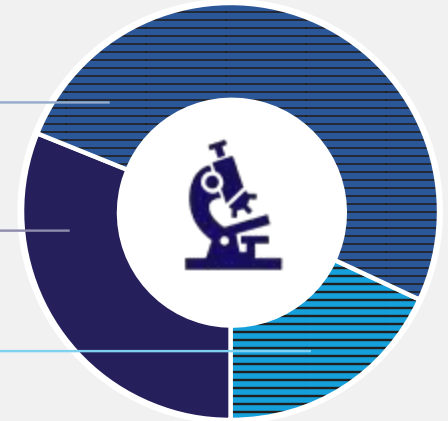
**TRANSLATIONAL** – Research to move findings from the lab bench to the “bedside” by testing potential treatments.

**CLINICAL** – Research involving volunteer participants to test the safety and effectiveness of drugs, devices, or other treatment candidates.

51%  
BASIC RESEARCH GRANTS

31%  
TRANSLATIONAL RESEARCH GRANTS

18%  
CLINICAL RESEARCH GRANTS



### Alzheimer's Disease Research

**Studying the Role of a Novel Innate Immunity Pathway in Inducing Brain Inflammation and Damage in Alzheimer's Disease**

**Sadaf Amin, PhD**  
WEILL CORNELL MEDICINE  
Fellowship Mentor:  
Li Gan, PhD

**Understanding the Beneficial Role of Sleep in Cognitive Deficits**

**Christelle Anaclet, PhD**  
UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL  
Co-Principal Investigator:  
Heinrich Gompf, PhD

**Washing Alzheimer's Disease Off the Brain**

**Michele Cavallari, MD, PhD**  
HARVARD MEDICAL SCHOOL & BRIGHAM AND WOMEN'S HOSPITAL

**Nanobodies Stabilizing Fragile Molecular Machines to Lower the Production of Toxic Amyloid-Beta in Alzheimer's Disease**

**Lucía Chávez-Gutiérrez, PhD**  
VLAAMS INSTITUUT VOOR BIOTECHNOLOGIE (VIB), (BELGIUM)

**Examining How the TREM2 R47H Mutation Effects Microglial Lipid Content and the Interactions Between Human Microglia and Alzheimer's Disease Pathology Within the Brain**

**Christel Claes, PhD**  
UNIVERSITY OF CALIFORNIA, IRVINE  
Fellowship Mentor:  
Mathew Blurton-Jones, PhD

**Gene Correction as a Therapy for Frontotemporal Dementia (FTD) and Amyotrophic Lateral Sclerosis (ALS) Caused by the C9orf72 Mutation**

**Claire Clelland, MD, PhD**  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO  
Fellowship Primary Mentor:  
Bruce Conklin, MD  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO/GLADSTONE INSTITUTES  
Fellowship Co-Mentor: Li Gan, PhD  
WEILL CORNELL MEDICINE

**Is Hexokinase 2 a Molecular Link Between TREM2 Signaling and Microglial Activity in Alzheimer Disease?**

**Juan Codocedo, PhD**  
INDIANA UNIVERSITY  
Fellowship Mentor:  
Gary Landreth, PhD

**The Role of Chemical Messenger Signaling in Removing Alzheimer's Pathology From the Brain**

**Scott Counts, MD**  
MICHIGAN STATE UNIVERSITY  
Co-Principal Investigator:  
Roxana Carare, MD, PhD  
UNIVERSITY OF SOUTHAMPTON (ENGLAND)

**Protecting Brain Cells from Death using Lipid Metabolic Drugs as a New Treatment for Alzheimer's Disease**

**Simone Crivelli, PhD**  
UNIVERSITY OF KENTUCKY  
Fellowship Mentor:  
Erhard Bieberich, PhD  
UNIVERSITY OF KENTUCKY  
Fellowship Co-Mentor:  
Pilar Martinez-Martinez, PhD  
MAASTRICHT UNIVERSITY, (THE NETHERLANDS)

Co-principal investigator and fellowship mentor institutions are listed if different than the PI.

Note: All grants will be awarded pending conclusion of contract negotiations.

**Improving Cognitive Function in Alzheimer's Disease Therapy Using a Combinatorial Approach of Reducing Disease Progression and Increasing Memory**

**Brati Das, PhD**  
UNIVERSITY OF CONNECTICUT HEALTH CENTER  
Fellowship Mentor:  
Riqiang Yan, PhD

**Mitochondrial Calcium Deregulation and Memory Loss in Alzheimer's Disease**

**Heng Du, MD, PhD**  
THE UNIVERSITY OF TEXAS AT DALLAS

**Identifying Therapeutic Targets and Biomarkers to Facilitate a Meaningful Therapy and a Pre-Symptomatic Alzheimer's Diagnostic**

**Mark Ebbert, PhD**  
MAYO CLINIC, JACKSONVILLE

**Testing New Markers of Brain Function that May be Sensitive to Early Signs of Alzheimer's Disease in Older Adults Who Still Have Normal Cognition**

**Peter Fried, PhD**  
BETH ISRAEL DEACONESS MEDICAL CENTER & HARVARD MEDICAL SCHOOL

**Understanding ApoE**

**Carl Frieden, PhD**  
WASHINGTON UNIVERSITY IN ST. LOUIS

**Evaluating the Role of Immune Cells in the Brain and a Related Protein, TREM2, on Alzheimer's Disease Pathology**

**Maud Gratuze, PhD**  
WASHINGTON UNIVERSITY IN ST. LOUIS  
Fellowship Mentor:  
David M. Holtzman, MD

**Identifying Aging and Alzheimer's Disease-Related Protein Changes in Skin Cells, Blood and Spinal Fluid That Can be Used as Markers of Disease or Therapeutic Targets**

**Chadwick Hales, MD, PhD**  
EMORY UNIVERSITY

**Unraveling the Biological Overlap of Alzheimer's Disease and Dementia with Lewy Bodies**

**Lenora Higginbotham, MD**  
EMORY UNIVERSITY  
Fellowship Co-Mentor:  
Allan Levey, MD, PhD  
Fellowship Co-Mentor:  
Nicholas Seyfried, PhD

**Investigating Coordinated Removal of Old and Synthesis of New Materials in Neurons and How These Processes are Disrupted in FTD**

**Sarah Hill, PhD**  
NATIONAL INSTITUTES OF HEALTH/NINDS  
Fellowship Co-Mentor:  
Michael Ward, MD, PhD  
Fellowship Co-Mentor:  
Jennifer Lippincott-Swartz, PhD  
JANELIA RESEARCH CAMPUS, HHMI

**The Role of Signaling Factors That Modulate Immune and Metabolic Function in Alzheimer's Disease**

**Makoto Ishii, MD, PhD**  
WEILL CORNELL MEDICINE

**A Simple Blood Test to Identify Individuals at Risk of Developing Alzheimer's Disease**

**Thomas Karikari, PhD**  
UNIVERSITY OF GOTHENBURG, (SWEDEN)  
Fellowship Mentor:  
Kaj Blennow, MD, PhD  
Fellowship Co-Mentor:  
Henrik Zetterberg, MD, PhD

**Using OCTA Eye Imaging of Retinal Blood Vessels As Biomarker of Vascular Cognitive Impairment and Dementia**

**Amir Kashani, MD, PhD**  
UNIVERSITY OF SOUTHERN CALIFORNIA, ROSKI EYE INSTITUTE

**Non-Neuronal Contribution to Alzheimer's Disease**

**Ksenia Kastanenka, PhD**  
MASSACHUSETTS GENERAL HOSPITAL & HARVARD MEDICAL SCHOOL

**The Impact of the Exercise Hormone Irisin on Astrocytes in Alzheimer's Disease**

**Eunhee Kim, PhD**  
MASSACHUSETTS GENERAL HOSPITAL & HARVARD MEDICAL SCHOOL  
Fellowship Mentor: Rudolph E. Tanzi, PhD

**Twisting Away Toxic Proteins in Alzheimer's Disease**

**John Koren, PhD**  
UNIVERSITY OF FLORIDA, GAINESVILLE

**A New Way to Measure How the Brain Uses Ketones as Fuel in Alzheimer's Disease**

**Lydia Le Page, DPhil, MChem**  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO  
Fellowship Co-Mentor:  
Myriam Chaumeil, PhD  
Fellowship Co-Mentor:  
Ken Nakamura, MD, PhD

**Circadian Regulation, Autonomic Function, and Alzheimer's Disease**

**Peng Li, PhD**  
BRIGHAM AND WOMEN'S HOSPITAL & HARVARD MEDICAL SCHOOL

**Explore the Impacts of APOE Genotype Switching From apoE4 to apoE2 in the Periphery (Liver and Bloodstream) for Alzheimer's Disease Therapy**

**Chia-Chen Liu, PhD**  
MAYO CLINIC, JACKSONVILLE

**A New Method to Determine Alzheimer's and Parkinson's Toxins in the Lipid-Enriched Environment**

**Jinghui Luo, PhD**  
PAUL SCHERRER INSTITUTE (PSI), (SWITZERLAND)

**Targeting Blood Vessel Excitability to Reduce Tau Pathology in Alzheimer's Disease**

**Shannon Macauley-Rambach, PhD**  
WAKE FOREST UNIVERSITY

**Finding Aberrant Glial and Neuronal Dysfunctions that Promote Neurodegeneration in Alzheimer's Disease and Related Dementia**

**Elise Marsan, PhD**  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO  
Fellowship Mentor:  
Eric L. Huang, MD, PhD  
Fellowship Co-Mentor:  
Arnold Kriegstein, MD, PhD

Co-principal investigator and fellowship mentor institutions are listed if different than the PI.

**Identifying Groups of Alzheimer's Disease Patients with Slower Disease Progression**

Justin Miller, PhD  
BRIGHAM YOUNG UNIVERSITY  
Fellowship Mentor:  
John S. K. Kauwe, PhD

**Gene Changes in Individual Cells Assessed Across the Progression of Alzheimer's Disease**

Michael Miller, MD, PhD  
BRIGHAM AND WOMEN'S HOSPITAL & HARVARD MEDICAL SCHOOL  
Fellowship Mentor:  
Christopher Walsh, MD, PhD  
BOSTON CHILDREN'S HOSPITAL & HARVARD MEDICAL SCHOOL

**Validation of a Biomarker That Could Identify a Subset of Frontotemporal Dementia and Alzheimer's Disease Patients**

Sarah Pickles, PhD  
MAYO CLINIC, JACKSONVILLE  
Fellowship Mentor:  
Leonard Petrucelli, PhD

**A New Method That Uses the 3D Structure of the Human Genome to Identify the Genetic Basis of Alzheimer's Disease**

Ivana Quiroga, PhD  
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL  
Fellowship Mentor:  
Douglas Phanstiel, PhD

**Investigating How Genetic Risk Contributes to Cerebrovascular Damage in Alzheimer's and Dementia**

Alaina Reagan, PhD  
THE JACKSON LABORATORY  
Fellowship Mentor:  
Gareth Howell, PhD

**Using Astrocyte Factors to Prevent Synaptic Alterations in Alzheimer's Disease**

Isabel Salas, PhD  
THE SALK INSTITUTE FOR BIOLOGICAL STUDIES  
Fellowship Mentor:  
Nicola Allen, PhD

**Deciphering the Alzheimer's Disease Glyco-Code**

Manveen Sethi, PhD  
BOSTON UNIVERSITY  
Fellowship Mentor:  
Joseph Zaia, PhD

**Role of Platelet-Derived Factors in Ameliorating Alzheimer's Disease Pathology**

Saul Villeda, PhD  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

**Understanding the Role of Lysosome in Brain Function and Alzheimer's Disease**

Shuo Wang, PhD  
BAYLOR COLLEGE OF MEDICINE  
Fellowship Mentor:  
Hui Zheng, PhD

**Development of Synthetic Gene Feedback Circuits to Prevent Tau Aggregation**

Benjamin Wolozin, MD, PhD  
BOSTON UNIVERSITY  
Co-Principal Investigator:  
Ahmad Khalil, PhD

**A Novel Way to Expand Human-Derived Pathogenic Tau Seeds in a Cell Free System**

Hong Xu, PhD  
UNIVERSITY OF PENNSYLVANIA  
Fellowship Mentor:  
Virginia M.Y. Lee, PhD

**Study Vascular Dysfunction of Cerebral Perforating Arteries in the Pathogenesis of VCI/AD**

Lirong Yan, PhD  
*This grant is made possible in part by support from Alzheimer's Los Angeles*  
UNIVERSITY OF SOUTHERN CALIFORNIA

**Fingerprinting In Vivo and In Vitro Prion Strains**

Hyunjun Yang, PhD  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO  
Fellowship Mentor:  
William DeGrado, PhD  
Fellowship Co-Mentor:  
Carlo Condello, PhD

**Macular Degeneration Research**

**Engineered Eye Tissue Models to Analyze Mechanisms of Age-related Vision Loss**

Kapil Bharti, PhD  
NATIONAL INSTITUTES OF HEALTH/ NEI  
Co-Principal Investigator:  
Eric Nguyen, PhD

**A New Therapeutic Strategy to Treat AMD**

Sabrina Carrella, PhD  
FONDAZIONE TELETHON, ROMA, (ITALY)  
Co-Principal Investigator:  
Alessia Indrieri, PhD  
UNIVERSITY OF NAPLES FEDERICO II, (ITALY)

**A Novel Method for Modeling AMD in a Dish**

Jennifer Chao, MD, PhD  
UNIVERSITY OF WASHINGTON

**Discovery of New Methods to Regenerate Cone Photoreceptors**

Mark Emerson, PhD  
THE CITY COLLEGE OF NEW YORK, CITY UNIVERSITY OF NEW YORK

**Understanding the Role of Support Cells, known as Glia in Geographic Atrophy**

Malia Edwards, PhD  
*This grant was made possible in part by the support of the Victor and Anna Mae Charitable Foundation*  
WILMER EYE INSTITUTE, JOHNS HOPKINS MEDICINE

**Examining the Role of Choroidal Blood Flow in AMD**

Bradley Gelfand, PhD  
UNIVERSITY OF VIRGINIA

**Targeting Proline Metabolism in AMD**

Jianhai Du, PhD  
WEST VIRGINIA UNIVERSITY RESEARCH CORPORATION  
Co-Principal Investigator:  
Deborah Ferrington, PhD  
UNIVERSITY OF MINNESOTA

**Immune Cell Specific DNA Modifications and Gene Expression in AMD**

Willard Freeman, PhD  
OKLAHOMA MEDICAL RESEARCH FOUNDATION  
Co-Principal Investigator:  
Ana J Chucair-Elliott, PhD

**Exploring the Role of Gut Bacteria in Early AMD**

Christopher Hammond, MD, MRCP, FRCOphth  
KING'S COLLEGE LONDON (UNITED KINGDOM)

### **The Gut Bacteria and AMD in Aging Women**

Amy Millen, PhD  
UNIVERSITY OF NEW YORK AT BUFFALO

### **Generating Precision Model for AMD Research**

Jurgen Naggert, PhD  
THE JACKSON LABORATORY

### **Elucidating How Smoking Causes Advanced AMD**

Claudio Punzo, PhD  
UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL

### **Profiling of Immune Cell Subtypes in AMD Patients and Controls**

Philip Ruzycski, PhD  
*This award is made possible by support from The Ivan Bowen Family Foundation.*  
WASHINGTON UNIVERSITY IN SAINT LOUIS  
Co-Principal Investigator:  
Rajendra Apte, MD, PhD

### **Role of Lipids (Deposits) in Causing Dry AMD**

Dorota Skowronska-Krawczyk, PhD  
*The Elizabeth Anderson Award*  
UNIVERSITY OF CALIFORNIA, IRVINE  
Co-Principal Investigator:  
Daniel Chao, MD, PhD  
UNIVERSITY OF CALIFORNIA, SAN DIEGO

### **A Novel Method for Treating Wet AMD Reversibly with Single Intraocular Injection**

Shushen Wang, PhD  
TULANE UNIVERSITY  
Co-Principal Investigator:  
Bo Yu, PhD

### **Development of Gene Editing as a Permanent Cure for Wet AMD**

Glenn Yiu, MD, PhD  
UNIVERSITY OF CALIFORNIA, DAVIS

### **National Glaucoma Research**

### **Cell Replacement in Glaucoma: Making Mature Retinal Ganglion Cells**

Petr Baranov, MD, PhD  
SCHEPENS EYE RESEARCH INSTITUTE, MASSACHUSETTS EYE AND EAR AND HARVARD MEDICAL SCHOOL

### **A Dietary Supplement in Treatment of Glaucoma**

Jeffrey Boatright, PhD  
EMORY UNIVERSITY  
Co-Principal Investigator:  
Ying Li, MD, PhD

### **Genetics of Glaucoma in Africa**

Kathryn Burdon, PhD  
UNIVERSITY OF TASMANIA, (AUSTRALIA)  
Co-Principal Investigator:  
Girum Gessesse, MD  
ST. PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE, (ETHIOPIA)

### **A Novel Use of Specialized Pro-resolving Mediators to Treat Glaucoma**

Kin-Sang Cho, PhD  
SCHEPENS EYE RESEARCH INSTITUTE, MASSACHUSETTS EYE AND EAR AND HARVARD MEDICAL SCHOOL,

### **Preventing Vision Loss by Helping Doctors Predict and Treat Exfoliation Syndrome in Patients**

Karen Curtin, PhD  
UNIVERSITY OF UTAH  
Co-Principal Investigator:  
Barbara M. Wirostko, MD

### **Regulation of APBB2 Gene Expression and How it Influences Risk for Glaucoma**

John Fingert, MD, PhD  
UNIVERSITY OF IOWA

### **Using Electric Fields to Regenerate the Optic Nerve**

Kimberly Gokoffski, MD, PhD  
*Dr. Douglas H. Johnson Award*  
UNIVERSITY OF SOUTHERN CALIFORNIA EYE INSTITUTE

### **Identifying Factors that Protect Ganglion Cells from Death after Optic Nerve Injury**

Jeffrey Gross, PhD  
UNIVERSITY OF PITTSBURGH

### **Determine the Genetic Element on Human Chromosome 9 that Increases Risk for Glaucoma**

Gareth Howell, PhD  
THE JACKSON LABORATORY

### **A Novel Tool for Seeing Neuron Cells in the Eyes of Glaucoma Models**

Yali Jia, PhD  
OREGON HEALTH AND SCIENCE UNIVERSITY  
Co-Principal Investigator:  
Shaohua Pi, PhD

### **Defining the Importance of Extrinsic Signalling in Glaucoma Neurodegeneration**

Richard Libby, PhD  
*Thomas R. Lee Award*  
UNIVERSITY OF ROCHESTER MEDICAL CENTER

### **Insights into Genetic Risk Factors and Biological Consequences in a Naturally Occurring Glaucoma Model**

Amanda Melin, PhD  
UNIVERSITY OF CALGARY (CANADA)  
Co-Principal Investigator:  
James Higham, PhD  
NEW YORK UNIVERSITY

### **Astrocytes Regulate the Health and Degeneration of Retinal Ganglion Cells in Glaucoma Neurodegeneration**

Jason Meyer, PhD  
INDIANA UNIVERSITY

### **A Novel Model Enabling Identification of Strategies for Replacing Lost Cells and Restoring Vision in Glaucoma Patients**

Jeff Mumm, PhD  
WILMER EYE INSTITUTE, JOHNS HOPKINS MEDICINE

### **Investigating Risk Factors for Primary Open-angle Glaucoma in People of African Descent**

Alberta Thiadens, MD, PhD  
ERASMUS MEDICAL CENTER, ROTTERDAM, (THE NETHERLANDS)  
Co-Principal Investigator:  
Caroline C.W. Klaver, MD, PhD

### **Direct Observation and Manipulation of Energy Regulation in Retinal Neurons During Glaucoma**

Philip Williams, PhD  
WASHINGTON UNIVERSITY IN ST. LOUIS

### **Identifying Which Retinal Ganglion Cell Types Die Earlier in Glaucoma**

Siamak Yousefi, PhD  
UNIVERSITY OF TENNESSEE

Co-principal investigator and fellowship mentor institutions are listed if different than the PI.

Special Thanks to Donors  
Supporting Ongoing  
Awards

## ALZHEIMER'S DISEASE RESEARCH

### Investigating Neuropeptides as Biomarkers and Novel Therapeutics for Alzheimer's Disease

Becky Carlyle, PhD

*This grant is made possible  
by the support from The  
Luminescence Foundation,  
Inc.*

MASSACHUSETTS GENERAL  
HOSPITAL

### Towards New Stimulation Methods to Correct Memory in Alzheimer's Disease

Arjun Masurkar, MD, PhD

*This grant made possible in  
part by the support of the Ping  
Y. Tai Foundation.*

NEW YORK UNIVERSITY

### A New Method to Assess Cellular Dysfunction in Alzheimer's Using Human Neurons

Jessica Young, PhD

*This grant made possible in  
part by the support of the  
Jerome Jacobson Foundation.*

UNIVERSITY OF  
WASHINGTON, SCHOOL OF  
MEDICINE

### A Novel Approach for Memory Improvement in Alzheimer's Disease

Ying Juan Zhao, PhD.

*This grant made possible by  
the support of the J. T. Tai  
Foundation.*

XIAMEN UNIVERSITY

## MACULAR DEGENERATION RESEARCH

### A Novel Negative Immune Regulator to Control Wet AMD

Ye Sun, MD, PhD

*This grant is made possible by  
the support of Dr. H. James  
and Carole Free.*

BOSTON CHILDREN'S  
HOSPITAL AND HARVARD  
MEDICAL SCHOOL

# BrightFocus scientists shared research highlights at special movie screening



During a virtual BrightFocus at-home movie night, Dr. Amir Kashani, University of Southern California, Roski Eye Institute discussed his innovative new research to develop retinal scans to identify early signs of vascular contributions to cognitive dementia, one of the leading causes of memory loss.



Dr. Yvonne Ou of the University of California, San Francisco explained the importance of glaucoma research in helping save sight for millions around the world.

# Our world class scientific review committees

comprised of renowned leaders in their fields, recommend new research opportunities for BrightFocus to advance our goal of defeating Alzheimer's, macular degeneration, and glaucoma.



*BrightFocus grantees have received numerous prestigious awards over the years.*

The following experts have served on each committee within the preceding five years:

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# BrightFocus works closely with nonprofit and corporate partners on issues of common concern.

As a respected member of broad coalitions, we communicate with key policymakers and elected officials on the importance of research funding and caregiving support.





## Global Network for Alzheimer's

BrightFocus has worked with partners worldwide to advance research and provide public awareness of Alzheimer's disease including:

### Belgium

Stichting Alzheimer Onderzoek

### France

Fondation Vancre Alzheimer

### Germany

Alzheimer Forschung Initiative e.V.

### The Netherlands

Alzheimer Nederland

# BrightFocus thanks our donors for their generosity toward our three scientific and public awareness programs:

Alzheimer's Disease Research,  
Macular Degeneration Research, and  
National Glaucoma Research.

The support of individual donors, family foundations, and corporate partners makes our work possible.

A wide range of contribution opportunities is available to accommodate resources and charitable goals. Each gift is important and needed to help us find a cure.



## Sowing the Seeds of Scientific Progress

BrightFocus-funded researchers often go on to receive awards

**TEN TIMES GREATER**  
from NIH and other sources, a

**1,000%** return  
on our early investment.

TOGETHER FOR MIND, SIGHT & MUSIC

# LINDA RONSTADT: THE SOUND OF MY VOICE

AT-HOME MOVIE NIGHT WITH



**A FREE VIRTUAL EVENT  
ONE WEEK ONLY  
Starts June 4 at 7:00 p.m. EST**

**TO WATCH, VISIT:  
[BRIGHTFOCUS.ORG/MOVIE](https://www.brightfocus.org/movie)**



## Together for Mind, Sight & Music

BrightFocus provided a free special screening of the award-winning documentary, *Linda Ronstadt: The Sound of My Voice*. The movie follows the life and career of one of the world's best-selling artists as she embraced genres spanning rock, country, operetta and Latin, and paved the way to become an iconic female pioneer in the male-dominated music world. Ronstadt was forced to retire early due to a neurodegenerative disease.

Prior to the movie, four BrightFocus-funded scientists shared highlights from their ongoing research and progress toward ending diseases of mind and sight.



*Stacy Pagos Haller, BrightFocus President and CEO, and James Keach, filmmaker, PCH Films, share a message on the importance of the research for the cure of diseases of mind and sight.*



*Ed and Marilyn Nadolny.*

**“RESEARCH IS SO IMPORTANT TO FIND SOME WAY TO ELIMINATE AND SLOW DOWN ALZHEIMER’S DISEASE.”**

*BrightFocus donors often have special connections to the scientific research programs they support. We are honored to share four of those stories with you.*

## A Commitment to Help Future Generations

For Marilyn Nadolny of The Villages, Florida, Alzheimer’s is personal. Her husband Ed, of nearly 60 years, suffered from the disease for 14 years.

Marilyn supports Alzheimer’s Disease Research, a program of BrightFocus Foundation to help make the difference for other families. “Research is so important to find some way to eliminate and slow down Alzheimer’s disease,” said Marilyn Nadolny. “It is so just devastating to families.”

Ed was a repair specialist who could fix anything. His career spanned decades – working at top technology companies like Smith Corona and Sun International before joining the Broward County School Board.

Marilyn, Ed and their family enjoyed the outdoors and were longtime campers. “Our plans to travel across the country got wiped out, and we had to sell our motorhome,” Marilyn said. “Later on, Ed, who was no longer driving, went missing for two days.

*Four generations of the Nadolny family.*

He headed south until he couldn't drive any further – he had reached Key West! It was truly a miracle that he was able to return home safely as the police were in the driveway with me discussing next steps in their statewide search.”

The Nadolny family now spans four generations with Marilyn, two children, five grandchildren and one great grandchild. “I just hope that the research can find a cure, so the disease won't have the same impact on my children or my grandchildren,” Marilyn added.





## *Turning Point* Film Continues to Captivate Audiences

BrightFocus is proud to serve as presentation partner for *Turning Point*, a documentary that captures the drama and personal dedication of researchers who are pursuing drug breakthroughs to make Alzheimer's a distant memory. Directed and produced by award-winning filmmaker James Keach, the film has been screened over 130 times worldwide since its festival premiere in 2018.

*Turning Point* was recently released on VOD (video on demand) platforms and is now available to watch at home. For more information, visit [brightfocus.org](http://brightfocus.org).

BrightFocus also works on the RACERS initiative, in partnership with Gates Ventures, the National Institute on Aging, and the Health Resources and Services Administration, to help health care providers learn about early detection and diagnosis of cognitive impairment/Alzheimer's/related dementias. The film has been screened for medical associations and schools of health professionals nationwide.

*Above left:* Stacy Pagos Haller, President and CEO, BrightFocus, joins C. Marie Taylor, President & CEO, Leadership Montgomery, at a *Turning Point* screening in Silver Spring, MD.

*Above right:* James Keach, filmmaker, speaks following a *Turning Point* screening at the HudsonAlpha Institute in Huntsville, AL.



From the award-winning director of Glen Campbell...I'll Be Me  
A film by James Keach

# TURNING POINT

## THE QUEST FOR A CURE

PCH FILMS in association with BRIGHTFOCUS FOUNDATION presents  
a JAMES KEACH Film "TURNING POINT"  
Edited by ELISA BONORA PARKER LARAMIE Original Score by ADAM PETERS  
Cinematography by ALEX EXLINE IAN COAD Supervising Producers NICOLAS HIPPISEY-COXE KAYLA THORNTON  
Executive Producers MICHELE FARINOLA NANCY LYNN  
Produced and Directed by JAMES KEACH



[www.turningpointmovie.com](http://www.turningpointmovie.com)



Alzheimer's clinical trial participant Pasquale Rocchio.  
(Photo courtesy of PCH Films)



Noted scientist Neil deGrasse Tyson.  
(Photo courtesy of PCH Films)



*Sally Straus of Union receives a resolution from Freeholder Chairman Alexander Mirabella and Vice Chairman Angel G. Estrada, with State Senator Joe Cryan and former State Senator Anthony E. Russo.*

*(Credits: Jim Lowney/County of Union)*

**“HAVE A POSITIVE ATTITUDE AND DISCOVER WHAT RESOURCES ARE AVAILABLE, SUCH AS THE BRIGHTFOCUS CHATS.”**

# The Importance of Knowledge in Saving Sight

Sally Straus of Union, New Jersey, was an office manager for a major perfume company in New York City before retiring to focus fulltime on volunteerism in her hometown. Her motto is “If it happens in Union, I am either in it, on it or know about it.”

Diagnosed with wet macular degeneration in 2015, Straus has been undergoing treatment by Dr. Vinod Voleti of NJ Retina, including eye injections and taking supplements that have stabilized the progression of the disease. Her advice for those diagnosed with vision loss is, “Be prepared. Be your own advocate. Have a positive attitude and discover what resources are available, such as the BrightFocus Chats.”

A supporter of Macular Degeneration Research, a program of BrightFocus Foundation, she is an active and loyal participant in the organization’s monthly telephone discussions, which feature leading experts answering questions and providing helpful advice for living with vision loss. “I continue to be very impressed by the BrightFocus Chats. They are very informative and a wonderful resource. I am getting excellent care from my retina specialist, but the Chats help with my comfort level.”

Straus continues her community service for the Union Public Library Board of Trustees, Union Historical Society, local Veterans alliance, and Knights of Columbus among others. In 2014, she was honored by the Union Senior Center as its inaugural Senior Citizen of the Year.



Lafayette Leopards men's basketball team defeats American University.

## Defeating Alzheimer's— It Takes a Team



The Reichwein family.

Honoring his grandfather who had passed away from Alzheimer's, Lafayette College basketball player Cal Reichwein dedicated a game to supporting scientific research through BrightFocus Foundation's Alzheimer's Disease Research program. Not only did Lafayette win their game 82-70, but he raised \$4,681 for research donated by the Lafayette community.



EVERY  
**65**  
SECONDS

SOMEONE  
DEVELOPS  
ALZHEIMER'S  
DISEASE.



*The Yendall family: Carol, Rick, Wayne, Judy, Rob and Barb.*

**“WE ARE VERY INTERESTED IN THE RESEARCH—WE DONATE WHAT WE CAN ON LIMITED BUDGET, AND WHAT WE CAN GIVE, WE GIVE GLADLY.”**

## Moved to Action: Glaucoma’s Impact on a Family

Judy and Wayne Yendall of Buffalo have long known the impact of glaucoma. The disease runs in Judy’s family, affecting her grandmother, great-aunt, father and sisters. She was tested at early age and has managed her glaucoma for decades with laser surgery and eye drops.

After their son Rick was diagnosed with pigmentary glaucoma, Wayne was also tested and diagnosed with the same rare form of the disease.

Rick was a championship swimmer at Grove City College in Pennsylvania when severe eye pain took him from the school infirmary to hospitals in Pittsburgh and Boston for surgery and treatment. His disease was managed, allowing him a long career as a plastics engineer. Eventually, however, his vision declined to a point where he could no longer read the blueprints at his job. Rick, now blind, uses

a special computer to stay in touch with others and is grateful for the support of his family.

Wayne has been fortunate to be able to manage his sight with eye drops, and has had both laser and cataract surgery under the care of a glaucoma specialist. He encourages others to “get your eyes checked and stay on top of your eyesight.”

Judy and Wayne recently celebrated their 60th anniversary and are hopeful that scientific progress will help reverse Rick’s blindness. They have been inspired by a new National Glaucoma Research project, Using Electric Fields to Regenerate the Optic Nerve, as a possible cure to reverse the damage.

“We are very interested in the research,” said Judy. “We donate what we can on limited budget, and what we can give, we give gladly.”



*Carol Maude Pearl.*

**“MY HOPE IS THAT WITH ENOUGH RESOURCES, EVENTUALLY SCIENTISTS WILL BE ABLE TO COME UP WITH PREVENTION FOR THIS HORRIBLE DISEASE.”**

## A Loving Memory

Carol Maude Pearl, lived in Odessa, Delaware for 35 years, was active in community and church activities, and was known as “our queen” and a “hostess with the mostess” by all who knew her. She opened her home each year for the Christmas in Odessa House Tour, sponsored by the Odessa Women’s Club. Carol loved to dance, and her smile would light up any room.

She and David, her husband of 54 years, first met at a faculty party and both taught school for decades. In retirement, they travelled the world. The Pearl clan now includes four children, eight grandchildren and four great grandchildren.

Carol first experienced mild signs of dementia in 2012, and the disease progressed slowly at first. David became aware of Alzheimer’s Disease Research

(ADR), a BrightFocus program, when he attended a local session on dementia. The speaker discussed research for treatments and a cure, and that is when he began supporting the ADR program.

“I am so happy that Alzheimer’s research is going on, and that there are little green shoots of progress,” said David. “My hope is that with enough resources, eventually scientists will be able to come up with prevention for this horrible disease.”

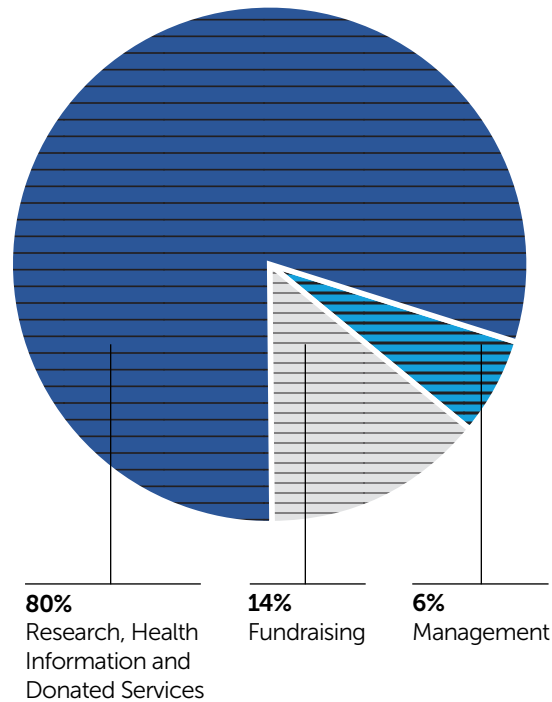
For David, supporting research was, “the only answer so the next family would not have to suffer like we did.”

Carol passed away in July 2019. Her family held a celebration of her life, and David and their children light candles in her memory. David is arranging a tree memorial for Carol at BrightFocus.

# Investing in hope

BrightFocus is a nonprofit organization designated under Section 501(c)(3) of the Internal Revenue Code. All contributions to BrightFocus and its programs are tax-deductible to the extent allowed by law. The Foundation is supported entirely by voluntary private contributions.

BrightFocus received in-kind donations to expand public health information outreach and these are included in Program Services expenses. This allowed the organization to reach millions of people with information about risk factors, treatments and caregiving.



*A complete copy of financial statements audited by Marcum, LLP is available upon request from the BrightFocus Foundation, 22512 Gateway Center Drive, Clarksburg, MD 20871 or on our website at [www.brightfocus.org](http://www.brightfocus.org).*

<b>CONSOLIDATED STATEMENT OF FINANCIAL POSITION</b>	
As of March 31, 2020 (in thousands of dollars)	
<b>ASSETS</b>	
Cash and Investments	\$36,972
Charitable Trusts and Bequests Receivable	8,310
Rental Property	3,761
Fixed Assets, Net	3,836
Other Assets	1,109
<b>TOTAL ASSETS</b>	<b>\$53,988</b>
<b>LIABILITIES</b>	
Accounts Payable and Other Liabilities	\$790
Grants Payable	26,847
Charitable Gift Annuities	958
<b>TOTAL LIABILITIES</b>	<b>28,595</b>
<b>NET ASSETS</b>	
Without Donor Restriction	8,879
With Donor Restriction	16,514
<b>TOTAL NET ASSETS</b>	<b>25,393</b>
<b>TOTAL LIABILITIES AND NET ASSETS</b>	<b>\$53,988</b>

<b>CONSOLIDATED STATEMENT OF ACTIVITIES</b>	
For the Fiscal Year Ended March 31, 2020 (in thousands of dollars)	
<b>SUPPORT AND REVENUE</b>	
Contributions and Grants	\$29,868
Bequests	5,652
Donated Services	16,267
Investment Income	(1,820)
Rental & Other Income	1,338
<b>TOTAL SUPPORT AND REVENUE</b>	<b>51,305</b>
<b>EXPENSES</b>	
Program Services	
Research	23,155
Health Information Services	24,532
<b>Total Program Services</b>	<b>47,687</b>
Supporting Services	
Fundraising	8,055
Management and General	3,449
<b>Total Supporting Services</b>	<b>11,504</b>
<b>TOTAL EXPENSES</b>	<b>59,191</b>
<b>CHANGE IN NET ASSETS</b>	<b>\$(7,886)</b>

## Our board of directors



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**BrightFocus®  
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Cure in Mind. Cure in Sight.

## Programs

Alzheimer's Disease Research  
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## Contact

22512 Gateway Center Drive  
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