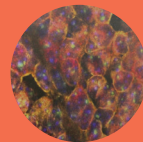


# ANNUAL REPORT 2017



# SHOOTING FOR THE MOON, TOGETHER

## Dear Friends of Research to Prevent Blindness,

Take a moment to think about how so-called “moonshot” goals (the kind as complex and seemingly implausible as putting a man on the moon) get accomplished. It’s almost always by teamwork, by talented and committed people coming together and each contributing a small but critical piece to the mission. At RPB our mission is a large one (moon-like even): to “preserve and restore vision,” which we work single-mindedly towards by supporting research to develop treatments, preventives and cures for all diseases that damage and destroy sight.

We feel so fortunate that we are not on this quest alone.

There is teamwork and collaboration built into every activity we touch. The research that we fund—whether through unrestricted funding to departments of ophthalmology or “individual” awards to vision researchers—is not a solitary endeavor. Many people play a role in executing excellent science.

Researchers (such as the ones seen on our cover) know all too well the importance of teamwork. They collaborate with peers both near and far, rely on the knowledge and guidance of scientific mentors and look to funders like us for support.

The value of collaboration is also why we host an annual meeting of 30+ vision research funding organizations (see page 9). We bring organizations together to determine how we can work together to get closer to our moonshot.

We’ve been fortunate to have the partnership of many respected organizations, which you’ll see named in our Grants section (starting on page 10), over the past year. We’re thankful that they see our value as a national non-profit known for identifying the most rigorous, game-changing science across all sight-threatening diseases, and seek out opportunities to work together in service of a shared goal.

Last, but certainly not least, we want to acknowledge another critical player in this mission: you. Your support and your generosity make the work that we do possible. It’s why every dollar you give goes directly to research (and is matched, up to \$1 million a year in total by RPB)—because we know you care deeply about the end-goal. The good news: we’re making great progress! Take a look at some of the discoveries made in just the past year on page 6.

We thank you for being part of our team.  
The mission continues...



Diane S. Swift,  
Chairman



Brian F. Hofland, PhD,  
President

## Research to Prevent Blindness

360 Lexington Avenue, New York, NY 10017  
212-752-4333 or 1-800-621-0026

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JULES STEIN, MD  
(1896-1981)  
Founder

DAVID F. WEEKS  
RPB Chairman Emeritus

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CONDON O’MEARA MCGINTY  
& DONNELLY LLP

**Financial information  
available at [www.rpbusa.org](http://www.rpbusa.org)**

### RPB Grantees at Work (clockwise from top right)

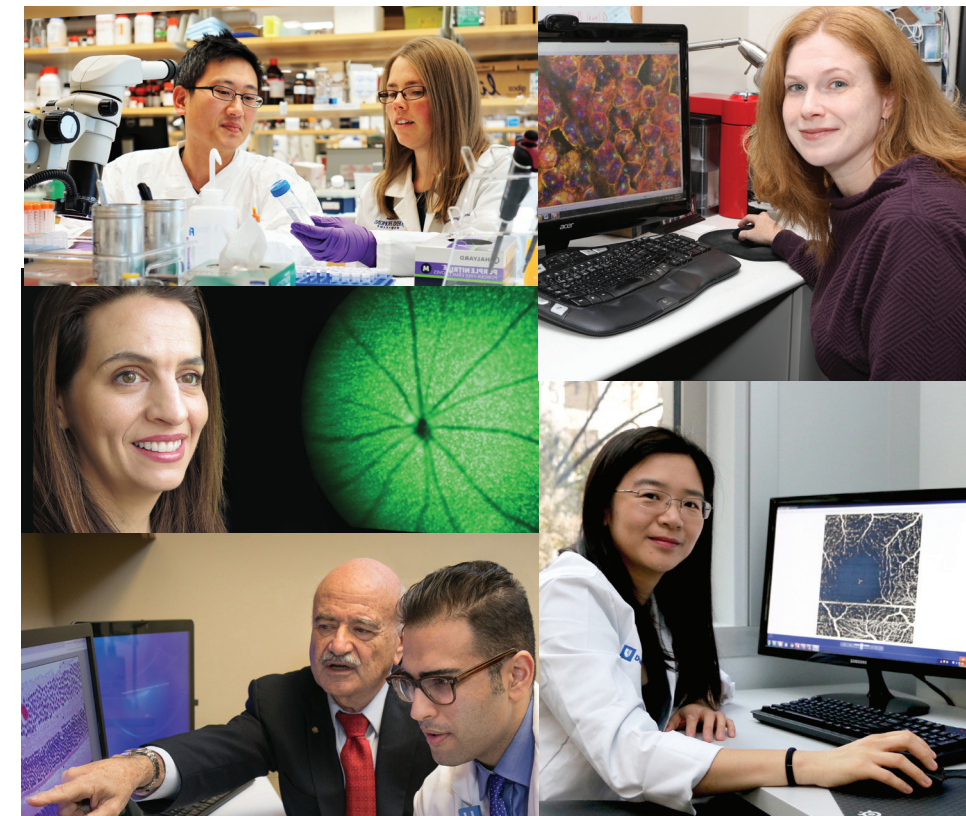
RPB Walt & Lilly Disney Award  
for Amblyopia Research recipient  
**Sara Aton, PhD**, The Regents  
of the University of Michigan  
School of Medicine

RPB Career Development Award  
recipient **Xi Chen, MD, PhD**,  
Duke University School of Medicine

RPB Medical Student Eye Research  
Fellowship recipient **Samuel  
Asanad, BS** (right), David Geffen  
School of Medicine at University  
of California, Los Angeles, with  
mentor Alfredo A. Sadun, MD, PhD

RPB Career Development  
Award recipient **Anna-Maria  
Demetriades, MD, PhD**,  
Weill Cornell Medical College

RPB Special Scholar Award  
recipient **Laura Ensign, PhD**  
(right), Johns Hopkins University  
School of Medicine, with colleague  
Yoo Chun Kim, PhD



# CURRENT GRANTS

We know that a discovery made in one area of vision research can easily inform and impact other areas—we can’t always predict where research will lead us! However, we can seed our research pipeline with the best and brightest researchers doing the most important work across all areas of vision research. For this reason, we fund excellent research that spans all sight-threatening conditions.

In order to make the biggest impact, we fund both institutions and individuals through our highly competitive grants program known for its scientific rigor. See page 18 for a full list of academic medical schools that received institutional or individual researcher support from RPB in 2017.



Our institutional grants provide critical unrestricted funds to high-performing departments of ophthalmology around the country so that department chairs can support the research that they identify as most in need of funding at any given time.



Our individual grants provide restricted funds to researchers to enable them to undertake specific research projects, which the esteemed RPB Scientific Advisory Panel and Ad Hoc Committees (see page 19 for a list of these experts) have deemed to be the most scientifically promising after thorough, high-level reviews.

In 2017, RPB grants were applied across the entire spectrum of research. Our grantees report that their work falls in the following categories\*:

**131**  
BASIC

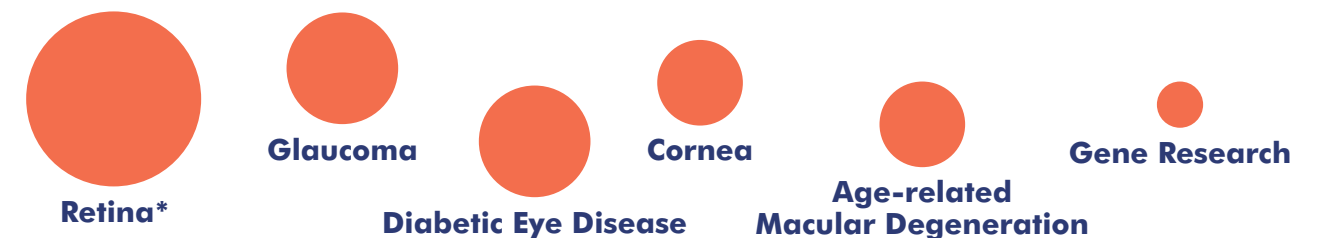
**122**  
TRANSLATIONAL

**38**  
CLINICAL

\*Denotes number of active research projects in each category. Researchers could choose more than one category if appropriate.

## In 2017, RPB provided \$4.5 million in unrestricted support to high-performing departments of ophthalmology.

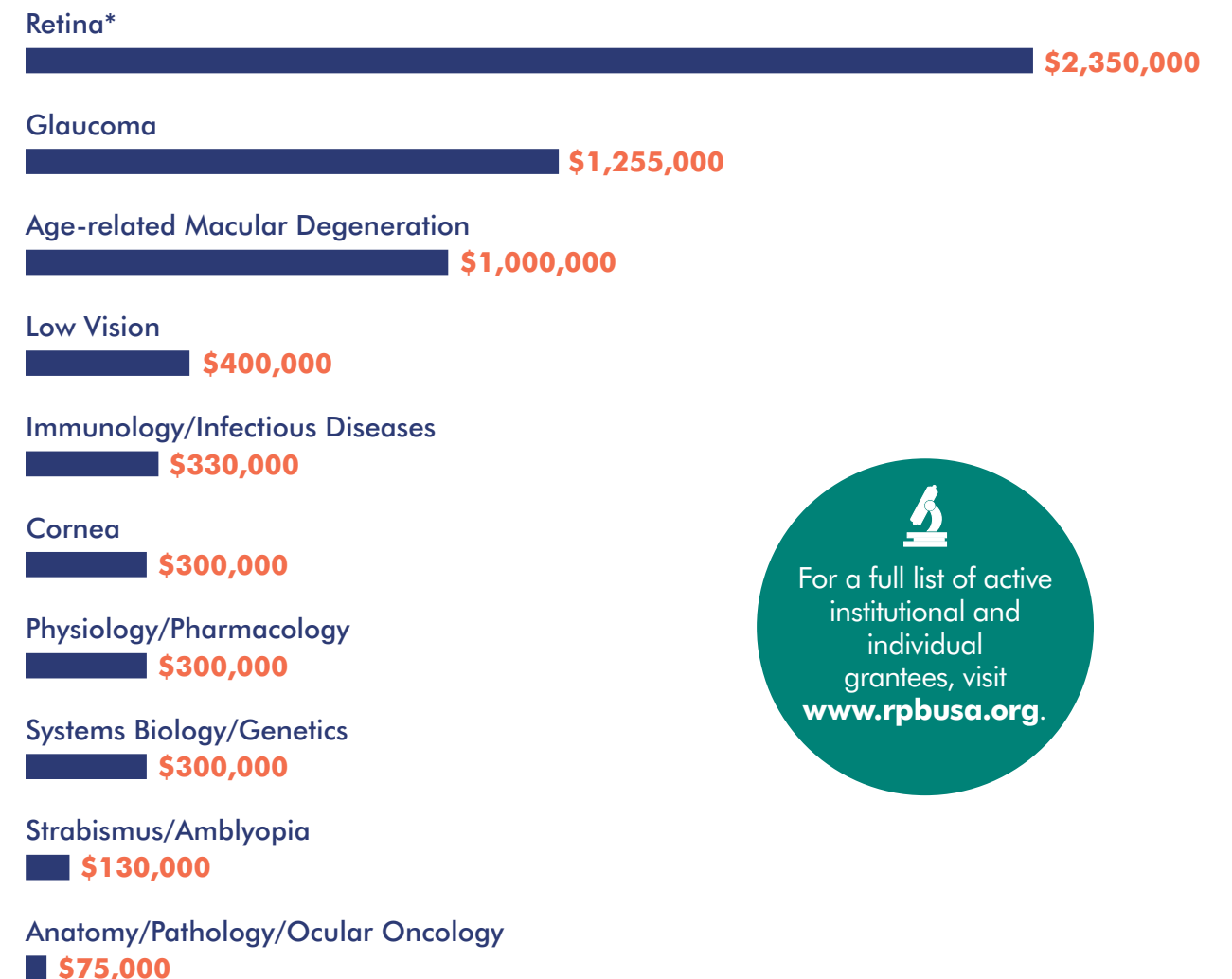
The top research areas in which RPB-funded departments applied their unrestricted funds are:



Other common areas of research where RPB funds were deployed include: pediatric eye disease, neuro-ophthalmology, stem cell, infectious eye disease, ocular oncology and strabismus/amblyopia.

## In 2017, RPB provided \$6.3 million in grants to individual researchers.

The areas of research (and corresponding dollar amounts) in which RPB allocated grants to individuals in 2017 are:



\*Retinal research that is not focused specifically on age-related macular degeneration.





## DISCOVERIES

Did you know that throughout its history, RPB funding has been tied to nearly every major vision research breakthrough? This is because of RPB's unyielding commitment to fund excellent science. The results speak for themselves.

IN 2017:

143

ACTIVE GRANTS



1,588

NEW SCIENTIFIC STUDIES  
CITING RPB SUPPORT



1

STEP CLOSER TO FULFILLING  
OUR MISSION OF PRESERVING  
AND RESTORING VISION FOR ALL

Researchers from Columbia University College of Physicians and Surgeons and the University of Rochester School of Medicine & Dentistry showed that retinal pigment epithelium (RPE) cells (the cells that are damaged in degenerative diseases like age-related macular degeneration) can carry a specific gene mutation. These mutated genes can have their damage reversed when RPE cells receive healthy copies of the gene, which can be delivered through a specially selected virus into the cells.



Stephen H. Tsang, MD, PhD, of  
Columbia University College of  
Physicians and Surgeons



Photo credit: Carla J. Siegfried/Washington University School of Medicine in St. Louis.

Researchers at Washington University School of Medicine in St. Louis identified a biomarker that could help to predict glaucoma damage before vision loss. The new test measures cell stress, rather than cell death, meaning clinicians can predict which glaucoma patients are at elevated risk for rapid vision loss while interventions are still possible.

Researchers at Columbia University College of Physicians and Surgeons characterized the genetic and physiologic characteristics of Usher syndrome—the most common cause of deaf-blindness. They identified a pattern between certain types of genetic mutations and the amount of residual cone photoreceptor function. They also discovered that there may be a threshold for the severity of genetic mutations that, if exceeded, explains the presence of hearing loss.

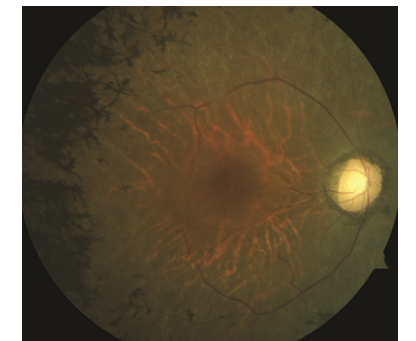


Photo credit: Jesse D. Sengillo/  
Columbia University College of  
Physicians and Surgeons

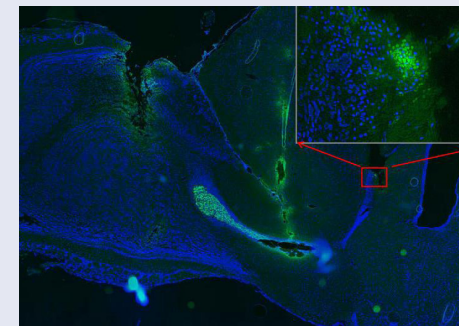


Photo credit: Junfeng Feng/University of California Davis School of Medicine

Researchers at the University of California Davis School of Medicine, along with colleagues at Shanghai Jiao Tong University in China, showed that electric fields can be used to guide neural stem cells transplanted into the brain toward a specific location. The research opens possibilities for effectively guiding stem cells to repair brain damage.

Researchers at Massachusetts Eye and Ear/Harvard Medical School identified key compounds related to blood vessel growth in wet age-related macular degeneration (AMD). The results suggest that it may be possible to prevent the vision loss observed in wet AMD by increasing the expression of specific bioactive lipid metabolites in the retina.

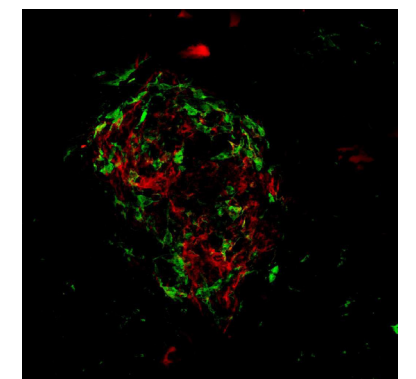


Photo credit: Kip Connor/  
Harvard Medical School



# SUPPORTING RESEARCH

RPB not only supports research within our own grants program; it also supports a healthy and robust vision research community. It's clear: more support for the field of vision research leads to more and better research!

In 2017, RPB was proud to support a range of activities that will push the vision research field forward:



EARLY-CAREER SUPPORT



NEW AWARDS



VISION RESEARCH ADVOCACY



HIGH-LEVEL CONVENINGS

## Helping Ophthalmology Residents Grow

RPB was pleased to provide support for The Heed Ophthalmic Foundation's 12th annual Heed Foundation's Residents Retreat, at which academic ophthalmologists mentored ophthalmology residents (nominated by their department chairs and residence program directors) regarding how young faculty members achieved success. This multi-day event covered a wide range of topics that are important to ophthalmology residents looking to develop their careers as both researchers and clinicians.



RPB President Brian F. Hofland, PhD, at the IRIS Award press conference.

## Launching A New Big-Data Award

At the American Academy of Ophthalmology (AAO) Annual Meeting in November 2017, AAO and RPB held a press conference to announce a new grant to support researchers who want to use the Academy's IRIS® Registry database to conduct population-based studies in ophthalmology and blindness prevention. The grants—the RPB/AAO Awards for IRIS Registry Research—will help clinical researchers leverage what is now the world's largest specialty clinical database for the advancement of patient care.

Each grant of \$35,000 will allow award recipients to learn how to use the IRIS Registry's analytic capabilities. AAO will provide awardees with hands-on training and access to subsets of relevant data from the IRIS Registry.

## Convening Leaders in Vision Research Funding

RPB hosted the "Vision Research Funding Partnership IV: Shaping Eye Health in America" event in Washington DC in April 2017. Leaders from more than 30 vision research funding organizations came together to think collectively about how to best support scientific research related to eye health and maximize the impact of private funding in this area. The event was co-sponsored by the Glaucoma Research Foundation, E. Matilda Ziegler Foundation, Eyesight Foundation of Alabama, International Retinal Research Foundation, Macula Vision Research Foundation and Prevent Blindness.



Leaders of more than 30 organizations that fund vision research at the event.



Senator Rand Paul (second from left), an ophthalmologist, with EVS Day participants from the state of Kentucky.

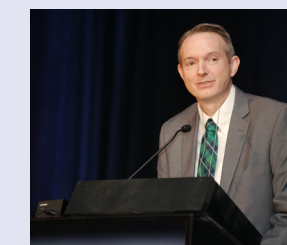
## Supporting Emerging Vision Scientists

In September 2017, RPB supported the Alliance for Eye and Vision Research's (AEVR's) Third Annual Emerging Vision Scientists (EVS) Day on Capitol Hill. The event brought together 18 specially selected early-career investigators who reflected the breadth of basic and clinical vision research. The EVS participants attended a Congressional Briefing on age-related macular degeneration and displayed posters of their research in an evening Congressional Reception. The next day, under the auspices of the National Alliance for Eye and Vision Research, EVS participants visited their Congressional delegation offices to advocate for increased federal support of vision research through the National Institutes of Health/National Eye Institute. RPB staff accompanied several of the EVS participants on their visits.

## Celebrating Innovative AMD Research

In partnership with the Association of University Professors of Ophthalmology (AUPO) and an anonymous donor, RPB supported the creation of the RPB David F. Weeks Award for Outstanding AMD Research, which is administered by AUPO. The award, which honors David F. Weeks, former President and Chairman of RPB, is designed to recognize and celebrate an excellent researcher focused on age-related macular degeneration by providing \$40,000 in unrestricted funds to the recipient.

In summer 2017, AUPO's review committee unanimously selected Robert F. Mullins, PhD, the Martin and Ruth Carver Chair of Ocular Cell Biology at the University of Iowa, as the inaugural award recipient. As a major factor in their selection, the committee cited Dr. Mullins' sustained and continued research into the role of complement factors in the pathogenesis of macular degeneration.



RPB David F. Weeks Award for Outstanding AMD Research recipient Robert F. Mullins, PhD, gives a talk.





## NEW GRANTS

OPTIC NERVE  
REGENERATION

CORNEAL  
SCARRING

UVEITIS

LOW  
VISION

OCULAR  
CANCER

RPB is pleased to present its 2017 individual award recipients. These 32 scientists are conducting research that spans the field of vision research and will lead to the sight-saving discoveries of tomorrow.

GENE  
THERAPY

GLAUCOMA

AMBLYOPIA

RETINOPATHY  
OF PREMATURITY

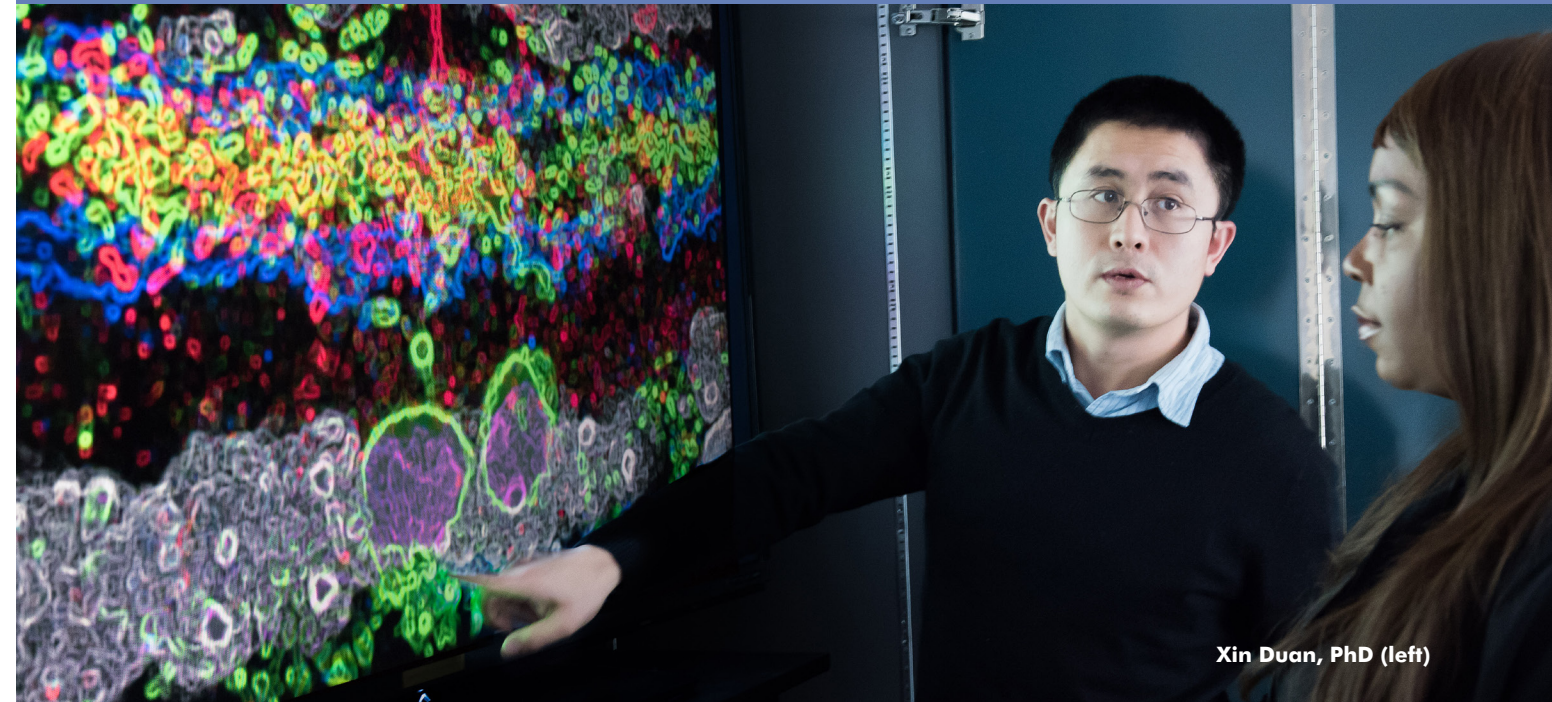
RETINITIS  
PIGMENTOSA

AGE-RELATED  
MACULAR  
DEGENERATION

RETINAL  
DEGENERATION

### RPB Career Development Awards

This award provides \$300,000 over 4 years to attract promising young MDs, PhDs and MD/PhDs to eye research and to support their early investigations, which helps qualify them for larger federal grants. Their primary appointments must be in ophthalmology and they must show potential for independent research.



Xin Duan, PhD (left)

#### Armin Afshar, MD, MBA

*University of California, San Francisco, School of Medicine*  
Undertaking research to improve understanding of the patient prognosis of uveal melanoma, a devastating ocular cancer, including outcomes related to the eye, quality of life and survival after radiotherapy.

#### Leah Byrne, PhD

*University of Pittsburgh School of Medicine*  
Creating a flexible method of gene and protein delivery in the retina, where gene therapy represents a highly promising approach to treating retinal diseases, through a modular system of small viruses.

#### Xi Chen, MD, PhD

*Duke University School of Medicine*  
Utilizing a noninvasive advanced imaging technique to visualize, in real-time, the development of blood vessels in the retina in human infants.

#### Xin Duan, PhD

*University of California, San Francisco, School of Medicine*  
Gaining a deep understanding of optic nerve regeneration via synapse formation and neural circuit mapping, particularly in chronic eye-disease models such as glaucoma.

#### Ian Pitha, MD, PhD

*The Johns Hopkins University School of Medicine*  
Investigating a cellular process that could lead to a new therapeutic target for neuroprotection from glaucoma-related retinal ganglion cell death and vision loss.

#### Kathryn L. Pepple, MD, PhD

*University of Washington School of Medicine*  
Using bioluminescence to create a non-invasive assay for uveitis, a group of inflammatory diseases that produce swelling and destroy eye tissue.





Maiken Nedergaard, MD, DMSc (left)

## RPB Stein Innovation Awards

This award was developed to uncover and encourage high-risk/high-gain vision science research that is innovative and cutting-edge. It provides \$300,000 over 3 years to researchers whose goal is understanding the visual system and the diseases that compromise its function. The proposed research cannot be funded—previously or currently—by others.

### James L. Funderburgh, PhD

*University of Pittsburgh School of Medicine*

Exploring new treatments for corneal scarring by defining roles for stem cell-derived extracellular vesicles and the mechanism by which they induce corneal regeneration.

### Nicholas Katsanis, PhD

*Duke University School of Medicine*

Testing a new therapeutic target for retinal degenerative diseases, such as retinitis pigmentosa, using cell-based screens in zebrafish.

### Maiken Nedergaard, MD, DMSc

*University of Rochester School of Medicine & Dentistry*

Characterizing the biology and ocular physiology of the glymphatic system, a recently discovered macroscopic waste clearance system for the central nervous system that is required for normal brain function, but also has a critical role in neurodegenerative disease.

### Martha Neuringer, PhD

*Oregon Health & Science University School of Medicine*

Utilizing new genetic technology to create models of human-like retinal degenerative diseases, such as achromatopsia, a disabling disease affecting daylight vision, visual acuity and color vision.

### Gregg L. Semenza, MD, PhD

*The Johns Hopkins University School of Medicine*

Treating excessive blood vessel growth (as seen in age-related macular degeneration and diabetic macular edema) by developing more potent and specific small molecule hypoxia-inducible factor inhibitors in long-lasting formulations.

### Nader Sheibani, PhD, MS

*University of Wisconsin-Madison School of Medicine & Public Health*

Investigating the role of mitochondrial carbonic anhydrase and its inhibition on pericytes loss.

## RPB Physician-Scientist Awards

This three-year, \$300,000 award strengthens and promotes clinical and/or basic research conducted by MDs or MD/PhDs who are actively engaged in clinical research.

### Brian Samuels, MD, PhD

*University of Alabama at Birmingham School of Medicine*

Investigating optic nerve biomechanics in a potential new, economical model for glaucoma, which overcomes many of the biological barriers found in current models.

### Jonathan Eliot Sears, MD

*Cleveland Clinic Lerner College of Medicine*

Exploring the ability of liver stimulation (via hypoxia-inducible factor stabilization) to protect blood vessels in the eye for infants with retinopathy of prematurity, a major cause of childhood blindness.



Jonathan Eliot Sears, MD (left)

## RPB Walt & Lilly Disney Awards for Amblyopia Research

This \$100,000 award is available to MDs, PhDs or MD/PhDs conducting research of unusual significance into the diagnosis and treatment of amblyopia (commonly referred to as lazy eye), which develops in up to 4% of children, causing decreased vision without detectable anatomic damage.

### Sara Aton, PhD

*The Regents of the University of Michigan School of Medicine*

Investigating the role of sleep in modifying plasticity of the visual system, based on results of previous research.

## Jules and Doris Stein RPB Professorship Extension

The Professorship is named after RPB's founder, Dr. Jules Stein, and his wife, Doris Stein, in support of an outstanding investigator that is making seminal contributions to the field of vision research. The extension provides \$250,000 to continue an important line of research.

### Brian Perkins, PhD

*Cleveland Clinic Lerner College of Medicine*

Identifying the contribution of specific micro-ribonucleic acids (mi-RNAs)—building blocks of life that help to code, regulate and express genes—to photoreceptor survival, as well as determining the role of each mi-RNA in regulating cellular pathways.





Justin Gardner, PhD

## Low Vision Research Awards

Low vision refers to chronic impairment that is not correctable by eyeglasses, medicines or surgery. It can significantly and negatively impact a person's visual activities of daily living and quality of life. In 2010, the National Eye Institute estimated that 3 million people in the U.S. suffered from low vision, with projections that this number would increase to nearly 5 million in 2030 and 9 million in 2050. Low vision is a woefully under-researched topic and RPB's funding partnerships with three other foundations are designed to shine a spotlight on the topic and launch useful research.

### **RPB/Lions Clubs International Foundation Low Vision Research Award**

This award focuses on the visual system that is damaged and seeks to answer such questions as: What happens with degraded visual input and how is it processed? What are the adaptive strategies in the visual pathway in response to visual impairment? How does the brain re-organize itself with visual damage? One grant of \$300,000 over 3 years was awarded in 2017.

#### **Justin Gardner, PhD**

*Stanford University School of Medicine*

Measuring and tracking visual and auditory sensory performance following sight-restoring surgery, such as cataract removal or corneal replacement, for adult humans.

### **RPB/Reader's Digest Partners for Sight Foundation/Consumer Technology Association Foundation Innovations in Technology Low Vision Research Award**

This award promotes the development of assistive devices for persons with low vision, with a focus on mobile and/or device innovations that can be implemented on multiple platforms, such as electronic tablets or mobile phones. One grant of \$100,000 was awarded in 2017.

#### **Gang Luo, PhD**

*Harvard Medical School/SERI*

Designing a mobile application to perform keyword searches in real-world environments to enhance the visual search capabilities of persons with low vision.

## **RPB/International Retinal Research Foundation and RPB/Dr. H. James & Carole Free Catalyst Awards for Innovative Research Approaches for AMD**

This \$300,000 award, granted over 3 years, is designed to support novel, ground-breaking research into age-related macular degeneration (AMD), with the ultimate goal of creating effective treatments for this increasingly common and debilitating condition. In 2017, RPB had two funding partners: the International Retinal Research Foundation (IRRF), which co-funded two awards, and Dr. H. James & Carole Free (Free Family), which funded one award.

#### **RPB/IRRF Catalyst Awardees:**

##### **Catherine Bowes Rickman, PhD**

*Duke University School of Medicine*

Using unique and relevant models of chronic, dry AMD to test three therapeutic approaches that will shape strategies for targeting the complement pathway versus targeting cholesterol versus a combined therapeutic approach targeting both pathways.

##### **Debasish Sinha, PhD**

*University of Pittsburgh School of Medicine*

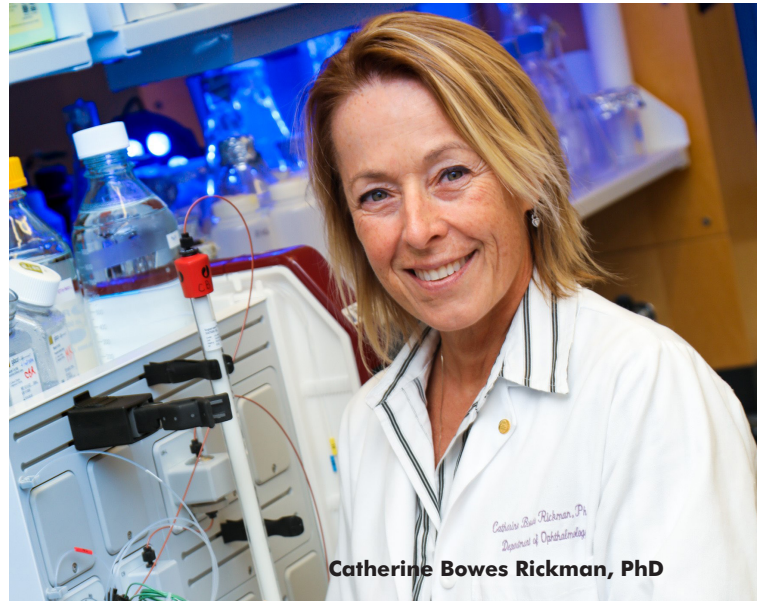
Developing a treatment for early, dry AMD that works by rejuvenating impaired lysosomal function.

#### **RPB/Free Family Catalyst Awardee:**

##### **Jordan Green, PhD**

*The Johns Hopkins University School of Medicine*

Developing a breakthrough translational therapy for neovascular (wet) AMD, as well as a biodegradable drug delivery system that would allow sustained, 6-month release.



Catherine Bowes Rickman, PhD

## **RPB/Stavros Niarchos Foundation International Research Collaborators Award**

This \$75,000 award promotes international collaborations through which researchers in the U.S. and outside the U.S. gain new knowledge and skills. Under a reciprocal arrangement, a U.S.-based researcher—MD, PhD or MD/PhD with a primary appointment in the department of ophthalmology or a relevant department at an RPB-supported institution—will be funded to go to an institution outside the U.S. to work with a collaborator. In turn, the institution outside the U.S. will send a researcher to the U.S. institution.

##### **David Cobrinik, MD, PhD**

*Keck School of Medicine of the University of Southern California*

**Collaborator: Thierry Leveillard, PhD, Pierre and Marie Curie University, France**

Determining how rod-derived cone viability factor (RdCVF) expression is regulated in developing cone photoreceptors, both to enable ways to suppress RdCVF in retinoblastoma, an ocular cancer most common in childhood, and to develop approaches to sustain RdCVF expression in patients with retinal degenerations.

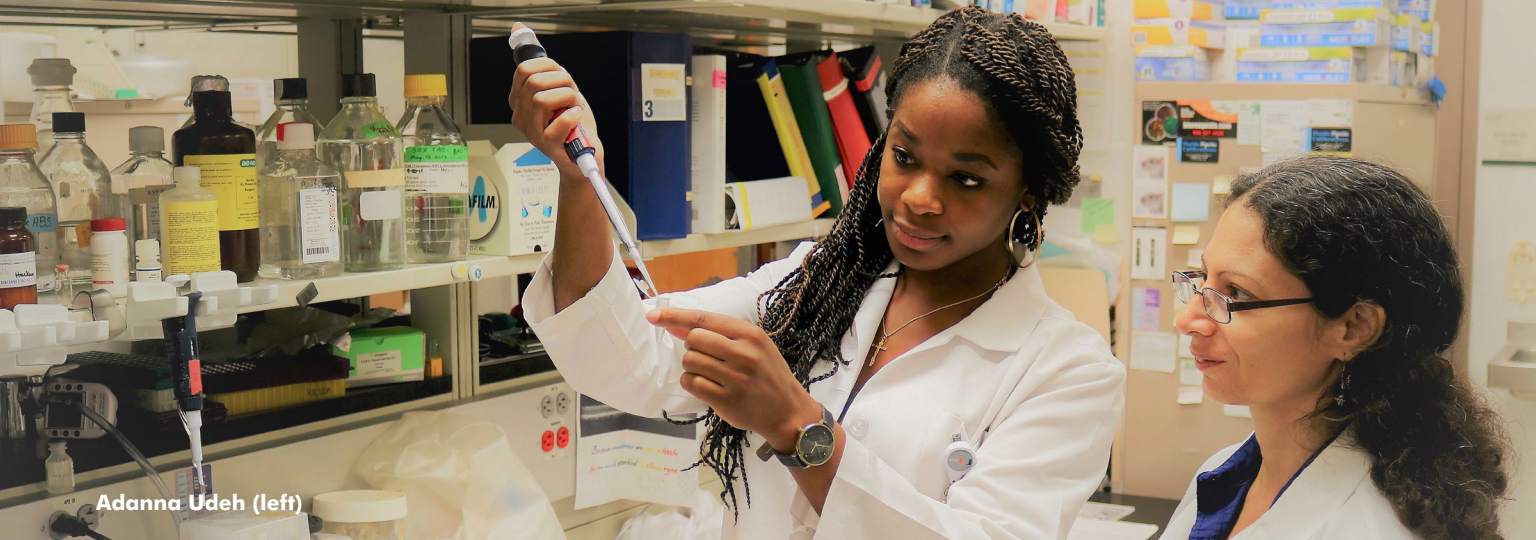
##### **Nawajes Mandal, PhD**

*University of Tennessee Health Science Center*

**Collaborator: Hiroshi Tomita, PhD, Iwate University, Japan**

Testing whether anti-ceramide gene therapy, delivered through a specific model, will be protective in four different models of retinal degeneration.





Adanna Udeh (left)

## RPB Special Scholar Awards

These \$25,000 to \$75,000 awards are named in tribute to individuals who established funds at RPB and are designed to support the research of promising early-career researchers who are assistant professors with primary appointments in ophthalmology.

**Dolly Green Scholar Award:**

**Jing Chen, PhD**

*Harvard Medical School / Boston Children's Hospital*

Investigating the role of a novel reduction/oxidation sensitive nuclear receptor in mediating oxidative stress-dependent retinal pigment epithelium and retinal dysfunction, which contributes to the pathogenesis of age-related macular degeneration.

**Sybil B. Harrington Scholar Award:**

**Laura Ensign, PhD**

*The Johns Hopkins University School of Medicine*

Investigating delivery of drug microcrystals to the suprachoroidal space, which would help to avoid the potential complications inherent in intravitreal injections.

**Ernest & Elizabeth Althouse Scholar Award:**

**Jennifer J. Hunter, PhD**

*University of Rochester School of Medicine & Dentistry*

Imaging the retina using an adaptive optics scanning light ophthalmoscope, to which she will add fluorescent lifetime imaging, thereby allowing measurement of lipofuscin composition in retinal pigment epithelial cells, which is relevant to age-related macular degeneration, Stargardt disease and other macular diseases.

**William & Mary Greve Scholar Award:**

**Yali Jia, PhD**

*Oregon Health & Science University School of Medicine*

Developing wide-field and projection-resolved optical coherence tomography angiography and applying them to the diagnosis and evaluation of inherited retinal diseases.

## RPB Medical Student Eye Research Fellowships

This \$30,000 grant allows outstanding medical students to take a year off from medical school and devote time to a research project in an RPB grantee department while working closely with a mentor. The fellowship is designed to stimulate students to consider careers in eye research.

**Samuel Asanad**, conducting research at the David Geffen School of Medicine, University of California, Los Angeles  
**Mentor:** Alfredo A. Sadun, MD, PhD

**Curtis Heisel**, conducting research at The Regents of the University of Michigan School of Medicine  
**Mentor:** Alon Kahana, MD, PhD

**Ruben Jauregui**, conducting research at Columbia University College of Physicians & Surgeons  
**Mentor:** Stephen Tsang, MD, PhD

**Tianyu Liu**, conducting research at the University of Pennsylvania School of Medicine  
**Mentor:** Graham E. Quinn, MD, MSCE

**Adanna Udeh**, conducting research at the University of Miami Miller School of Medicine  
**Mentor:** Abigail Hackam, PhD

## Special Grants for Partnerships and Collaboration

RPB supports strategic alliances through selected special grants to help advance the entire field of U.S. vision research.

**Alliance for Eye and Vision Research (AEVR): \$50,000**

To enhance AEVR's efforts to educate the public about the value of federally-funded vision research. In 2017, activities conducted under the auspices of AEVR's Decade of Vision 2010 – 2020 Initiative included hosting the third annual Emerging Vision Scientists Day on Capitol Hill, in which 18 early-career stage researchers were able to interact with Congressional leaders and staff, as well as the production and dissemination of an accompanying 10-minute documentary video. AEVR also hosted multiple Congressional Briefings for legislative staff that highlighted vision research funded by the National Eye Institute in areas such as glaucoma, age-related macular degeneration and defense-related vision research.

**American Academy of Ophthalmology (AAO): \$210,000**

To create a new award, the RPB/AAO Award for IRIS Registry Research, which will be funded over 2 years. The award is designed to enable researchers to use AAO's IRIS® Registry—the nation's first comprehensive eye disease clinical registry—to conduct population-based studies in ophthalmology and blindness prevention. AAO will provide access to the IRIS Registry and hands-on training for researchers, as well as direct research funding, to each of six researchers over two years.

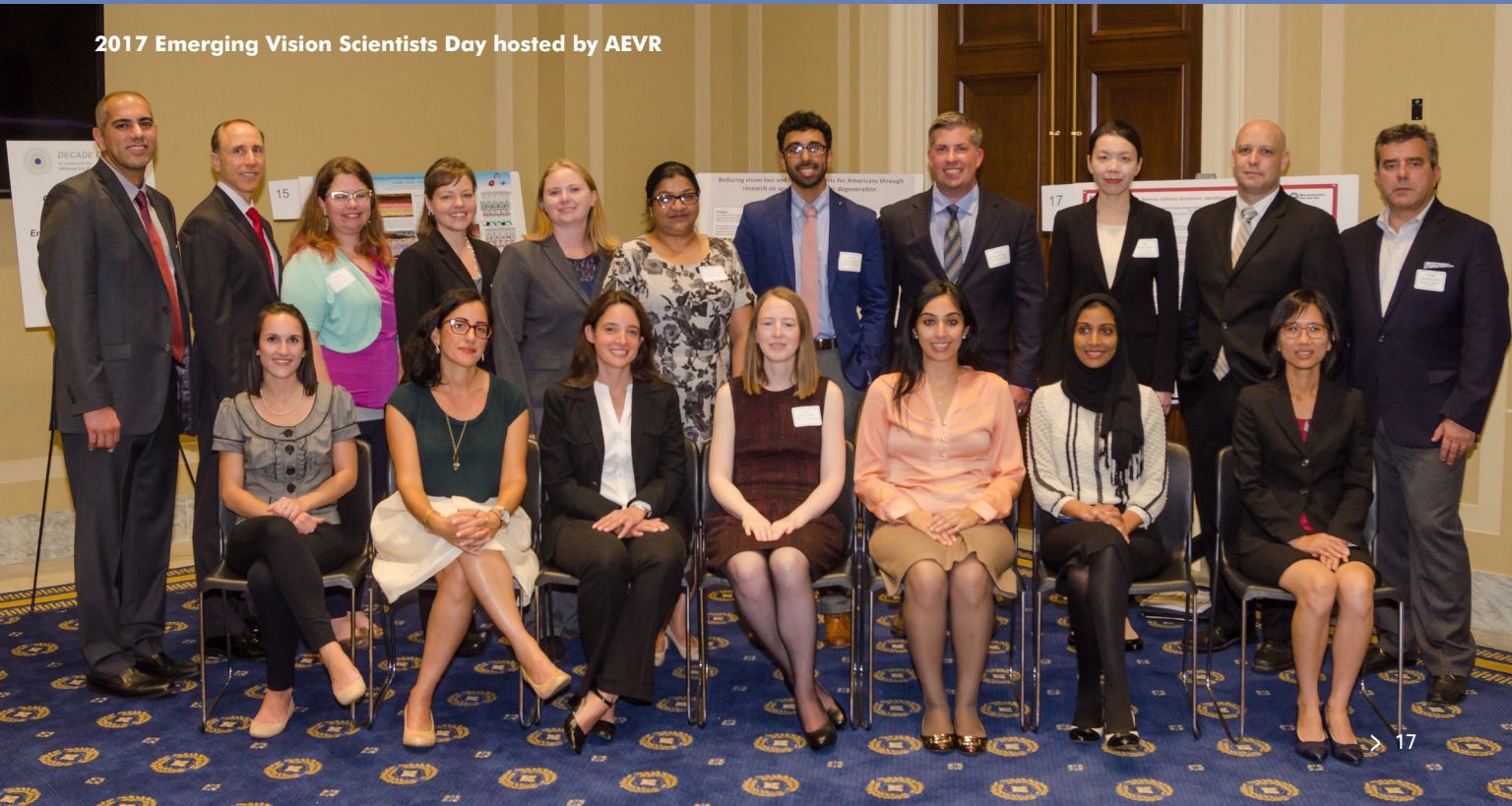
**Association of University Professors of Ophthalmology (AUPO): \$165,000**

To support AUPO's mission: to serve, strengthen and represent academic departments of ophthalmology; to provide support, information and leadership opportunities to departmental chairs, program directors and other faculty members; to promote excellence in ophthalmic education; to foster vision research; and to promote ethical practice and excellence in eye care in order to ensure the best possible vision for the public. The grant also includes \$40,000 to support the RPB David F. Weeks Award for Outstanding AMD Research.

**The Heed Ophthalmic Foundation (HOF): \$34,000**

To renew, for two years, RPB's support for HOF Resident Retreats, which provide professional development experiences to talented ophthalmology residents from across the country. The Retreats encourage residents to pursue academic careers.

2017 Emerging Vision Scientists Day hosted by AEVR





2017 RPB APPROVED GRANTS TOTAL: \$10,910,880\*
U.S. medical schools receiving new 2017 departmental and/or individual investigator awards

| STATE          | RPB GRANTEE INSTITUTIONS                                         | TOTAL GRANTS<br>2017 | TOTAL SUPPORT<br>INCLUDING 2017 |
|----------------|------------------------------------------------------------------|----------------------|---------------------------------|
| ALABAMA        | University of Alabama at Birmingham School of Medicine           | \$ 415,000           | \$ 4,715,000                    |
| CALIFORNIA     | David Geffen School of Medicine at UCLA                          | 145,000              | 9,580,750                       |
|                | University of California, Irvine, School of Medicine             | 115,000              | 940,000                         |
|                | University of California, San Diego, School of Medicine          | 115,000              | 3,745,000                       |
|                | University of California, San Francisco, School of Medicine      | 715,000**            | 10,789,256                      |
|                | Stanford University School of Medicine                           | 300,000              | 886,450                         |
|                | Keck School of Medicine of the University of Southern California | 190,000              | 5,694,795                       |
| FLORIDA        | University of Florida College of Medicine                        | 115,000              | 4,765,600                       |
|                | University of Miami Miller School of Medicine                    | 145,000              | 5,222,700                       |
| ILLINOIS       | University of Illinois at Chicago College of Medicine            | 115,000              | 4,966,712                       |
| INDIANA        | Indiana University School of Medicine                            | 115,000              | 2,999,000                       |
| IOWA           | University of Iowa Carver College of Medicine                    | 115,000              | 5,237,425                       |
| KENTUCKY       | University of Louisville School of Medicine                      | 115,000              | 4,704,800                       |
| MARYLAND       | The Johns Hopkins University School of Medicine                  | 1,070,000**#         | 10,775,140                      |
| MASSACHUSETTS  | Harvard Medical School                                           | 240,000              | 10,695,315                      |
| MICHIGAN       | The Regents of the University of Michigan School of Medicine     | 245,000              | 9,153,050                       |
|                | Wayne State University School of Medicine                        | 115,000              | 4,373,000                       |
| MINNESOTA      | Mayo Medical School                                              | 115,000              | 3,514,600                       |
| MISSOURI       | Washington University in Saint Louis School of Medicine          | 115,000              | 7,904,981                       |
| NEW YORK       | Columbia University College of Physicians & Surgeons             | 145,000              | 6,438,167                       |
|                | Weill Cornell Medical College                                    | 115,000              | 5,653,700                       |
|                | University of Rochester School of Medicine & Dentistry           | 490,000#             | 4,490,250                       |
|                | SUNY Upstate Medical University                                  | 115,000              | 2,745,000                       |
| NORTH CAROLINA | Duke University School of Medicine                               | 1,015,000**#         | 8,605,150                       |
| OHIO           | Case Western Reserve University School of Medicine               | 115,000              | 4,222,500                       |
|                | Cleveland Clinic Lerner College of Medicine                      | 665,000              | 4,045,000                       |
| OKLAHOMA       | University of Oklahoma Health Sciences Center                    | 115,000              | 5,471,600                       |
| OREGON         | Oregon Health & Science University School of Medicine            | 475,000#             | 6,072,150                       |
| PENNSYLVANIA   | University of Pennsylvania School of Medicine                    | 145,000              | 6,758,500                       |
|                | University of Pittsburgh School of Medicine                      | 1,015,000**#         | 5,788,372                       |
| TENNESSEE      | University of Tennessee Health Science Center                    | 75,000               | 3,260,000                       |
|                | Vanderbilt University School of Medicine                         | 115,000              | 3,505,500                       |
| TEXAS          | Baylor College of Medicine                                       | 115,000              | 5,114,060                       |
|                | University of Texas Southwestern Medical Center at Dallas        | 115,000              | 4,906,000                       |
| UTAH           | University of Utah Health Sciences Center                        | 115,000              | 5,895,300                       |
| WASHINGTON     | University of Washington School of Medicine                      | 415,000**            | 4,617,638                       |
| WISCONSIN      | University of Wisconsin-Madison School of Medicine               | 415,000#             | 6,338,750                       |

\*Includes commitments for special grants to the Alliance for Eye and Vision Research, the American Academy of Ophthalmology, the Association of University Professors of Ophthalmology and The Heed Ophthalmic Foundation.

\*\*Includes a four-year \$300,000 Research to Prevent Blindness Career Development Award, payable at the rate of \$75,000 per year.

#Includes a \$300,000 Research to Prevent Blindness Stein Innovation Award payable in two equal installments of \$150,000.

School that received RPB support but no new grant in 2017: University of Colorado School of Medicine.

The RPB grant approval process is highly competitive. A standing Scientific Advisory Panel (SAP) and rotating Ad Hoc Committees convene each spring and fall to review all grant applications. Ad Hoc Committees are comprised of selected ophthalmology department chairs and researchers whose recommendations are forwarded to the SAP for further evaluation. The SAP includes distinguished scientists representing a broad range of scientific disciplines and interests. Their recommendations are presented to the RPB Board of Trustees for final approval.

2017 RPB SCIENTIFIC ADVISORY PANEL

|                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Robin Ali, PhD, FMedSci</b><br><i>Professor Human Molecular Genetics<br/>Head of Department of Genetics<br/>Division of Molecular Therapy<br/>UCL Institute of Ophthalmology<br/>Visiting Professor<br/>Kellogg Eye Center,<br/>University of Michigan</i>                                                                                                              | <b>Krzysztof Palczewski, PhD</b><br><i>Professor &amp; Chair, Department of Pharmacology<br/>Case Western Reserve University</i>                                                                                                                                                                                                                                                          |
| <b>Anne L. Coleman, MD, PhD</b><br><i>The Fran and Ray Stark Foundation<br/>Professor of Ophthalmology<br/>Department of Ophthalmology<br/>David Geffen School of Medicine<br/>University of California at Los Angeles<br/>Professor in Department of Epidemiology<br/>Jonathan and Karin Fielding School of Public Health<br/>University of California at Los Angeles</i> | <b>John S. Penn, PhD</b><br><i>Phyllis G. and William B. Snyder Endowed Professor and Vice Chairman<br/>Department of Ophthalmology and Visual Sciences<br/>Associate Dean for Faculty Affairs<br/>Vanderbilt University School of Medicine</i>                                                                                                                                           |
| <b>David Huang, MD, PhD</b><br><i>Peterson Professor of Ophthalmology<br/>Professor of Biomedical Engineering<br/>Casey Eye Institute, Oregon Health &amp; Science University</i>                                                                                                                                                                                          | <b>Sheila West, PhD</b><br><i>El - Maghraby Professor<br/>Vice Chair for Research<br/>Wilmer Eye Institute<br/>The Johns Hopkins School of Medicine</i>                                                                                                                                                                                                                                   |
| <b>Roderick R. McInnes, CM, MD, PhD, FRSC*</b><br><i>Canada Research Chair in Neurogenetics<br/>Alva Chair in Human Genetics<br/>Professor of Human Genetics<br/>Professor of Biochemistry<br/>McGill University<br/>Acting President<br/>Canadian Institutes of Health</i>                                                                                                | <b>Janey L. Wiggs, MD, PhD</b><br><i>Paul Austin Chandler Professor, Department of Ophthalmology<br/>Vice Chair for Clinical Research, Ophthalmology<br/>Co-Director, Glaucoma Center of Excellence<br/>Associate Director, Ocular Genomics Institute<br/>Associate Director, Howe Laboratory, MEEI<br/>Harvard Medical School<br/>Associate Member, Broad Institute, Harvard and MIT</i> |
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| <b>Cynthia Owsley, PhD, MSPH</b><br><i>Nathan E. Miles Chair of Ophthalmology<br/>Professor and Director, Clinical Research Unit<br/>University of Alabama at Birmingham</i>                                                                                                                                                                                               | <b>John E. Dowling, PhD</b><br><i>Special Advisor to the RPB Staff<br/>Gordon and Llura Gund Research Professor of Neurosciences<br/>Department of Molecular and Cellular Biology<br/>Harvard University</i>                                                                                                                                                                              |

2017 RPB AD HOC COMMITTEES

|                                                                                                               |
|---------------------------------------------------------------------------------------------------------------|
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| <b>Jeffrey D. Henderer, MD</b><br><i>Temple University Lewis Katz School of Medicine</i>                      |
| <b>Jonathan M. Holmes, MD</b><br><i>Mayo Clinic/Mayo Medical School</i>                                       |
| <b>P. Michael Iuvone, PhD</b><br><i>Emory University School of Medicine</i>                                   |
| <b>Paul L. Kaufman, MD</b><br><i>University of Wisconsin-Madison School of Medicine &amp; Public Health</i>   |
| <b>Jonathan H. Lass, MD</b><br><i>Case Western Reserve University School of Medicine</i>                      |
| <b>Todd P. Margolis, MD, PhD</b><br><i>Washington University in Saint Louis School of Medicine</i>            |
| <b>James P. McCulley, MD</b><br><i>University of Texas Southwestern Medical Center</i>                        |
| <b>Stephen McLeod, MD</b><br><i>University of California, San Francisco, School of Medicine</i>               |
| <b>John C. Morrison, MD</b><br><i>Oregon Health &amp; Science University School of Medicine</i>               |
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| <b>Randall J. Olson, MD</b><br><i>University of Utah Health Sciences Center</i>                               |
| <b>Douglas J. Rhee, MD</b><br><i>Case Western Reserve University School of Medicine</i>                       |
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| <b>Gregory L. Skuta, MD</b><br><i>University of Oklahoma Health Sciences Center</i>                           |





## Research to Prevent Blindness

RPB's mission is to preserve and restore vision by supporting research to develop treatments, preventives and cures for all conditions that damage and destroy sight.

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