FIGHT FOR SIGHT

ANNUAL REPORT

2009
In 2011, Fight for Sight will celebrate its 65th anniversary. During the year we have planned a series of events to honor and recognize the contributions of our remarkable founder Mildred Weisenfeld, who started FFS in 1946 after losing her sight to retinitis pigmentosa. During the next decades, Mildred almost singlehandedly drove the campaign to create awareness of the need for more eye research funding.

"Fight for Sight has been in my heart since the mid-60s. Funding research is the foundation of our future and our health. It's at the core of what needs to be done, even though it will take some time."

~ John LaSpina, Long Island, NY

"Fight for Sight is unique, research is important, and you only get results by putting in time. The young ophthalmologists need our help."

~ Martin Schneider, Alpern Family Foundation
   New York, NY
Dear Friends, Supporters, Alumni and Mentors,

We are delighted to share with you Fight for Sight’s latest annual report.

This past year has been one of growth, expansion, collaboration and a return to our core mission. Despite a troubled economy and unsettling events throughout the world, FFS remains strong, vibrant and poised to enter the next decade of the 21st century. We are committed to identifying, supporting and nurturing the next generation of academic ophthalmologists and eye and vision researchers for many years to come. We thank you for your past support and look forward to your continued insight, counsel and assistance in the future.

One of the highlights of this past year has been the successful and continuing establishment of various partnerships and collaborative efforts between Fight for Sight and other foundations and professional organizations designed to maximize our joint resources and cooperatively strengthen both of our missions, including:

- A joint Summer Student Fellowship with Women’s Eye Health.org to provide funding to deserving students researching the reasons underlying well-established gender disparities in visual disability and blindness.
- A partnership with the North American Neuro-Ophthalmology Society funds research by an ophthalmology or neurology resident or fellow in that field.
- A Summer Student Fellowship in partnership with the Streilein Foundation for Ocular Immunology.
- FFS and the Jackson Laboratory, in Bar Harbor, ME, the nation’s premier institution for mammalian genetics, are exploring ways in which to jointly support our respective research and fundraising efforts.

Our mission to provide support and recognition for the next generation of academic ophthalmologists and vision researchers remains vital and strong.

As we approach our 65th anniversary in 2011, Fight for Sight is proud to have provided over $20 million in awards to more than 3,000 investigators, many of whom have gone on to distinguished careers as academic researchers, clinician scientists and industry leaders.

We hope you will join us in celebrating the achievements of our students and the foresight of the many current and former members of our Scientific Review Committee, who help identify talented individuals early in their careers. We are very grateful for their devoted efforts, essential to our grant review process, as well as the support of the many Chairpersons of Ophthalmology and Directors of Research who continue to provide valuable insights and guidance.

An exciting series of educational events, fundraisers and ways in which to honor our history and the memory of our founder Mildred Weisenfeld, are planned for the 65th Anniversary celebration. Please join us!

Norman J. Kleiman, PhD
President, Board of Directors

Michael Wilke,
Executive Director
Each year, the SRC meets in conjunction with the annual meeting of the Association for Research in Vision and Ophthalmology (ARVO) to review award applications in roundtable discussions among its members. The SRC is one of Fight for Sight’s greatest assets and we are extremely grateful for their assistance, dedication and hard work.
The Scientific Review Committee (SRC) is charged with reading and evaluating grant applications for our Summer Student Fellowships, Post-Doctoral awards and Grants-in-Aid. It is composed of prominent research scientists, academicians and clinical researchers representing many disciplines in ophthalmology, vision and eye research, many of whom were previous awardees and/or FFS mentors.

We strive to create a diverse group of reviewers, representing many of the best academic and clinical institutions across the country, to enable us to choose a broad spectrum of the best and the brightest young students and scientists. Our review system is modeled on the peer review methods utilized by the National Institutes of Health, which evaluate and rank each application on scientific merit, strength of institutional resources and clinical relevance.
"Your award will allow me to pursue important research that will help identify the genes and proteins involved in retinal detachment. At this stage of my career, recognition from Fight for Sight is truly prestigious, and I truly appreciate the support.”

~ Vinit B. Mahajan, MD, PhD, University of Iowa

Age-related Macular Degeneration is the leading cause of blindness in the U.S., affecting 1.7 million Americans over age 60.
Grants-in-Aid are intended to fund pilot projects and generate preliminary results for investigators who have limited or no other research funding. Grants-in-Aid are awarded to junior faculty members who are developing their independent scientific skills. A majority of Grants-in-Aid recipients go on to successfully compete for larger, multi-year awards from the NIH or other governmental and private sources utilizing data generated by FFS funded projects.

Heather A. Anderson, OD, PhD
Assistant Professor, Optometry
University of Houston
Limits of accommodation for compensation of hyperopia in children
LAZY EYE

Mihaela G. Gadjeva, PhD
Instructor, Channing Laboratory
Brigham and Women’s Hospital
Inhibition of MIF will prevent pseudomonas aeruginosa-induced keratitis
CORNEA

Kate E. Keller, PhD
Research Assistant Professor
Casey Eye Institute,
Oregon Health & Sciences University
The role of hyaluronan in the trabecular meshwork
GLAUCOMA

Eun-Jin Lee, PhD
Research Assistant Professor, Biomedical Engineering
University of Southern California
Remodeling of retinal cells during the development of myopia
MYOPIA

Vinit B. Mahajan, MD, PhD
Assistant Professor, Ophthalmology & Visual Sciences
University of Iowa
Molecular genetics of retinal detachment
RETINA

"As an assistant professor who is in the early stages of my career, your support is vital to the success of my research endeavors and I am grateful for the opportunity to pursue this work with your assistance."

~ Heather A. Anderson, OD, PhD
University of Houston

"With so many people affected by glaucoma, I am hopeful that the results gained from my experiments will lead to new treatments or a cure for this debilitating disease. This grant provides financial support in my effort to gain funding from the NIH at this important transition point in my career."

~ Kate E. Keller, PhD
Casey Eye Institute,
Oregon Health & Sciences University
"I believe that through my present post-doctoral project, I will make seminal discoveries about rhodopsin biology that will lay the basis for novel therapeutics and strategies to prevent retinal degeneration."

~ Wei-Chieh Chiang, PhD, University of California-San Diego

Cataract surgery accounts for 60% of Medicare visual care costs and 12% of all health care costs overall.
Post-Doctoral Awards support individuals with a doctorate (PhD, MD, DrPH, OD or DVM) who are interested in academic careers in basic or clinical research in ophthalmology, vision or related sciences. Awardees typically spend a year or more engaged in vision and eye research under the supervision of a senior scientist/clinician mentor.

Wei-Chieh Chiang, PhD
University of California-San Diego
Mentor: Jonathan H. Lin, MD, PhD
Unfolded protein response signaling in rhodopsin processing and stability
RETINITIS PIGMENTOSA

Gregory H. Grossman, PhD
Cleveland Clinic
Mentor: Stephanie A. Hagstrom, PhD
The role of Tulp1 in the photoreceptor synapse:
Defining pathways of action through protein binding analysis
RETINITIS PIGMENTOSA

Amy A. Kalia, PhD
Massachusetts Institute of Technology
Mentor: Pawan Sinha, PhD
Scene recognition by vision and touch
VISION PROCESSING

Angela V. Turalba, MD
Massachusetts Eye and Ear Infirmary
Mentor: Louis Pasquale, MD
Caffeine consumption: intraocular pressure and genetic predisposition to primary open angle glaucoma
GLAUCOMA

Fan Zhang, MD, PhD, BM
SUNY State College of Optometry
Mentor: Peter S. Reinach, PhD
Resolvin mediated control of corneal epithelial function
DRY EYE

"I am sure this award will help launch my career as an independent researcher."
~ Gregory H. Grossman, PhD
Cleveland Clinic
(Pictured with mentor Stephanie A. Hagstrom, PhD)
In memory of our long-time former Hollywood League President Ida Bockian, Fight for Sight is naming a Summer Student Fellowship for her decades of outstanding volunteer leadership. We are deeply thankful for her support.

"Thank you for granting me this mark of distinction in the field of Ophthalmology."

~ Maria Julieta Zutel, Case Western Reserve University-School of Medicine

Glaucoma affects over 3 million Americans and is a leading cause of blindness.
Summer Student Fellowships are awarded to undergraduates, graduate and medical students interested in pursuing eye-related clinical or basic research. For most students, this is their first exposure to eye or vision research and the experience has resulted in many students choosing academic ophthalmology or eye research as a full-time career.

Ilan Y. Benador  Ida Bockian Summer Student Fellowship  
Boston University  
Mentor: Anne B. Fulton, MD, Children’s Hospital Boston  
Oxidative stress in immature neural retina  
RETINA

Andrew S. Camp  
University of Miami Miller School of Medicine, Bascom Palmer  
Mentor: Richard K. Lee, MD, PhD, Univ. of Miami Miller School of Medicine, Bascom Palmer  
Identification of retinal ganglion cell sub-populations preferentially targeted to die secondary glaucoma  
GLAUCOMA

Victoria S. Chang  
University of Miami Miller School of Medicine, Bascom Palmer  
Mentor: Sonia H. Yoo, MD, University of Miami Miller School of Medicine, Bascom Palmer  
Effects of methylprednisolone and tacrolimus on fungal growth in vitro  
CORNEA

Ayan Chatterjee  
University of Pennsylvania School of Medicine  
Mentor: George L. Spaeth, MD, Wills Eye Institute & Jefferson Medical College  
Nuclear genetic and mitochondrial influences in primary open-angle glaucoma, primary angle-closure glaucoma, and pseudoexfoliation glaucoma  
GLAUCOMA

Thomas Doerdelmann  
University of Cincinnati  
Mentor: Mark Rance, PhD, University of Cincinnati  
Biophysical analysis of an Axenfeld-Reiger syndrome (v45L) pitx2 homeodomain mutant  
AXENFELD-REIGER SYNDROME

Kellen T. Galster  
Albany Medical Center  
Mentor: James T. Rosenbaum, MD, Oregon Health & Science University  
Investigation of the role of NOD2 expression and its subsequent regulation of ocular inflammation induced by TLRs  
UVEITIS

Yen Cheng Hsia  
Case Western Reserve University-School of Medicine  
Mentor: Eric Pearlman, PhD, Case Western Reserve University-School of Medicine  
Role of Dectin-1 in fungal keratitis  
CORNEA

David L. Jiang  
University of California-San Diego  
Mentor: Jonathan H. Lin, MD, PhD, University of California-San Diego  
Optokinetic response analysis in transgenic animal models of retinal degeneration  
RETINITIS PIGMENTOSA
Retinopathy of Prematurity (ROP) occurs in some babies born prematurely and leads to very poor vision because of retinal damage.

Hikaru Kinouchi
Washington and Lee University
Mentor: Dong Feng Chen, MD, PhD, Schepens Eye Research Institution, Harvard Medical School
A novel regulator of optic nerve regeneration
GLAUCOMA

Christina A. Mamalis
Occidental College
Mentor: Bala Ambati, MD, PhD, University of Utah, The John A. Moran Eye Center
Ocular bioimaging of a murine model of macular degeneration
MACULAR DEGENERATION

Rachel A. Martin
Medical College of Wisconsin
Mentor: Joseph Carroll, PhD, Medical College of Wisconsin
Evaluating the photoreceptor mosaic in congenital rod monochromacy; prospects for gene therapy
RETINA

Sarah M. Oros
University of Dayton
Mentor: Amit Singh, PhD, University of Dayton
Understanding the genetic basis of aniridia
ANIRIDIA

Anish V. Patel
University of Chicago
Mentor: Michael Grassi, MD, University of Chicago
Genomic studies of diabetic retinopathy
DIABETIC RETINOPATHY

Nimish B. Patel
University of Houston, College of Optometry
Mentor: Ronald S. Harwerth, OD, PhD, University of Houston, College of Optometry
Relationship of spectral domain optical coherence tomography (SD-OCT) to retinal histology in macaca mullata
RETINA

Tihomira D. Petkoca
University of Houston, College of Optometry
Mentor: Deborah C. Otteson, PhD, University of Houston, College of Optometry
Eph receptor expression and DNA methylation status in Muller glia derived retinal progenitor cells
GLAUCOMA

“Thank you for granting me the opportunity to investigate a potential therapy for retinopathy of prematurity (ROP), one of the leading causes of childhood blindness around the world.”
~ Ilan Y. Benador, Boston University
My time researching the unique immune functions of the eye have enhanced my desire to pursue a career as an ophthalmologist. I felt very fortunate to work in a cutting edge laboratory, shedding light on the enigmatic world of innate immunology.

Kellen T. Galster
Albany Medical Center

I will utilize all of the funds to help advance our understanding of blindness through research so that someday, hopefully in the near future, we may stumble upon a cure or treatment for blindness.

David L. Jiang
University of California-San Diego

Regulated expression of IL-13 receptor by T-cell cytokines modulates conjunctival goblet cell density

Jagdeep K. Raince
Baylor College of Medicine
Mentor: Stephen Pflugfelder, MD, Baylor College of Medicine

Regulated expression of IL-13 receptor by T-cell cytokines modulates conjunctival goblet cell density

Sjogren's Syndrome, Stevens-Johnson Syndrome

Jaime K. Stull
University of Delaware
Mentor: Melinda Duncan, PhD, University of Delaware

Role of UPR in cataract development of connexin50 mutants

Cataract

Kyle M. Trudeau
Boston University
Mentor: Sayon Roy, PhD, Boston University

Effects of insulin treatment on reversing high glucose-induced mitochondrial dysfunction in retinal endothelial cells: a therapeutic strategy for decreasing vascular cell loss in diabetic retinopathy

Diabetic Retinopathy

Monica L. Vandervoort
University of Miami
Mentor: Jeffrey L. Goldberg, MD, PhD, University of Miami, Bascom Palmer

Regeneration-suppressing transcription factors role in retinal ganglion cell regeneration

Glaucoma

Yoshiro Yonekawa
Weill Cornell Medical College
Mentor: Ronald H. Silverman, PhD, Weill Cornell Medical College

Acoustic radiation force impulse imaging for characterization of corneal viscoelastic properties

Glaucoma

Xiao Zhong
University of Minnesota
Mentor: Allison Hubel, PhD, University of Minnesota

Influence of processing on optical properties of a novel biohybrid corneal replacement

Cornea

Maria J. Zutel
Case Western Reserve University-School of Medicine
Mentor: Jonathan Sears, MD, PhD, Cleveland Clinic, Cole Eye Institute

Preventing ischemic retinopathy: novel targets for therapy

Retina
About 40 years ago I attended a benefit performance starring Liza Minnelli, Bob Hope, and other major celebrities. At that ‘Lights On’ evening I learned about Mildred Weisenfeld and her wonderful organization. From the moment the opening song "The Eyes of God" began, I knew I was beginning a long-term commitment to Fight for Sight, because I was blessed with excellent eyesight and shared Mildred’s desire to help others achieve the gift of sight. Including Fight for Sight in my will gives me the confidence that they will continue to find new methods and treatments to achieve that goal.
Did You Know?

- **Fight for Sight** has awarded over $20 million for eye research and children’s eye clinics since 1946.

- **Fight for Sight** supported these notable leaders early in their careers: Harold Scheie, MD (1950), founder of the Scheie Eye Institute at the University of Pennsylvania, Arthur Jampolsky, MD (1952), whose efforts led to the creation of the Smith-Kettlewell Eye Research Institute, A. Edward Maumenee, MD (1958) former director of the Wilmer Eye Institute, founder of the Eye Bank Association of America and a potent force behind the creation of the National Eye Institute, Carl Kupfer, MD (1961), Director of the NEI for 30 years, Paul Sieving, MD, PhD, current Director of the National Eye Institute, László Bitó, PhD (1965), who developed the glaucoma drug Xalatan, and Robert Machemer, MD (1966) the “father” of modern retinal surgery.

- **Fight for Sight** has contributed directly or indirectly to major advances in ophthalmology and vision research, including development of the Intraocular Lens (IOL), donor cornea preservation, various use of ophthalmic lasers, glaucoma therapies, and stem cell research.

- **Fight for Sight** supporters have included Bob Hope, Sammy Davis Junior, Stevie Wonder, Barbara Streisand and Nancy Kerrigan as well as many other notable celebrities.

**Associates** continued

Arnold Kaufman
Jeffrey Kay
Leon Klatt - IHO Ann Prevost Herrera
Jay & Joyce Koppel - IMO Jay Koppel
Ioannis Koutalos
Paul & Marilyn Kramer
Marvin Kurjan
Peter Landau
Barbara Lander
Jonathan Lass*
David Levine
Harvey Lieberman - IHO Madison & Grant Lieberman
Louis & Estelle Checchick Charitable Endowment Fund
Peter L. Malkin
Todd Margolis
Mark B. Isaacs Foundation Inc.
Michael Marmor*
John Marsh
Robert J. & Elaine Marx
Thomas Mauger*
Richard & Harriet Mayer
Jane McGimsey
Thomas Mizzen
Thomas Mohr
Alan & Jane Moss*
Dorothy Neustadter
Martin Nydick
Muriel Palitz
Peltz Family Foundation
Benno L. Petrig
Joseph Pinto - IHO Cole Nowak
William Rattner - IMO Mildred Weisenfeld
Dr. Norman W. Reinach - IMO Jean Lisella 90th birthday
Harvey Reiser*
Louis Rosenbaum*
SafeBridge Consultants Inc. - IMO Ella Mac Ader
Jo Anne Schneider
Benjamin Segan
Allan Sexter
Michael Sidel
Alan Sloate
Snyder Charitable Foundation
Robert Stamper
Leslie Suchman - IMO Ethel Suchman
Judith Sussman
Jean E. Symons
Stewart & Emily Tabin - IHO Dr. Kenneth R. Barasch
Allen Taylor*
Willa Tice
Mary Vinton
Bernice Waldbaum
Barry Waldorf - IMO Mildred Weisenfeld
Shirley Weiner
Leonard Weintraub - IMO Robert Gettinger & Chris Kaminskas
Sandra Wolens
David Zee*
Lorenz Zimmerman*

*Alumni Society
Strabismus, also referred to as crossed eyes, is the result of eye muscle weakness or abnormal muscle development.
Fight for Sight provides initial support and funding to promising new eye researchers to enable them to successfully compete for grants from the National Eye Institute (NEI), the National Institutes of Health (NIH), other governmental sources and large private foundations.

In 2009, Fight for Sight awarded one of just five Grant-In-Aid awards to Mihaela Gadjeva, PhD, for her work on controlling bacterial inflammation in the eye. Just a year later, in large part through the support and encouragement she received from Fight for Sight, Dr. Gadjeva was awarded a prestigious two year R21 Exploratory/Developmental Research Grant from the National Eye Institute (NEI), a division of the National Institutes of Health (NIH). NEI scientific reviewers called her “an outstanding and productive young investigator” whose research offered “ample preliminary data” with a “well thought out approach to the research and potential problems” that “inspires confidence.”

NIH R21 awards are given to eye researchers who propose “Exploratory, novel studies that break new ground or extend previous discoveries toward new directions or applications” and/or “High risk high reward studies that may lead to a breakthrough in a particular area, or result in novel techniques, agents, methodologies, models or applications that will impact biomedical, behavioral, or clinical research.” We are delighted to have helped Dr. Gadjeva achieve this recognition for her research studies.

“Without the help from Fight for Sight, the initial studies would not have been possible. I am extremely grateful to Fight for Sight for providing me with a seed of money when I needed them most: at a moment when I had an idea, but no financial means to pursue it. With the financial help from Fight for Sight I performed key experiments in the lab, and I am convinced that without them, my NIH application would have not been that strong.”

Mihaela Gadjeva, PhD
Instructor in Medicine
Channing Lab
Brigham and Women’s Hospital
Harvard Medical School

The Fight for Sight Grant-in-Aid helped me to perform initial experiments where I have tested how the presence or absence of MIF (macrophage migration inhibitory Factor) affects bacterial infection. I have collected experimental evidence supporting my initial hypothesis that inhibition of MIF may be therapeutically beneficial. I submitted the evidence as part of my NIH grant application and was recently been granted an R21 award from NEI, and I am currently studying how MIF regulates sensitivity to bacterial infection.”

Mihaela Gadjeva, PhD
**Publications Citing Support by Fight for Sight, 2009**

*Abbreviations for grant types are: PD=Post-Doctoral Fellowship, SSF=Summer Student Fellowship, GIA=Grant-In-Aid.*


Stargardt’s Disease, affecting over 25,000 Americans, is the most common form of inherited juvenile macular degeneration and is usually diagnosed before age 20.


Saban, Daniel R., Chauhan, S.K., Zhang, X., El Annan, J., Jin, Y., and Dana, Reza. “‘Chimeric’ grafts assembled from multiple allogeneic donors enjoy enhanced transplant survival.” American Journal of Transplantation (PD, Massachusetts Eye and Ear Infirmary, 2006; GIA, Schepens Eye Research Institute, 1998)

Sappington, Rebecca M., Siderova, T., Long, D.J., and Calkins, D.J. “TRPV1: contribution to retinal ganglion cell apoptosis and increased intracellular Ca2+ with exposure to hydrostatic pressure.” Investigative Ophthalmology & Visual Science (PD, Vanderbilt Univ. School of Medicine, 2005)


Stella, Salvatore L., Jr., Hu, W.D., and Brecha, Nicholas C. “Adenosine suppresses exocytosis from cone terminals of the salamander retina.” NeuroReport (GIA, Univ. of Central Arkansas School of Medicine, 2005, and PD, Univ. of California, 2002)

Stepien, K.E., Han, D.P., Schell, J., Godara, P., Rha, J., and Carroll, Joseph. “Spectral-domain optical coherence tomography and adaptive optics may teet hydroxychloroquine retinal toxicity before symptomatic vision loss.” Transactions of the American Ophthalmological Society (GIA, Medical College of Wisconsin, 2007)


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Since 1946, Fight for Sight has supported and inspired eye and vision research by funding promising scientists early in their careers.