

Across the Research Spectrum

Expanding our Innovative 360° Approach

Alzheimer's Disease Research
Macular Degeneration Research
National Glaucoma Research

2022 ANNUAL REPORT

In 2022, BrightFocus funded

Nearly \$25 Million in Research Grants to Save Mind and Sight

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.

25%

International Grants

80%

Early Stage Research

95

New Research Grants

Over 287

Ongoing Science Projects

Cover images, left to right:

1. A cross-section of the choriocapillaris, or "bed" of blood vessels that feeds the retinal area and can be disrupted in diseases like AMD. (Courtesy of Benjamin Thomson, PhD, Northwestern University)

2. Lymph nodes and surrounding vessels provide the brain nutrients and may play a role in Alzheimer's disease. (Courtesy of Sandro DaMesquita, PhD, Mayo Clinic, Jacksonville)

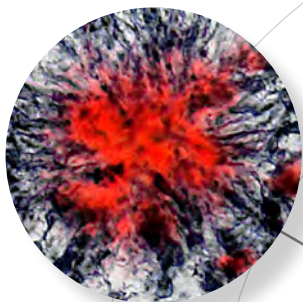
3. The flow of blood and oxygen delivery is being studied in glaucoma. This model shows oxygen levels surrounding the optic nerve. (Courtesy of Yi Hua, PhD, University of Pittsburgh)

4. Human microglia were derived from adult cells to study their role in immune regulation in Alzheimer's disease. (Courtesy of Renzo Mancuso, PhD, Vlaams Instituut voor Biotechnologie, Belgium)

5. In a mouse brain, eye pressure is being studied for its role in disrupting cellular communication. (Courtesy of Prabhavathi Maddineni, PhD, University of North Texas Health Science Center)

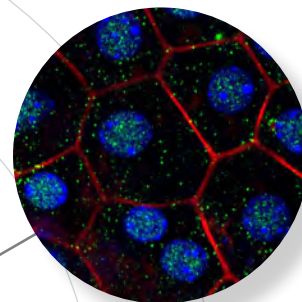
6. Photoreceptors are studied in a CRISPR-modified frog model where they are damaged in ways similar to AMD. (Courtesy of Brittany Carr, PhD, University of British Columbia, Canada)

Funding New Frontiers in Neurodegenerative Research



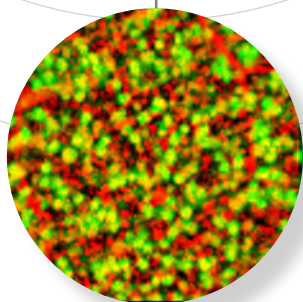
Alzheimer's Disease Research

Biomarkers
Cells & Circuits
Fats & Proteins
Genomics
Inflammation
Metabolism
Other Proteins
Resilience
Sex-Based
Sleep
Tau
Translational
Vascular
Waste Clearance



Macular Degeneration Research

Cell Metabolism
Diet
Drusen Formation
Genes
Geographic Atrophy
Innovative Approaches
Cell Regeneration
Early-Stage AMD



National Glaucoma Research

Eye Pressure
Glaucoma Causes
Eye-Brain Connection
Predicting Outcomes
Nerve Regeneration

Inside

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Images on left:

ADR Research Art: The brain's resident immune cells, microglia, are involved in Alzheimer's and neurodegeneration. Microglia (black) surround an amyloid-beta plaque (red). (Courtesy of Jonas Neher, PhD, German Center for Neurodegenerative Diseases, Germany)

MDR Research Art: An image of patient-derived induced pluripotent stem cells, differentiated to RPE cells. (Courtesy of Daniel Hass, PhD, University of Washington)

NGR Research Art: Overlay of retinal ganglion cell images obtained using two different non-invasive imaging instruments. (Courtesy of Robert Zawadzki, PhD, University of California, Davis)

5x

BrightFocus grants have increased fivefold from a decade ago.

With Gratitude.

It has been an incredible year of advancement for BrightFocus. From driving bold scientific collaborations across the globe to expanding our robust research portfolio and building upon new discoveries to defeat Alzheimer's, macular degeneration, and glaucoma, our commitment to curing diseases of mind and sight is unwavering.

BrightFocus awarded nearly \$25 million in grants this year, a fivefold increase in annual funding from a decade ago. The awards were given to launch 95 new scientific projects that support BrightFocus' 360-degree approach to research and seek to foster a better understanding of the root causes of disease onset, improve early disease detection and diagnosis, and develop effective new drugs and treatments.

One game-changing example, rooted in key, early research funding from BrightFocus, is the newly FDA-approved anti-VEGF medicine which significantly improves patient care by reducing the frequency of injections for patients with age-related macular degeneration.

We continue to broaden the field of research and are proud that this year, 44 percent of our awarded scientists are women; nearly 25 percent are to leading institutions outside the U.S.; and 80 percent of the new awards will support promising, early-stage researchers whose new ideas may lead to breakthroughs.

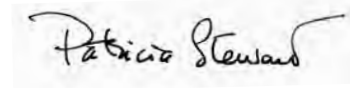
This diversity of perspectives gives way to bold ideas and promising novel science, like an in-depth, international research collaboration to study the link between Down syndrome and Alzheimer's. As many as 80 percent of this population have Alzheimer's pathology by the time they reach middle-age.

Because of you—our generous and growing community of donors, scientists, and friends—we can continue to fuel the drive and brilliance of our researchers working around the world to save mind and sight.

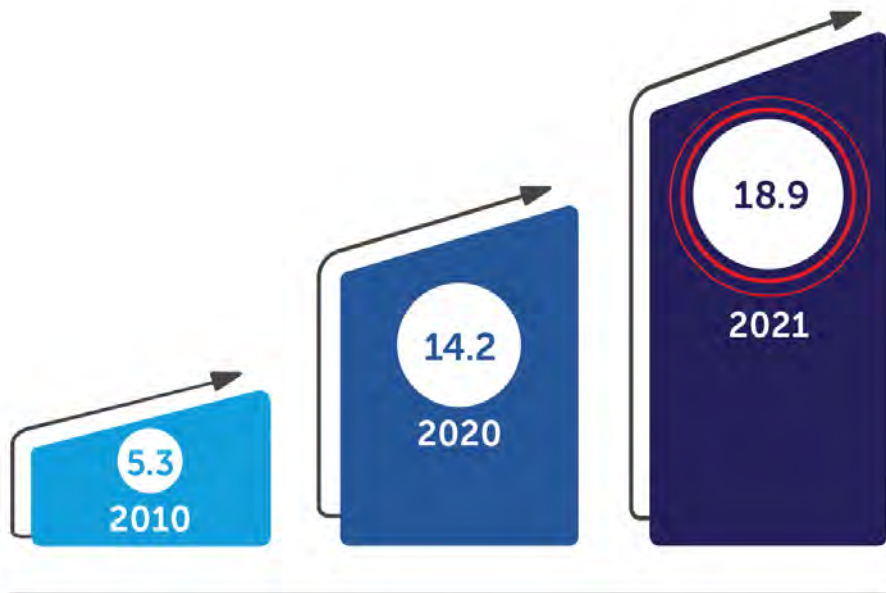
We are deeply grateful to partner with you in our quest toward a cure. Together, we make a difference.



Stacy Pagos Haller
President and CEO



Patricia McGlothlin Stewart, CFP
Chair, Board of Directors



Impact factor, *Molecular Neurodegeneration* scientific journal.



Science that Makes a Difference

The impact factor of *Molecular Neurodegeneration*, the official BrightFocus scientific journal, has risen to

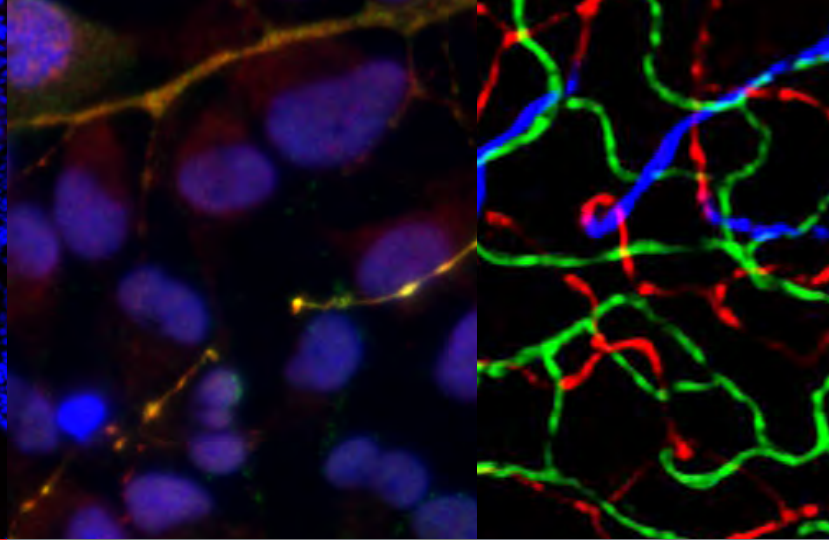
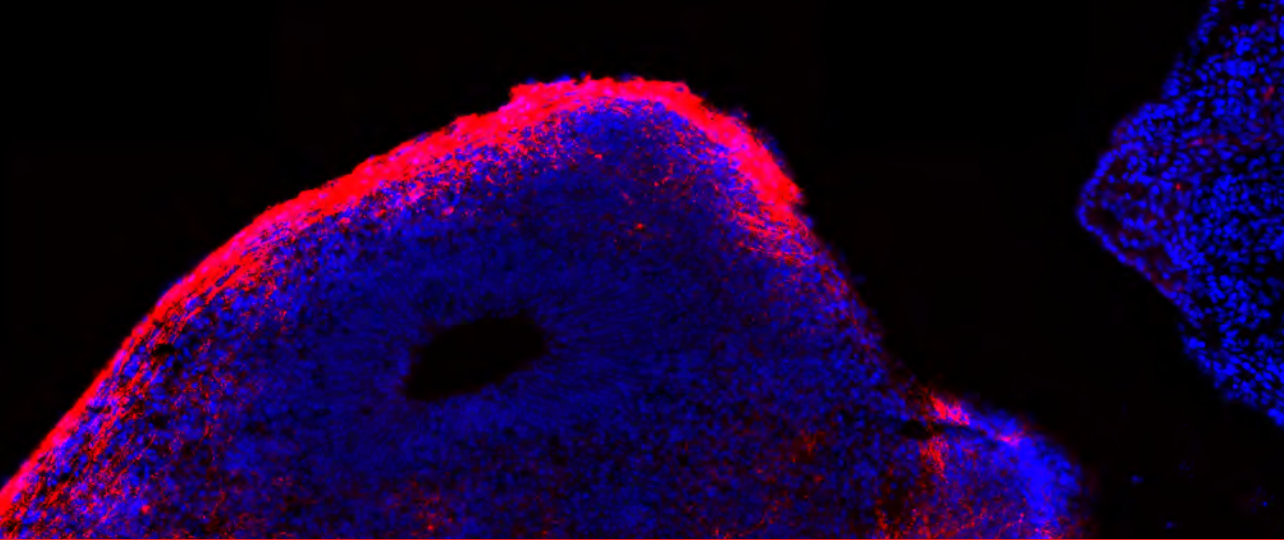
18.9

a 33% increase from 2020, making it the top-ranked open-access publication in its field.

A scientific journal's impact factor is derived from how often its articles are cited in scientific literature which reflects the journal's influence in shaping scientific progress.



"*Molecular Neurodegeneration's* impact factor is a tribute to the scientific discoveries and collaborations that BrightFocus is fostering to cure diseases of mind and sight," said Diane Bovenkamp, PhD, BrightFocus vice president, scientific affairs.

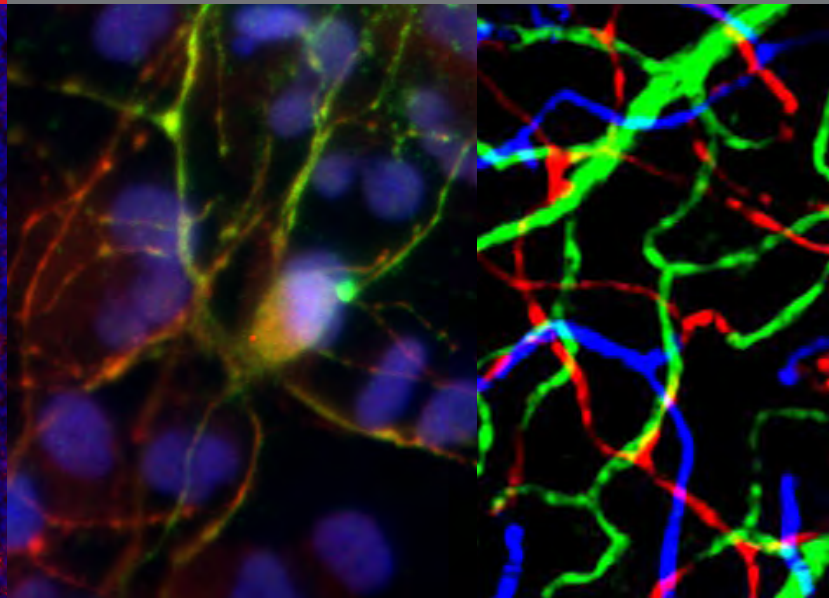
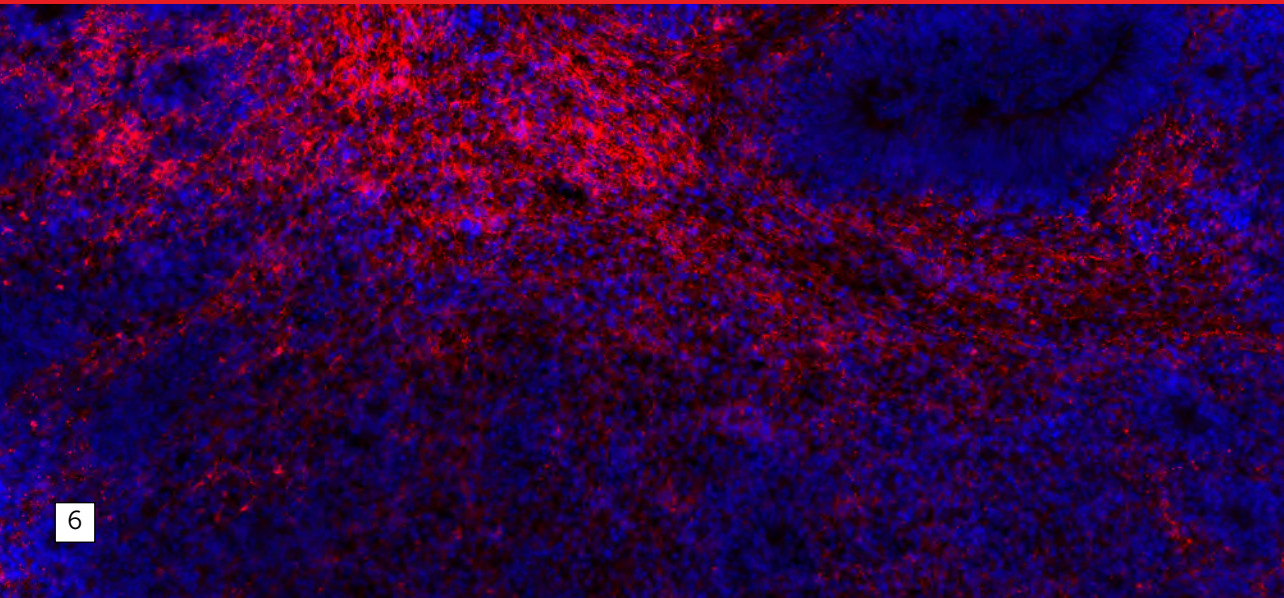


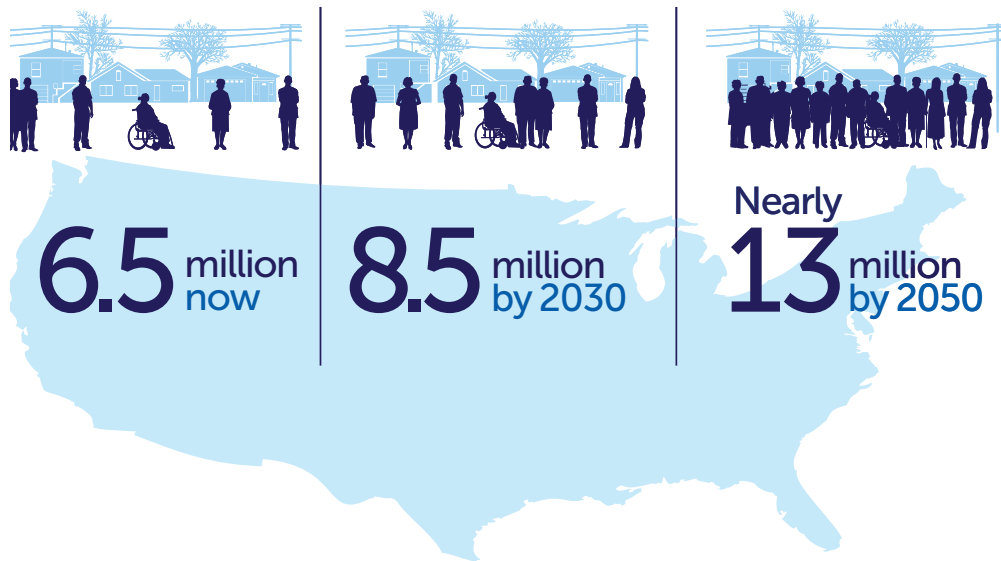
There are over

55 million

people worldwide living with Alzheimer's
and other dementias.

In 2022, BrightFocus
awarded nearly
\$14 million in funding
for 55 new Alzheimer's
research grants.





Our Alzheimer's researchers are tackling the disease from all angles—investigating how multiple complex systems like cardiovascular, endocrine, and immune, interact to influence the disease in order to develop earlier detection strategies and novel new treatments.

Page 6, left: Organoids, or 3D tissue cultures derived from stem cells, can replicate organs with disease. A cerebral organoid with frontotemporal dementia expresses pathological tau (red). (Courtesy of Hongjun Fu, PhD, The Ohio State University)

Page 6, middle: Human neurons with a mutation for frontotemporal dementia (red) express pathological tau (green). (Courtesy of Kathryn Bowles, PhD, Icahn School of Medicine at Mount Sinai)

Page 6, right: The vasculature, or layers of blood vessels in a mouse retina, is being used to study interactions between the brain and blood in Alzheimer's disease. (Courtesy of Melanie Samuel, PhD, Baylor School of Medicine)

“Standardizing electronic records will help achieve equity by improving the accuracy, speed, and diversity of patient recruitment for Alzheimer’s clinical trials.”

Diane Bovenkamp, PhD



Health Equity Through Better Alzheimer’s Data

A new report co-authored by Diane Bovenkamp, PhD, vice president, scientific affairs; Constantine G. Lyketsos, MD, former ADR grantee, Johns Hopkins University; and others calls for the development and adoption of a Standard Health Record for Dementia (SHRD, pronounced “shared”) to advance health equity by collecting and sharing real-world data about Alzheimer’s and related dementias in diverse population groups.



Above: Laurie Ryan, PhD, National Institute on Aging; Phyllis Ferrell, Eli Lilly; Adam Shapiro, actor and director; Consuelo Wilkins, MD, Vanderbilt University School of Medicine; Nancy Lynn, BrightFocus.

CareCon: A Partnership on Alzheimer’s Awareness

Nancy Lynn, BrightFocus vice president, strategic partnerships, shared the latest Alzheimer’s research updates during the second annual Hilarity for Charity CareCon, a free, virtual event, designed to educate, inspire, and empower Alzheimer’s and dementia family caregivers with support, knowledge, and community.



Investing in Women’s Alzheimer’s Research

Women’s Health Access Matters (WHAM) recently announced Sharyn Rossi, PhD, BrightFocus director of scientific programs, neuroscience, to its collaborative that is working to increase funding for women-focused Alzheimer’s research—an unmet need.



Left to right:
Ganesh Babul, PhD;
researcher holding
a DRIVES device;
a researcher in his
lab. (Courtesy of
Washington University
in St. Louis)

Changes in Driving Behavior Can Predict Alzheimer's

Ganesh Babul, PhD, a BrightFocus Alzheimer's Disease Research grantee, is at the forefront of bold science to more accurately predict and pinpoint the start of Alzheimer's disease (AD).

Dr. Babul, originally from Guyana, has developed a highly integrated program to evaluate driving behaviors in older adults that may signal functional cognitive changes that can serve as biomarkers of AD. This research combines Babul's interests in driving, geriatrics, health disparities, and AD.

His lab at Washington University in St. Louis uses his new technology, Driving Real-World In-Vehicle Evaluation System (DRIVES), to collect data on driving including distances, acceleration, braking, and speeding to detect subtle preclinical cognitive changes that might be missed by traditional cognitive testing.

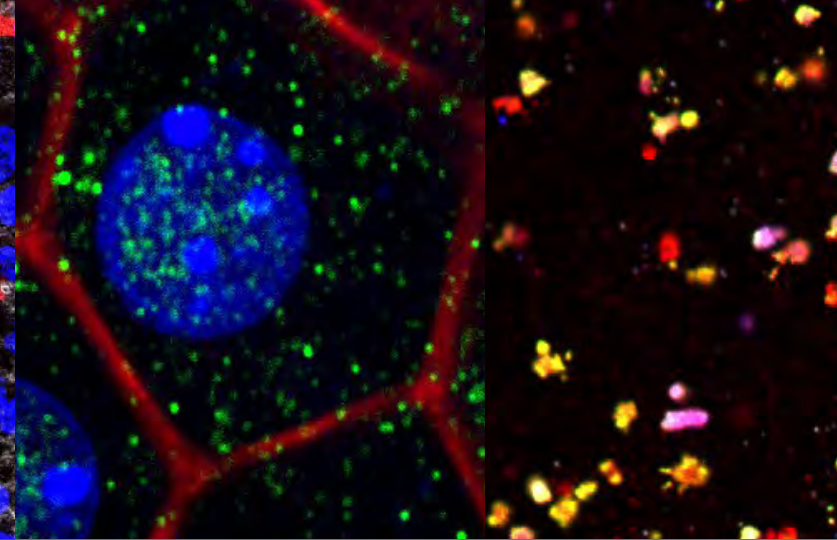
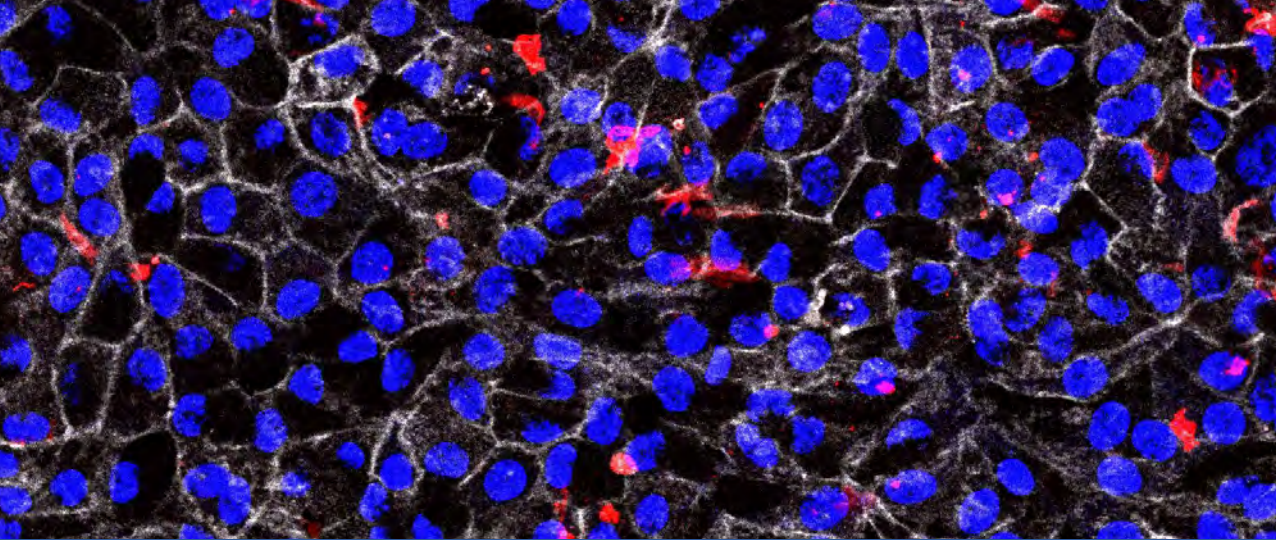
Eventually he hopes to take DRIVES into the clinic for real-world use.

In addition, Dr. Babul hopes to use this technology to develop and validate effective strategies to improve older people's driving and other functional skills so they can maintain their independence and age in place longer. "I am incredibly grateful and humbled to BrightFocus donors," Babul said. "The funding I received will allow us to collect data that will support larger grants and collaboration across different disciplines, thus embracing the team science ideals to solve this very complex problem."

"I believe science is not immutable, but a tool that we adjust and change to help find better treatments, interventions, and cures," he added. "This is no more evident than in the field of aging and dementia."

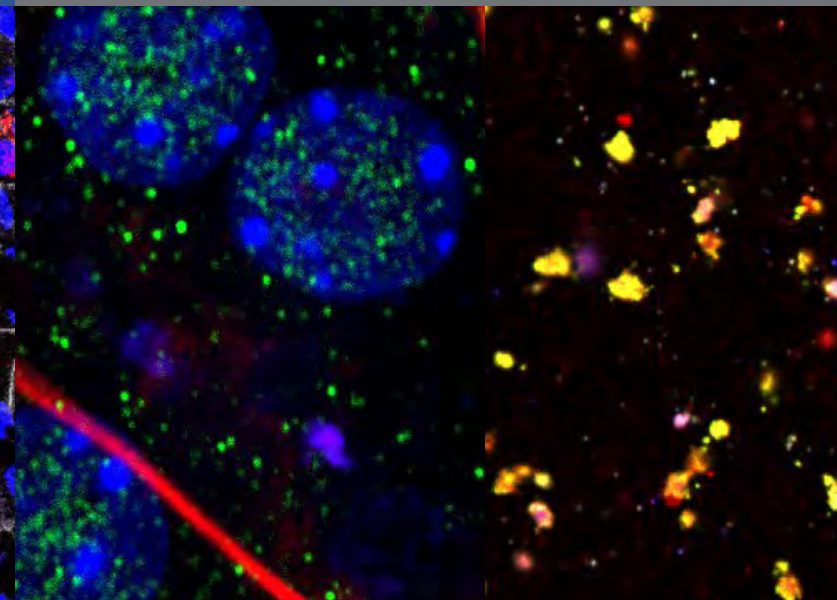
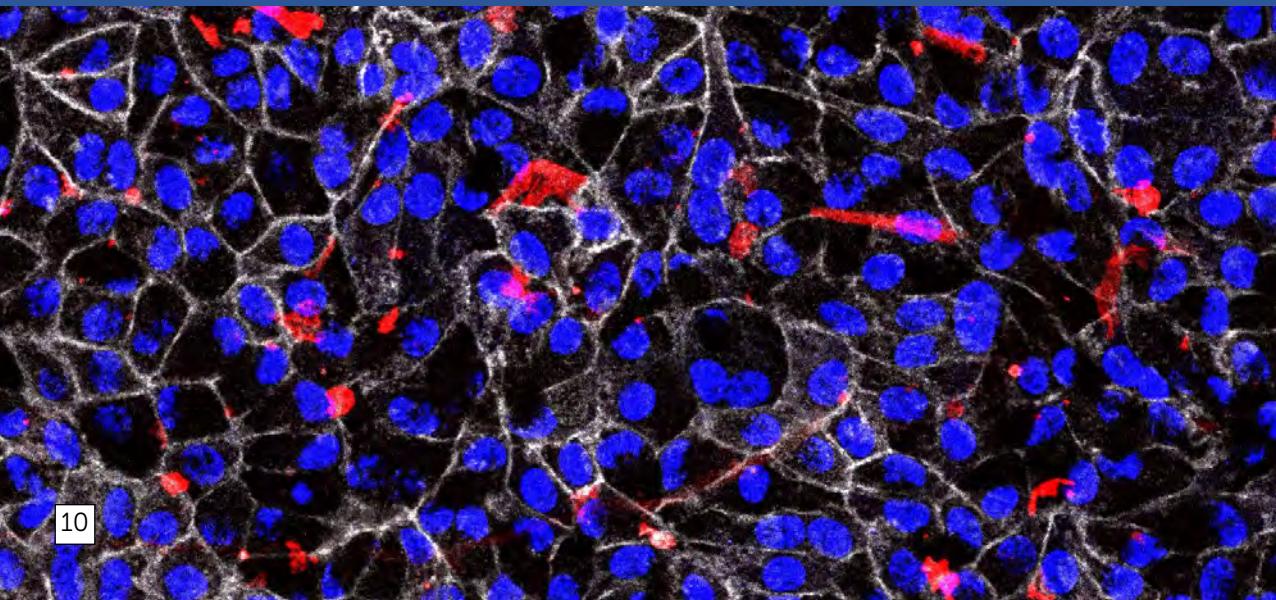
"The funding I received will allow us to support larger grants and collaboration across different disciplines—to solve this very complex problem."

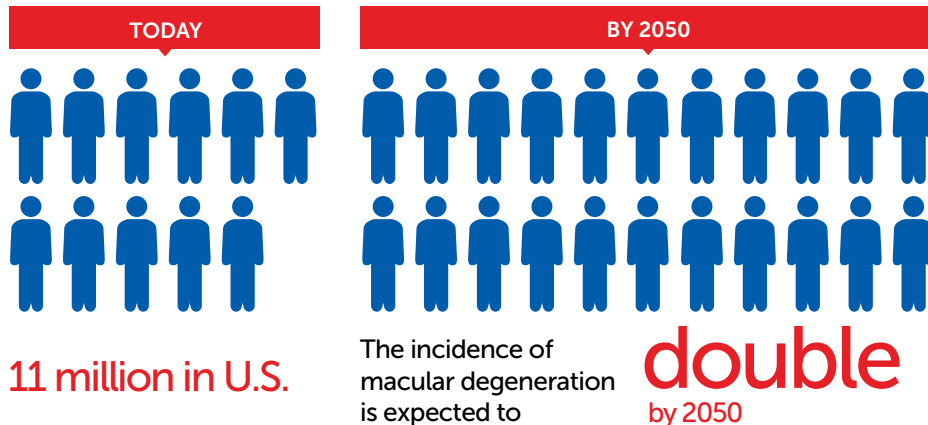
Ganesh Babul, PhD



Age-related macular degeneration (AMD) is the leading cause of blindness in people over age 50 worldwide, and is expected to affect 288 million by 2040.

In 2022, BrightFocus awarded nearly \$7 million in funding for 21 new macular degeneration research grants.





We are funding studies looking at the influence of early life events on AMD.

From a disease-in-a-dish approach to screening for FDA-approved drugs, we have invested in several promising avenues of research that cover a broad array of innovative scientific approaches.

Page 10, left: A cross-section of the choriocapillaris, or “bed” of blood vessels that feeds the retinal area. (Courtesy of Benjamin Thomson, PhD, Northwestern University)

Page 10, middle: Microscopic image of the retinal pigmented epithelium, a layer of cells supporting the retina, reveals a characteristic “honeycomb” pattern. (Courtesy of Antonio Escudero Paniagua, PhD, University of California, Los Angeles)

Page 10, right: Phagosomes—a part of the retinal “housekeeping” team—are being studied for their role in macular degeneration. (Courtesy of Antonio Escudero Paniagua, PhD, University of California, Los Angeles)

BrightFocus® Chats

The Impact of Diet on Vision Loss

BrightFocus Chats, our monthly in-depth conversation series, features the latest news and advice from expert scientists, clinicians and low vision specialists for those living with vision loss.

Former BrightFocus Macular Degeneration Research grantee Sheldon Rowan, MD, an assistant ophthalmology professor at Tufts University School of Medicine and scientist at the Jean Mayer USDA Human Nutrition Research Center on Aging, recently joined a Chat to discuss the best foods to eat for long-term eye health. He shared with listeners the importance of a low-glycemic diet that, along with other healthy lifestyle choices, can serve as an essential tool to stave off AMD. "There's never an inevitability of macular degeneration—you can always do something," said Rowan.

Past chats are archived and accessible on the BrightFocus website.



"A low-glycemic diet, along with other healthy lifestyle choices, can serve as an essential tool to stave off AMD."

Sheldon Rowan, PhD



Participants during a recent AMD Community Circle.

Creating a Virtual AMD Community

Designed as a community forum for those living with macular degeneration, the AMD Community Circle provides the opportunity for participants to share tips and ask questions in a private, virtual platform.

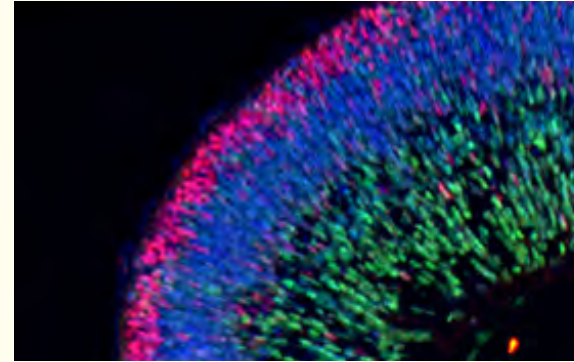
Increasing Awareness of Geographic Atrophy

A new BrightFocus resource about geographic atrophy (GA), an advanced and severe form of age-related macular degeneration (AMD) was recently featured in the National Eye Institute's Eye Health Connection newsletter. The GA fact sheet covers symptoms, diagnoses, and tips for patients and families living with the disease.



Macular Degeneration Research

Researcher Spotlight



Left to right: Maria Valeria Canto-Soler, PhD, when she first received a BrightFocus grant to build the first retina-in-a-dish model to study AMD; A mini human retina in a dish, derived from adult stem cells, provides a new model for studying AMD. (Courtesy of Maria Valeria Canto-Soler, PhD, University of Colorado)

On A Journey to Restore Vision Loss from AMD

As a young biology student in Argentina, Maria Valeria Canto-Soler dreamt of studying elephants and other wildlife in Africa.

Instead, "I'm in a dark room sitting in front of a microscope," she joked. Yet she's now on an adventure to restore lost sight.

In 2016, Dr. Canto-Soler received the Helen Juanita Reed Award from the BrightFocus Macular Degeneration Research program to build the first retina-in-a-dish model to study age-related macular degeneration (AMD). It was created by sampling stem cells from adult tissue—typically skin or blood—then coaxing them to multiply and differentiate into retinal tissue. She knew it was important to recreate both photoreceptors—the nerve cells that receive and process light—and the surrounding tissue that nourishes and maintains them. The ultimate goal is to transplant parts of the retinal machinery that are no longer functioning.

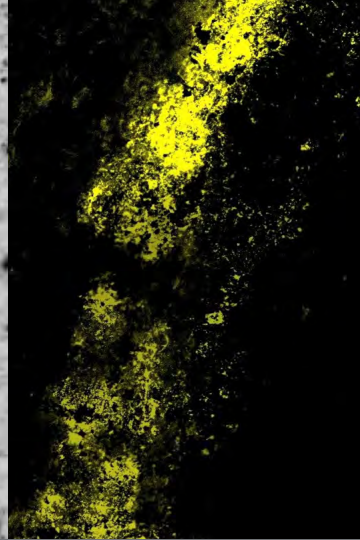
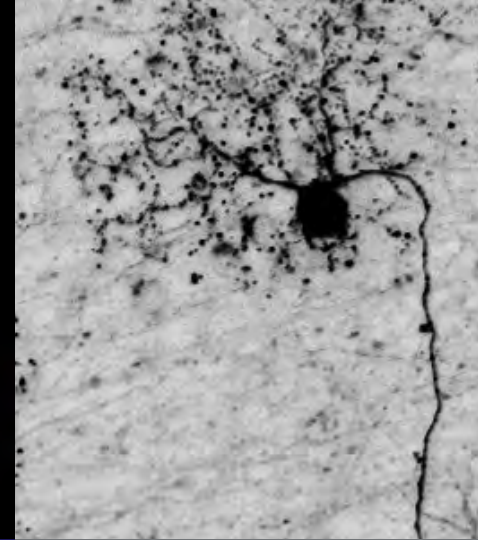
Now at the University of Colorado School of Medicine and its Gates Institute for Regenerative Medicine, she and her colleagues used the model to show that retinal tissue, when stressed, releases nanosized cell particles associated with drusen formation. Their discovery could lead to earlier diagnosis and new therapies.

Canto-Soler's Human 3D Retina Modeling Lab is using the retinal organoid she developed to advance innovative stem cell-based technologies to prevent and cure AMD.

"I have become quite an optimist," Dr. Canto-Soler said last year. "I really didn't think you could regenerate retinal layers and photoreceptors that respond to light, but things you never thought were possible may actually happen!"

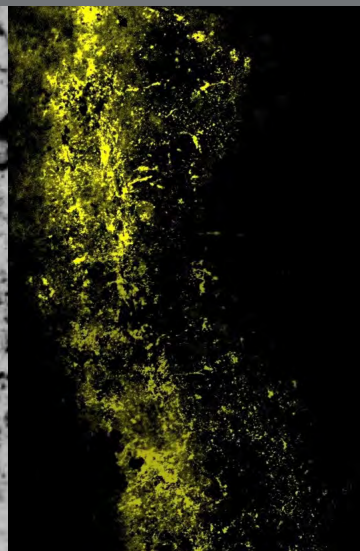
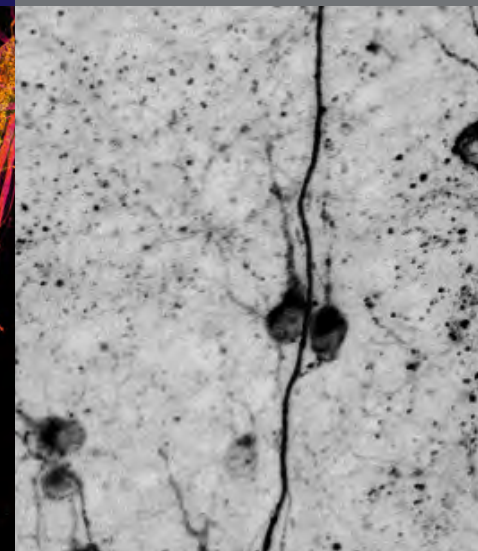
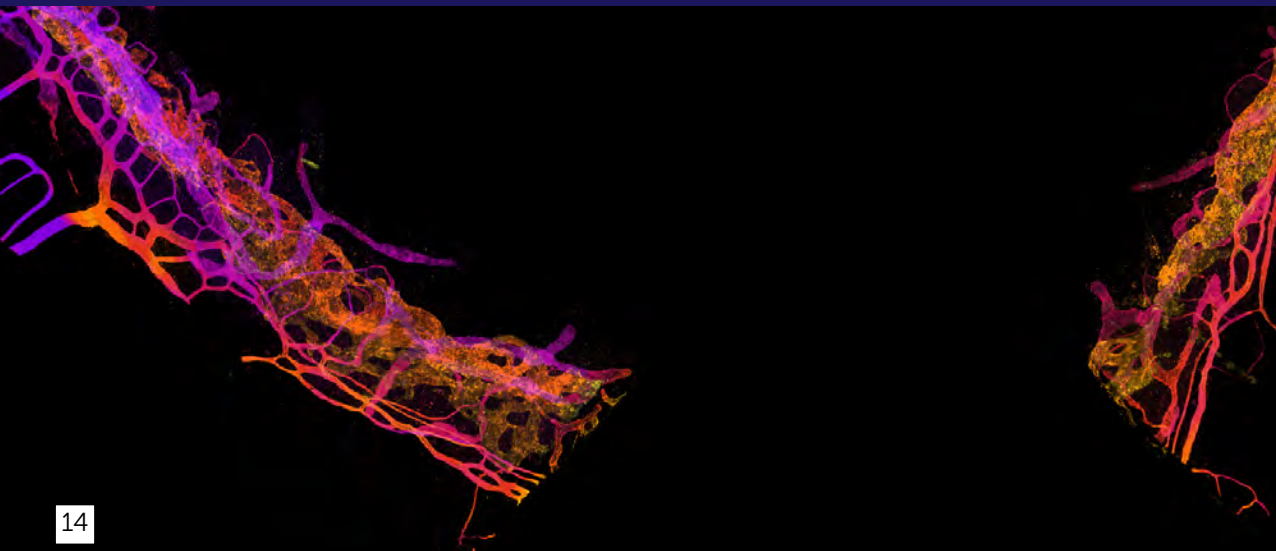
"Things you never thought were possible may actually happen!"

Maria Valeria Canto-Soler, PhD



Glaucoma is the most common cause of irreversible blindness worldwide.

In 2022, BrightFocus awarded nearly \$4 million in funding for 19 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



Page 14, left: In a mouse model, eye blood vessels and outflow pathways are studied to develop molecules that lower eye pressure. (Courtesy of Ester Reina-Torres, PhD, Imperial College of Science, Technology and Medicine, UK)

Page 14, middle: Retinal ganglion cells of zebrafish are being studied for their ability to regenerate. (Courtesy of Matthew V. Veldman, PhD, Medical College of Wisconsin)

Our glaucoma researchers are advancing newer imaging techniques for early detection,

exploring moderate-intensity exercise to slow vision loss, and finding new ways to control eye pressure—taking a 360-degree approach to ending this disease.

Page 14, right: Mouse eye with bright areas showing greater outflow (Courtesy of Ester Reina-Torres, PhD, Imperial College of Science, Technology and Medicine, UK)



Leading the Way in Vision Research



Nearly 100 current and former National Glaucoma Research and Macular

Degeneration Research grantees shared their research results at this year's meeting of the Association for Research in Vision and Ophthalmology (ARVO), the largest conference for vision research in the world.

Washington University in St. Louis professors, Michael Kass, PhD and Mae Gordon, PhD, were presented with the 2022 Helen Keller Prize for Vision Research by BrightFocus, in partnership with the Helen Keller Foundation for Research and Education, for their landmark work that led to a significant understanding of the natural progression and effective treatment of glaucoma, which drove

improvements in public health for vision disease.

BrightFocus was also honored to pay tribute to Johns Hopkins University's Sheila West, PhD, PharmD, the 2020 Keller Laureate, for her seminal work to curb blindness in developing nations.

Top-ranking grant proposals from the BrightFocus class of 2022 vision grantees, as determined by our scientific review committees of leading advisors in the field, were recognized at a networking breakfast event.



Above: Helen Keller Prize for Vision Research awardees top to bottom: Sheila West, PhD, Johns Hopkins University (2020 awardee); Michael Kass, MD and Mae Gordon, PhD, Washington University in St. Louis (2022 awardees).

To right: Congratulations to BrightFocus Foundation's 2022 named vision award recipients. From left: Diane Bovenkamp, PhD; Lev Prasov, MD, PhD; Thomas V. Johnson III, MD, PhD; Preeti Subramanian, PhD; Ella Berry, PhD, receiving the award on behalf of Emmanuelle Souzeau, PhD; Stacy Pagos Haller, and Lucia Celkova, PhD. Missing is Leah VandenBosch, PhD who could not attend the awards ceremony in person.





The team is made up of five current and former BrightFocus National Glaucoma Research grantees: from left, Jason Meyer, PhD; Brad Fortune, PhD; Ben Sivyier, PhD; Yvonne Ou, MD; and Gareth Howell, PhD.

“Dream Team” of BrightFocus Glaucoma Grantees

Glaucoma damages axons, the long tails of neurons called retinal ganglion cells (RGCs). Axons are threaded like cables through an opening between the eye and brain, forming the optic nerve. The outermost layers—supplying peripheral vision—are the first to go. Damaged RGCs do not regenerate; the hope is to someday grow them in the lab and transplant them into the eye—a chief goal of National Eye Institute (NEI) Audacious Goal Initiative. Last year, seeking ways to improve the long-term survival and integration of transplanted RGCs, NEI awarded \$6.7 million to a team of experts at different research institutions.

NEI’s entire “dream team” is composed of current or former National Glaucoma Research grantees, who developed their expertise in part thanks to BrightFocus funding.

They include Jason Meyer, PhD (Indiana University School of Medicine), a leader in stem cell techniques to create RGCs from adult tissue samples; Brad Fortune, OD, PhD (Legacy Research Institute), whose glaucoma model will be used; Ben Sivyier, PhD (Oregon Health and Science University), and Yvonne Ou, MD (University of California, San Francisco), who together with Dr. Sivyier will assess the functional and anatomical integration of donor ganglion cells; and Gareth Howell, PhD (Jackson Laboratories), who will monitor immune-like responses.

“There’s such a strong importance placed on collaborative science,” said Dr. Meyer. “We all have our own distinct set of expertise and skills, and when we have that combined, we create a powerful team that can really address some of the challenges of using stem cells to repair the damaged retina in glaucoma.”

“We all have our own distinct set of expertise and skills, and when we have that combined, we create a powerful team.”

Jason Meyer, PhD

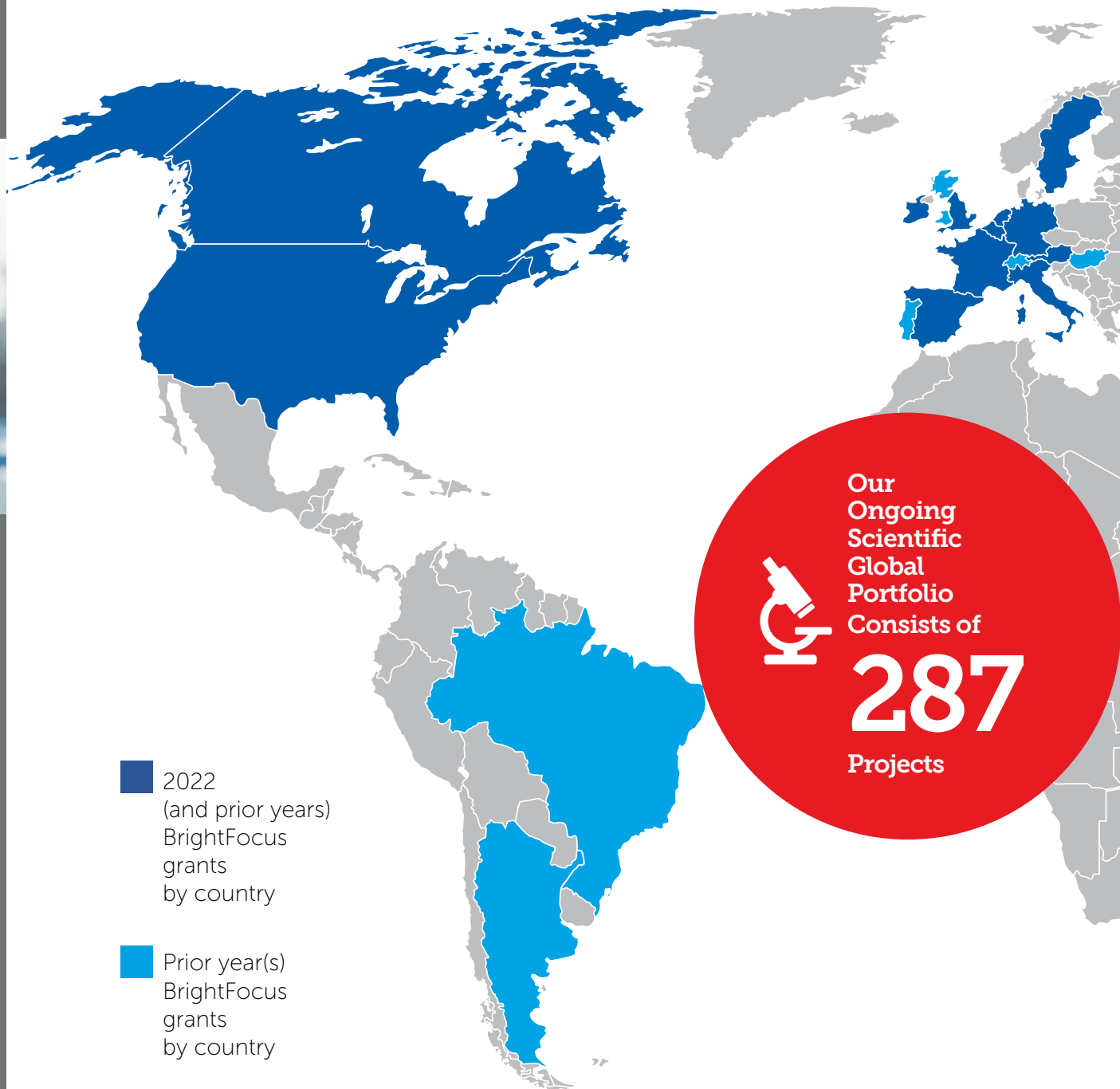


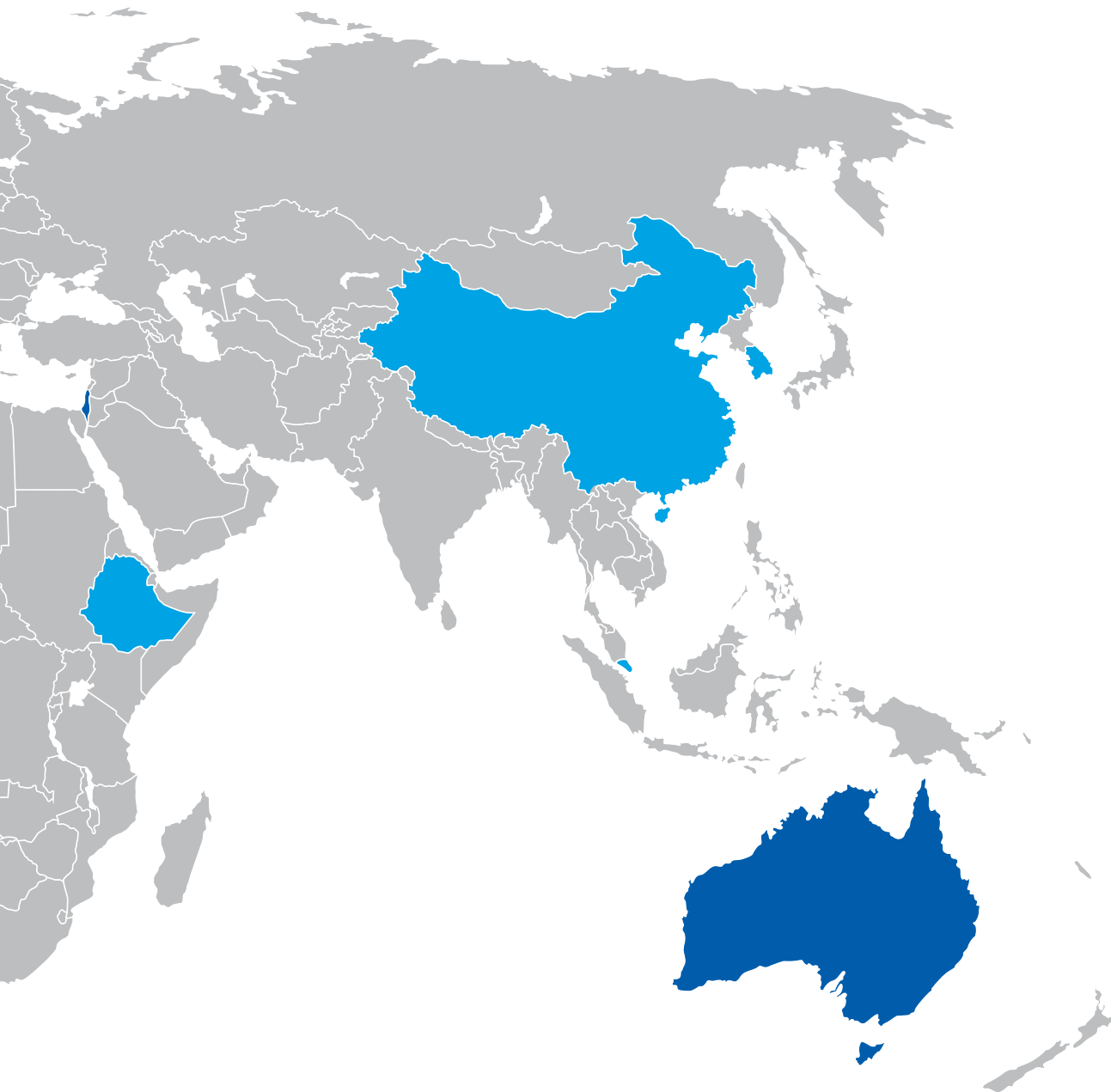
BrightFocus Research Awards

that were offered total nearly \$25 million in 2022.

Our 287 active projects are in:

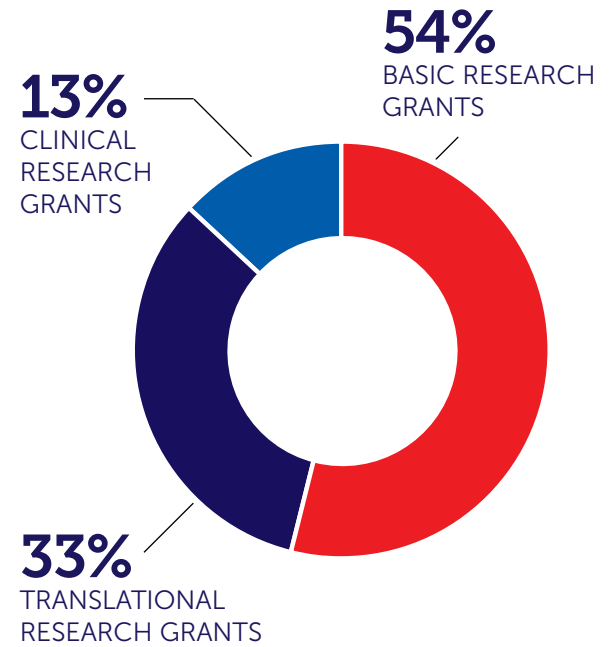
- 17 countries
- 33 U.S. states
- 112 cities worldwide
- 154 global institutions





2022 BrightFocus Grants at a Glance

As of July 15, 2022



BASIC

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

CLINICAL

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

TRANSLATIONAL

Research to move findings from the lab bench to the "bedside" by testing potential treatments.

Alzheimer's Disease Research

Influence of Testosterone on Dementia in Male Mice

Charly Abi Ghanem, PhD

ALBANY MEDICAL COLLEGE
Fellowship Mentor:
Kristen Zuloaga, PhD
Fellowship Mentor:
Sally Temple, PhD
NEURAL STEM CELL INSTITUTE

Stathmin-2 as a New Biomarker and Disease Modifier in Alzheimer's Disease

Ana Rita Agra de Almeida Quadros, PhD

MASSACHUSETTS GENERAL HOSPITAL
Fellowship Mentor:
Clotilde Lagier-Tourenne, MD, PhD

Dysfunction of the Regulation of Cerebral Blood Flow in Alzheimer Disease

Antoine Anfray, PhD

WEILL MEDICAL COLLEGE OF CORNELL UNIVERSITY
Fellowship Mentor:
Costantino Iadecola, MD

Revealing Early Biomarkers in Alzheimer's Disease

Uri Ashery, PhD

TEL AVIV UNIVERSITY (ISRAEL)
Co-PI: Shahar Alon, PhD
BAR-ILAN UNIVERSITY (ISRAEL)

Testing for Vulnerable Neuronal Connections in Early AD

Samuel Barnes, PhD

IMPERIAL COLLEGE LONDON (UNITED KINGDOM)
Co-PI: Johanna Jackson, PhD

Mapping Brain Connectivity Changes in Alzheimer's Disease

Kevin Beier, PhD

UNIVERSITY OF CALIFORNIA, IRVINE

Understanding TREM2 Signaling as an AD Target

Thomas Brett, PhD

WASHINGTON UNIVERSITY IN ST. LOUIS

The Role of Sleep in Alzheimer's Disease Disparities

Omonigho Bubu, MD, PhD

NEW YORK UNIVERSITY SCHOOL OF MEDICINE

Identifying Women-Specific and Men-Specific Risk Factors for Alzheimer's Disease

Gael Chetelat, PhD

UNIVERSITY OF CAEN NORMANDIE (FRANCE)
In partnership with the Fondation Vaincre Alzheimer

Studying Lysosomal Vulnerability in Aging and Alzheimer's Disease

Ching-Chieh Chou, PhD

STANFORD UNIVERSITY
Fellowship Mentor:
Judith Frydman, PhD

Advanced Imaging of the Spatial Organization of Brain Cells in Alzheimer's

Limor Cohen, PhD

HARVARD UNIVERSITY
Fellowship Mentor:
Xiaowei Zhuang, PhD

Impact of Midlife Subclinical Cardiovascular Disease on Alzheimer's

Marta Cortes-Canteli, PhD

SPANISH NATIONAL CENTRE FOR CARDIOVASCULAR RESEARCH (SPAIN)
Co-PI: Valentin Fuster, PhD
Co-PI: Juan Domingo Gispert, PhD

This award is made possible in part by the support from The Sephardic Foundation on Aging

Neurovascular Changes During Midlife Hypertension and Alzheimer's Disease

Christian Crouzet, PhD

UNIVERSITY OF CALIFORNIA, IRVINE
Fellowship Mentor:
David Cribbs, PhD
Fellowship Mentor:
Bernard Choi, PhD

Liquid Biopsy for Detection of Cell Death in Alzheimer's Disease Based on cfDNA Methylation Patterns

Yuval Dor, PhD

HEBREW UNIVERSITY OF JERUSALEM (ISRAEL)
This award is made possible in part by the support from The Sephardic Foundation on Aging

Mapping the Crosslink of Senescence and Inflammation in Neurodegeneration

Violeta Duran Laforet, PhD

UNIVERSITY OF MASSACHUSETTS
Fellowship Mentor:
Michael Heneka, MD, PhD
Fellowship Mentor:
Dorothy Schafer, PhD

Exploring Microglial Activation in Normal Physiology and Disease

Gabriela Farias Quipildor, PhD

ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI
Fellowship Mentor:
Stephen Salton, MD, PhD

Mitochondrial DNA Oxidative Damage and Microglial Activation in Alzheimer's Disease

Lan Guo, PhD

UNIVERSITY OF KANSAS CENTER FOR RESEARCH

Validating the Receptor PILRA as an Alzheimer's Therapeutic Target

David Hansen, PhD

BRIGHAM YOUNG UNIVERSITY

Does Brain Activity in Early Life Predict Future Neurodegeneration?

Keith Hengen, PhD

WASHINGTON UNIVERSITY IN ST. LOUIS
Recipient of the Distinguished Investigator Award for Alzheimer's Disease Research

Understanding the Microglia Cell-Surface in Alzheimer's Disease

Brandon Holmes, MD, PhD

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
Fellowship Mentor:
James Wells, PhD
Fellowship Mentor:
Martin Kampmann, PhD
The Dr. Edward H. Koo Postdoctoral Fellowship Award for Alzheimer's Disease Research

Selective Cholinergic Activation Improves Hippocampal Activity

Seonil Kim, PhD

COLORADO STATE UNIVERSITY

Investigating the Role of TREM2 T96K in Alzheimer's Disease Pathogenesis

Hoang Le, PhD

MASSACHUSETTS GENERAL HOSPITAL
Fellowship Mentor:
Ana Griciuc, PhD
Fellowship Mentor:
Rudolph E. Tanzi, PhD

More Sensitive Measures Towards the Early Detection of Alzheimer's Disease

Stephanie Leal, PhD

RICE UNIVERSITY

Drivers of Vulnerability to Alzheimer's Disease Neuropathological Changes

Nicole Liachko, PhD
SEATTLE INSTITUTE FOR BIOMEDICAL AND CLINICAL RESEARCH

Abca1 Regulates Lipid Metabolism and Tau Pathology in the P301S/ApoE4 Mice

Alexandra Litvinchuk, PhD
WASHINGTON UNIVERSITY IN ST. LOUIS
Fellowship Mentor: David Holtzman, MD

Home-Based Noninvasive Brain Stimulation for Mild Alzheimer's Disease

Brad Manor, PhD
HEBREW REHABILITATION CENTER
Co-PI: Alvaro Pascual-Leone, MD, PhD

Identifying a Disease-Modifying Treatment for Alzheimer's

Courtney Marshall, PhD
UNIVERSITY OF PENNSYLVANIA
Fellowship Mentor: Virginia Lee, PhD

Assessment of Tandem Repeat Variation in Alzheimer's Disease

Alejandro Martin Trujillo, PhD
ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI

Do Protein Levels and Brain Structure Impact Cognition in Alzheimer Disease

Nicole McKay, PhD
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
Fellowship Mentor: Tammie Benzinger, MD, PhD

Modeling MRI Brain Aging in Autosomal Dominant Alzheimer's Disease

Peter Millar, PhD
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
Fellowship Mentor: Eric McDade, DO

Do Post-Translational Modifications Cause Tau to Shapeshift?

Sue-Ann Mok, PhD
UNIVERSITY OF ALBERTA (CANADA)
Co-PI: Carlo Condello, PhD
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Tau Variants in Blood to Diagnose and Stage Alzheimer's Disease

Laia Montoliu-Gaya, PhD
UNIVERSITY OF GOTHENBURG (SWEDEN)
Fellowship Mentor: Kaj Blennow, MD, PhD

Relationship Between Sleep Loss and Protein Buildup in Alzheimer's Disease

Christopher Morrone, PhD
CENTRE FOR ADDICTION AND MENTAL HEALTH (CANADA)
Fellowship Mentor: Wai Haung (Ho) Yu, PhD

Is the Niacin Receptor HCAR2 Protective in Alzheimer's Disease?

Miguel Moutinho, PharmD, PhD
INDIANA UNIVERSITY
Fellowship Mentor: Gary Landreth, PhD

Understanding Brain Networks Causing Associative Memory Impairments in AD

Tatsuki Nakagawa, PhD
UNIVERSITY OF CALIFORNIA, IRVINE
Fellowship Mentor: Kei Igarashi, PhD

Investigating TDP-43 Biology in Alzheimer's Disease and LATE: Impact on the Clinical Diagnosis

Sandra O. Tomé, PhD
CATHOLIC UNIVERSITY OF LEUVEN (BELGIUM)
Fellowship Mentor: Dietmar Thal, MD

A Human Brain-in-a-Dish Model to Investigate Disease Mechanisms of FTD

Dominik Paquet, PhD
HOSPITAL OF THE LUDWIG MAXIMILIAN UNIVERSITÄT MÜNCHEN (GERMANY)

What is the Best Way to Give tDCS to People with Alzheimer's Disease?

Carlos Roncero, PhD
BAYCREST CENTRE FOR GERIATRIC CARE (CANADA)

Targeting Memory Circuits as a Therapeutic Strategy in Alzheimer's Disease

Carlos Saura, PhD
UNIVERSITAT AUTONOMA DE BARCELONA (SPAIN)
Co-PI: Arnaldo Parra-Damas, PhD

Imaging Probes for Precision Medicine in Alzheimer's Disease

Sahil Sharma, PhD
MEMORIAL SLOAN KETTERING CANCER CENTER
Fellowship Mentor: Gabriela Chiosis, PhD

Brain Rhythms to the Rescue: Stimulation to Protect the Brain From Stress

Annabelle Singer, PhD
GEORGIA INSTITUTE OF TECHNOLOGY

Leptin Protein and its Involvement in Alzheimer's Disease in Down Syndrome

Lorena Sordo Sordo, PhD
UNIVERSITY OF CALIFORNIA, IRVINE
Fellowship Mentor: Elizabeth Head, PhD

Tau Master Sites: Drivers of Causative Processes in Alzheimer's Disease

Kristie Stefanoska, PhD
FLINDERS UNIVERSITY (AUSTRALIA)
Fellowship Mentor: Arne Ittner, PhD

Identification of Protein Biomarkers for Aging and Alzheimer's Disease

Xiaojing Sui, PhD
NORTHWESTERN UNIVERSITY
Fellowship Mentor: Richard Morimoto, PhD

Reprogramming Microglia through Astrocyte Manipulation in Alzheimer's Brain

Julia TCW, PhD
BOSTON UNIVERSITY

Efficient Brain Delivery of Neuroprotective Antibodies

Peter Tessier, PhD
UNIVERSITY OF MICHIGAN
Co-PI: Colin Greineder, MD, PhD

Metabolism Driving Cell Death and Inflammation in Alzheimer's Disease

Larissa Traxler, PhD
UNIVERSITÄT INNSBRUCK
Fellowship Mentor: Jerome Mertens, PhD

APOE Immunotherapy as a Potential Treatment for Cerebral Amyloid Angiopathy

Susanne van Veluw, PhD
MASSACHUSETTS GENERAL HOSPITAL

Curbing Inflammation at Brain's Barrier in Alzheimer's Disease

Huixin Xu, PhD
BOSTON CHILDREN'S HOSPITAL
Fellowship Mentor:
Maria Lehtinen, PhD
Fellowship Mentor:
Mark Andermann, PhD
BETH ISRAEL DEACONESS MEDICAL CENTER

Understanding How Human Blood-Brain Barrier Cells Drive Alzheimer's Disease

Andrew Yang, PhD
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
Fellowship Mentor:
Saul Villeda, PhD

Sleep Restoration, Microglia and Alzheimer's Disease

Qiuchen Zhao, MD, PhD
MASSACHUSETTS GENERAL HOSPITAL
Fellowship Mentor:
Stephen Gomperts, MD, PhD

Macular Degeneration Research

Innovative Award

Mouse Models for Subretinal Fibrosis

Patsy M. Nishina, PhD
THE JACKSON LABORATORY
Co-PI: Juergen K. Naggert, PhD

The Molecular Events in Early Life That Lead to AMD

Przemyslaw Sapieha, PhD
HÔPITAL MAISONNEUVE-ROSEMONT (CANADA)

New Investigator Award

Regenerative Response in Spiny Mice

Manas R. Biswal, PhD
UNIVERSITY OF SOUTH FLORIDA
This award is made possible with support of the Free Family Foundation

Regulation of Capillary Blood Flow in the Choroid Vasculature

Albert Gonzales, PhD
UNIVERSITY OF NEVADA

Discovering an Invisible Layer in Retina and its Ties to AMD

Yifan Jian, PhD
OREGON HEALTH & SCIENCE UNIVERSITY

To Identify New Factors That Play a Role In Early Onset Drusen Maculopathy

Yara TE Lechanteur, MD, PhD
RADBOUD UNIVERSITY NIJMEGEN MEDICAL CENTRE (THE NETHERLANDS)
Mentor: Frans Cremers, PhD

Gene Regulation of RPE Maintenance

Lev Prasov, MD, PhD
UNIVERSITY OF MICHIGAN
The Dr. Joe G. Hollyfield Award

Stem Cell-Based Approaches to Identify New Drugs for Treating Dry AMD

Srinivasa Rao Sripathi, PhD
RETINA FOUNDATION OF THE SOUTHWEST

Macular Degeneration, Metabolism, and a Novel Mitigation Strategy

Thomas Wubben, MD, PhD
UNIVERSITY OF MICHIGAN

Post-Doctoral Fellowship Award

Cellular Scale Characterization of the RPE-Photoreceptor Complex in a Model for Geographic Atrophy Progression

Kristen Bowles Johnson, PhD, OD
INDIANA UNIVERSITY
Fellowship Co-Mentors:
Donald T. Miller, PhD & Jennifer J. Hunter, PhD
UNIVERSITY OF ROCHESTER

Investigating Multiarmed Cell Death (PANoptosis) in Dry AMD Progression

Lucia Celkova, PhD
TRINITY COLLEGE DUBLIN, (IRELAND)
Fellowship Mentor:
Matthew Campbell, PhD
The Elizabeth Anderson Award

Identifying FDA Approved Drugs to Reverse Dry AMD

Steffi Daniel, PhD
THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER
Fellowship Mentor:
John Hulleman, PhD
This grant is made possible by the support from The Ivan Bowen Family Foundation

Can Fatty Acid Oxidation Influence Drusen Levels in the Eye?

Daniel Hass, PhD
UNIVERSITY OF WASHINGTON
Fellowship Mentor:
James Hurley, PhD

Dark Matter: Developing a Nanoantioxidant-Based Therapeutic System for AMD

Yongsu Kwon, MD, PhD
UNIVERSITY OF NORTH CAROLINA
Fellowship Mentor:
Han Zongchao, MD, PhD

Killifish: A Novel Model of Age-Related Macular Degeneration

Nicole C. L. Noel, PhD
UNIVERSITY COLLEGE LONDON (UK)
Fellowship Mentor:
Ryan MacDonald, PhD

Machine Learning to Predict AMD-Associated Genetic Variant Impact

Leah VandenBosch, PhD
SEATTLE CHILDREN'S HOSPITAL
Fellowship Mentor:
Timothy Cherry, PhD
The Helen Juanita Reed Award

Bold Ideas Initiatives

A Novel High-Dose Statin for Treatment of Intermediate AMD

John Edwards
DRUSOLV THERAPEUTICS, INC.

Charity-Led Big Data Resource for Discovery of Novel Biomarkers for Multiple Conditions Using Eye Scans

Wen Hwa Lee, PhD
ACTION AGAINST AMD (UK)

National Glaucoma Research

Post-Doctoral Fellowship Award

Improved Imaging of the Outflow Pathway in the Living Human Eye

Alessandra Carmichael-Martins, PhD
INDIANA UNIVERSITY
Fellowship Mentor:
Stephen Burns, PhD

The Role of Reactive Astrocytes in Glaucomatous Axonal Degeneration

Catia Gomes, PhD
INDIANA UNIVERSITY SCHOOL OF MEDICINE
Fellowship Mentor:
Jason Meyer, PhD

Increased Pressure in Eye Affects the Neuronal Communications in the Brain

Prabhavathi Maddineni, PhD
UNIVERSITY OF NORTH TEXAS HEALTH SCIENCE CENTER
Fellowship Mentor:
Gulab Zode, PhD

Developing Communication Strategies for Genetic Risk Testing in Glaucoma

Emmanuelle Souzeau, PhD
FLINDERS UNIVERSITY (AUSTRALIA)
Fellowship Mentor:
Jamie E Craig, MBBS, PhD
The Thomas R. Lee Award

Standard Award

The Role of Podosomes in Regulating IOP

Michael G. Anderson, PhD
THE UNIVERSITY OF IOWA

Preserving Eye's Vision by Neuroprotecting Retinal Cells

Marco Feligioni, PhD
FONDAZIONE EBRI "RITA LEVI-MONTALCINI" (ITALY)

Study of Segmental Aqueous Outflow in Uveal Drainage Pathway

Haiyan Gong, MD, PhD
BOSTON UNIVERSITY
Co-PI: Carol Toris, PhD
UNIVERSITY OF NEBRASKA MEDICAL CENTER

New Tools for Leveraging Regenerative Medicine to Restore Sight in Glaucoma

Thomas V. Johnson III, MD, PhD
WILMER EYE INSTITUTE, JOHNS HOPKINS SCHOOL OF MEDICINE
The Douglas H. Johnson Award

Can Progression of Glaucoma be Slowed by Regular Exercise?

Andras Komaromy, DVM, PhD
MICHIGAN STATE UNIVERSITY

Cellular-Scale Imaging in the Living Eye to Study Glaucoma Pathophysiology

Kazuhiro Kurokawa, PhD
GOOD SAMARITAN FOUNDATION, LEGACY HEALTH SYSTEM

A Possible Link between Glaucoma and Alzheimer's Disease

Nick Marsh-Armstrong, PhD
UNIVERSITY OF CALIFORNIA, DAVIS

Human Stem Cell Modeling of the APBB2 Risk Variant for Glaucoma

Jason Meyer, PhD
INDIANA UNIVERSITY SCHOOL OF MEDICINE

Cell-To-Cell Communication in Health and Disease

Michael Risner, PhD
VANDERBILT UNIVERSITY MEDICAL CENTER
Co-PI: David Calkins, PhD

Investigating Autophagy in Nitric Oxide Production to Control Eye Pressure

Myoungsup Sim, PhD
DUKE UNIVERSITY SCHOOL OF MEDICINE

Combined Stem Cell and Trophic Factor Therapy for Glaucoma

Shaomei Wang, MD, PhD
CEDARS-SINAI MEDICAL CENTER

Hunting for Genes Controlling Optic Nerve Regeneration

Jiaying Wang, PhD
EMORY UNIVERSITY

Understanding Alterations in an Early Experimental Glaucoma Model

Hongli Yang, PhD
GOOD SAMARITAN FOUNDATION, LEGACY HEALTH SYSTEM
Co-PI: Priya Chaudhary, PhD

Bold Ideas Initiatives

Neuroprotection and Neuroenhancement in Glaucoma: A Clinical Trial for CNTF

Jeffrey Goldberg, MD, PhD
STANFORD UNIVERSITY

Special Thanks to Donors Supporting Ongoing Awards

Macular Degeneration Research

Addressing the Link Between Impairment in Phagosome Degradation and AMD

Antonio Escudero Paniagua, PhD
UNIVERSITY OF CALIFORNIA, LOS ANGELES
Fellowship Mentor:
David Williams, PhD
The Elizabeth Anderson Award

Does Aberrant Mechanotransduction Trigger RPE Atrophy in AMD?

Aparna Lakkaraju, PhD
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
The Lorraine Maresca Award

National Glaucoma Research

Deciphering the Local Effect of Glaucoma Risk Factors on Axonal Mitochondria

Romain Cartoni, PhD
DUKE UNIVERSITY MEDICAL CENTER
The Thomas R. Lee Award

Validation of Novel OCT-Based Imaging Tools for Noninvasive Monitoring

Robert Zawadski, PhD
UNIVERSITY OF CALIFORNIA, DAVIS
Co-Principal Investigator:
Pengfei Zhang, PhD
Dr. Douglas H. Johnson Award

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

Scientific Review Committees



Our World-Class Scientific Review Committees

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

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Hui Zheng, PhD
BAYLOR COLLEGE OF MEDICINE

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M. Flint Beal, MD
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UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

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Bin Zhang, PhD
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Xiongwei Zhu, PhD
CASE WESTERN RESERVE UNIVERSITY

Macular Degeneration Research

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RETINA FOUNDATION OF THE SOUTHWEST

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Joelle Hallak, PhD
UNIVERSITY OF ILLINOIS

Joe G. Hollyfield, PhD
THE CLEVELAND CLINIC FOUNDATION

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Lois Smith, MD, PhD
BOSTON CHILDREN'S HOSPITAL

National Glaucoma Research

Co-Chairs:

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OREGON HEALTH & SCIENCE UNIVERSITY

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DEVERS EYE INSTITUTE

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



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Stichting Alzheimer Onderzoek



France

Fondation Vancre Alzheimer



Germany

Alzheimer Forschung Initiative e.V.



The Netherlands

Alzheimer Nederland



Jumpstarting the Next Generation

The BrightFocus signature Fast Track series of scientific conferences provides a unique, immersive learning experience for new researchers that accelerates their knowledge, expertise, and visibility in the fields of Alzheimer's, macular degeneration, and glaucoma.

The inaugural Alzheimer's Fast Track meeting was developed in close coordination with Harry Steinbusch, PhD, Maastricht University, The Netherlands.

BrightFocus has expanded this successful "boot camp" model to glaucoma and macular degeneration, preparing some of the brightest young investigators for research careers aimed at prevention, treatment, and cures for these diseases of mind and sight.

*Clockwise from top left:
Malu Tansey, PhD, University of
Florida; Harry Steinbusch, PhD,
Maastricht University
(The Netherlands); Toinét Cronjé,
PhD, University of Copenhagen
(Denmark); Patrick Kehoe, PhD,
University of Bristol (UK).*



Day 2: Racial and Sex Disparities

Sid O'Bryant, PhD
Professor and Executive Director, Institute for Healthy Aging, Research Professor, Institute for Translational Research, UNorth Texas, United States
"AT(N) Biomarkers for MCI and Alzheimer's Disease Among Mexican Americans: The HABS-HD Study"



Rachel Buckley, PhD
Assistant Professor of Neurology, Massachusetts General Hospital, United States
"Sex Differences in Cognitive Decline and Resilience to Alzheimer's Disease"



Michelle Mielke, PhD
Professor of Neurology and Epidemiology, Mayo Clinic, United States
"Thinking About Sex and Gender Differences in Alzheimer's Disease and Related Dementias"



Now discussing the neurological effects of COVID-19 during #AlzFastTrack with Harry Steinbusch, PhD, Professor of @MaastrichtU, @ProfPatKehoe, and @MaluTansey. #neuroscience



Alzheimer's Fast Track

In 2021, BrightFocus held its first virtual Fast Track conference. Alzheimer's Fast Track convened 165 researchers from 23 countries—a record number of participants. Featured speakers addressed topics ranging from the neurological impact of COVID-19 to racial and sex-based disparities in research.

Expanding Diversity in Science

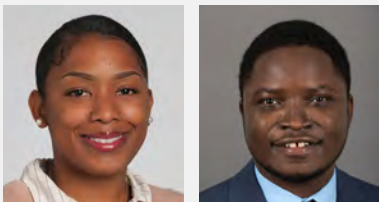
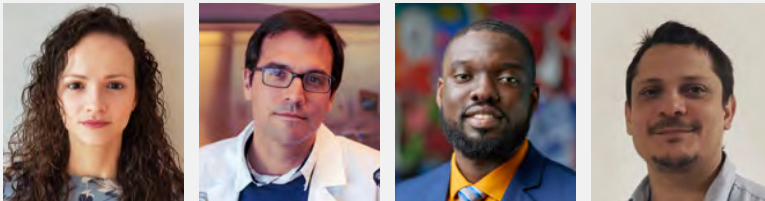
BrightFocus is committed to providing opportunities for scientists from diverse backgrounds to attend key research meetings and network with experts in their field. We are proud to have sponsored these diversity fellows for recent vision Fast Track meetings:

Glaucoma Fast Track



Left to right: *Cindy Hoppe, MSc, Schepens Eye Research Institute of Mass Eye and Ear, Harvard Medical School; Margarete Karg, PhD, Schepens Eye Research Institute of Mass Eye and Ear; Ajay Kumar, PhD, University of Pittsburgh; Sailee Sham Lavekar, MS, Indiana University School of Medicine; Kazuya Oikawa, PhD, University of Wisconsin-Madison; Monichan H. Phay, PhD, Schepens Eye Research of Mass Eye and Ear, Harvard Medical School; Ester Reina-Torres, PhD, Imperial College London, UK.*

Macular Fast Track



Left to right: *Bruna Costa, graduate student, Columbia University; Miguel Flores-Bellver, instructor, University of Colorado; Yeboah Gyening, graduate student, University of Oklahoma Health Science Center; Ezequiel Salido, research assistant professor, West Virginia University; Kendra Wilcots, graduate student, Lerner Research Institute; Felix Yemanyi, postdoctoral fellow, Boston Children's Hospital, Harvard Medical School.*



Graduate students, postdoctoral fellows, early-stage scientists and faculty at BrightFocus' third Glaucoma Fast Track meeting.



BrightFocus continues to lead the field in nurturing macular degeneration research and talent.

The Fast Track format is invaluable for those starting in the field to better understand the latest findings about this complex disease."

*Shyamanga Borooah, MBBS, PhD
Shiley Eye Institute,
University of California, San Diego,
a BrightFocus travel awardee and
Macular Fast Track attendee.*

Celebrating the Impact of Science

BrightFocus hosted its seventh annual gala at the National Portrait Gallery to spotlight exemplary scientists working with the foundation and showcased some of the world's most exciting research around the globe to end diseases of mind and sight.

"Now more than ever we understand the power of bold, innovative research to change lives," said BrightFocus President and CEO Stacy Pagos Haller. "We are seeing progress to defeat these devastating diseases, and are so proud to recognize some of these outstanding scientists."

Pictured: David M. Holtzman, MD, received the BrightFocus Scientific Impact Award; Sheila West, PhD, was awarded the Helen Keller Prize for Vision Research; and Ilyas Washington, PhD, received the BrightFocus Bench-to-Bedside Award.





Top left: Actor/singer Eric McCormack performs "Pure Imagination" in tribute to the legendary Gene Wilder.

Above left: National Glaucoma Research grantee Jason Meyer, PhD, has been a leader in genetically reprogramming adult cells to recreate and study cells affected by glaucoma; currently he's creating a "retina-in-a-dish" glaucoma model.

Above middle: Macular Degeneration Research grantee Joelle Hallak, PhD, is developing a statistical model that integrates imaging, genetic and clinical data to predict AMD progression to optimize and personalize each individual patient's treatment.

Above right: Alzheimer's Disease Research grantee Ksenia Kastanenka, PhD, is investigating whether non-neuronal cells contribute to Alzheimer's progression using state-of-the-art methodology, possibly leading to the development of novel therapeutics.

Above: BrightFocus grantees shared their latest research findings. From left: Alireza Faridar, MD (Houston Methodist Hospital); Kimberly Gokoffski, MD, PhD (University of Southern California Roski Eye Institute); Diane Bovenkamp, PhD; Stacy Pagos Haller; Sharyn Rossi, PhD (BrightFocus); Joelle Hallak, PhD (University of Illinois College of Medicine); Ksenia Kastanenka, PhD (Massachusetts General Hospital, Harvard Medical School); Ye Sun, MD, PhD (Harvard Medical School and Boston Children's Hospital); and Jason Meyer, PhD (Indiana University School of Medicine).

Brain Info LIVE®

Brain Info Live

Brain Info Live® is a free informative video series about brain health, Alzheimer's disease, and related dementias geared toward communities that are underrepresented in clinical trials and research studies. Since its launch in August 2021, it has expanded to include *Brain Info Live En Español*. Over 40 episodes have streamed to date on subjects ranging from the differences between Alzheimer's and dementia to prevention and financial and life management tips.

Images from Brain Info Live, including:

Top image to right, musician Ashley Campbell, daughter of the late Glen Campbell, legendary singer and musician who passed away from Alzheimer's; Second image from top, John Lewis, founder of Energy Fitness.

Page 33, top row left to right, a guest expert on Alzheimer's, Goldie Smith Byrd, PhD, Wake Forest School of Medicine; Lucina Rodriguez, Los Cenzonties Cultural Arts Academy.





Sharing Personal Caregiving Tips

Richard Lui, MSNBC news anchor, author, and filmmaker joined BrightFocus for a special session of Brain Info Live to discuss his experience caring for his father with Alzheimer's and glaucoma, with Maddy Dychtwald, Age Wave co-founder and BrightFocus board member. Lui also shared personal caregiving tips and answered audience questions.

Our Donors

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.

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

Donor Spotlight

Supporting Research to Save Sight

Lyn O'Niel of Boulder Creek, California, is longtime member of the Santa Cruz community where she raised her two children. She worked for 35 years at the Santa Cruz County Public School system, serving to coordinate an occupational program.

A volunteer and former president of the Santa Cruz Archeological Society, she often used her vacation days to help at dig sites for prehistoric artifacts. Lyn also volunteered for the Santa Cruz County Sheriff's Office and helped with the Valley Churches United effort following the San Lorenzo River flooding crisis in 1982.

She knows the devastating impact of vision disease, as her grandmother suffered from both glaucoma and macular degeneration. In honor of her grandmother, Lyn has supported National Glaucoma Research (NGR), a BrightFocus program, since 1997.

"I have learned so much about vision research from BrightFocus and realize that they are getting closer and closer to figuring out what to do at the beginning of the disease to fix it."

Lyn was diagnosed with pre-glaucoma decades ago, has had surgery for a detached retina and is currently undergoing treatment. "To lose your eyesight is a terrible thing. It is just debilitating—there are too many beautiful things that you will never get to see if you don't take care of your eyes," she continued. "Don't ever give up. You will get through it and people are working to change the way the disease progresses."

Thanks to donors like Lyn, NGR continues to advance groundbreaking research to diagnose and treat glaucoma.



Donor Spotlight

Committed to a Cure for Macular Degeneration

Betty Van Norman of New Orleans, Louisiana, met her late husband Gene when they worked together at Chevron. Gene, a petroleum engineer and Betty, an independent consulting geologist, traveled the world together after retirement, experiencing new places and enjoying art.

Age-related macular degeneration (AMD) runs on both sides of Betty's family. Both her parents had AMD, and all her siblings have been diagnosed with it.

Betty was first diagnosed with AMD in her 30s, but it wasn't until five years ago that the disease began to progress much more quickly, impacting her ability to read. She has since moved into a retirement community where she has started an AMD support group that meets monthly.

Betty also enjoys listening to advice and updates on the monthly BrightFocus Macular Degeneration Chats.

At 93, Betty feels that it is very important to support AMD research, especially for dry AMD, the form of the disease she has.

"When my vision started getting progressively worse, I wanted to find an organization that was funding research and trying to find a cure for this devastating disease."

"I hope my estate gift to Macular Degeneration Research will be able to help the next generation. Supporting research is so important. This disease has been so devastating and sad."



Betty and her twin brother.

Donor Spotlight

A Decade of Supporting ADR Research

High school sweethearts Janet and Phil Spanninger of Akron, Ohio, have been married for 59 years. They raised three children and have four grandchildren. Phil's career as a chemist for Goodyear and later working in international business afforded them the opportunity to live around the world, including Germany, Hong Kong, and the United Kingdom. They loved participating in sports, with skiing among their favorites.

After Janet's Alzheimer's diagnosis in 2012, they moved to Montana, where they continued to enjoy an active lifestyle of skiing and hiking with a dedicated group of supportive friends for several years. After Janet's condition progressed, they moved back to Ohio where she is now living in a retirement community.

The Spanningers' commitment to supporting Alzheimer's Disease Research (ADR), a program of BrightFocus Foundation, goes back a decade. Phil had explored different options to help support Alzheimer's research before selecting ADR. He appreciates the scientific updates and news on the latest research in the field.

"Research is very, very important," said Phil.

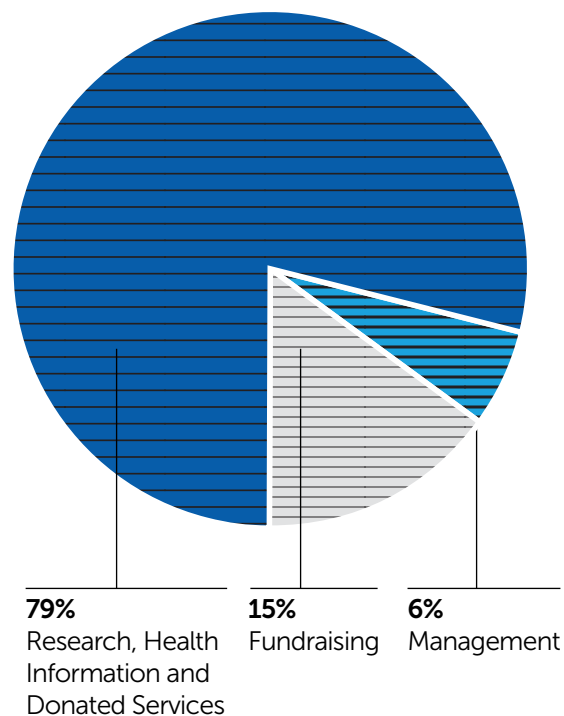
"Without research, we will never find the cure. Whatever anyone can give to support research, I would highly recommend they do it."



Financial Highlights

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 BrightFocus Foundation, 22512 Gateway Center Drive, Clarksburg, MD 20871 or on our website at brightfocus.org.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION	
As of March 31, 2022 (in thousands of dollars)	
ASSETS	
Cash and Investments	\$50,283
Charitable Trusts and Bequests Receivable	6,244
Rental Property	3,677
Fixed Assets, Net	4,484
Other Assets	853
TOTAL ASSETS	\$65,541
LIABILITIES	
Accounts Payable and Other Liabilities	\$899
Grants Payable	34,866
Charitable Gift Annuities	756
TOTAL LIABILITIES	36,521
NET ASSETS	
Without Donor Restriction	13,864
With Donor Restriction	15,156
TOTAL NET ASSETS	29,020
TOTAL LIABILITIES AND NET ASSETS	\$65,541

CONSOLIDATED STATEMENT OF ACTIVITIES	
For the Fiscal Year Ended March 31, 2022 (in thousands of dollars)	
SUPPORT AND REVENUE	
Contributions and Grants	\$36,803
Bequests	9,720
Donated Services	12,440
Investment Income	1,287
Rental & Other Income	1,561
TOTAL SUPPORT AND REVENUE	61,811
EXPENSES	
Program Services	
Research	28,633
Health Information Services	23,620
Total Program Services	52,253
Supporting Services	
Fundraising	9,847
Management and General	3,726
Total Supporting Services	13,573
TOTAL EXPENSES	65,826
CHANGE IN NET ASSETS	\$(4,015)

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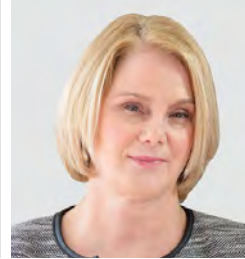
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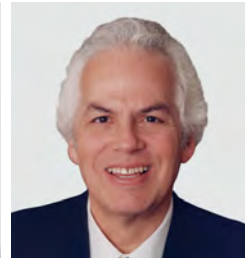
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mind and sight.

Please join us.

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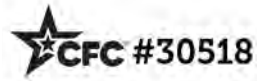
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