The Foundation Fighting Blindness and Dr. H. James and Carole Free Collaborate to Combat AMD

by Ben Shaberman

The Foundation Fighting Blindness has announced the launch of The Free Family AMD Research Program, which is providing funding for 10 research projects over five years for the development of age-related macular degeneration (AMD) therapies. With an anchor investment from Dr. H. James and Carole Free, along with legacy gift matching funds from the estate of James Lea, this new program will begin in July 2019.

In addition to the new research being made possible by The Free Family AMD Research Program, the Foundation is also funding an additional $3.5 million for 11 other AMD research projects.

AMD affects more than 10 million people in the U.S. and approximately 150 million people worldwide. Advanced cases of the retinal disease can cause devastating central vision loss, leaving people unable to read, drive and recognize faces. AMD is the leading cause of blindness for people over 50 years of age in developed countries.

“We are thrilled to continue to deepen our partnership with Dr. Free and his wife, Carole. Building upon our collaboration that began in 2017, this significantly boosts our ability to drive sight-saving research,” said Benjamin Yerxa, PhD, chief executive officer, Foundation Fighting Blindness. “Though we have some treatments for the wet form of AMD, there are no therapies for the dry form nor are there any preventions. We strive for the day when no one ever loses any vision to AMD.”

“AMD hits very close to our family’s heart, as well as millions of families around the world. Our hope is to find real therapies and real preventions for this terrible disease. We are thankful to join forces with focused and competent partners like the Foundation Fighting Blindness, sourcing the best research projects and equipping key investigators to tackle this problem,” said Dr. H.

Continued on back cover
A MESSAGE FROM OUR COO

The Foundation has recently unveiled our new logo. The decision to create the new logo came out of a deep commitment to our mission and the desire to build from our current brand in a way that strongly emphasizes our purpose: fighting blindness. Our website will also be introducing a new look that is cohesive with our new brand.

Along with our new logo and website, we also have created a new design for In Focus! This new look for In Focus reflects the new brand and how the Foundation projects a beacon of light in darkness. In Focus will continue to shed light on groundbreaking research, provide personal stories as beacons of hope, and more.

We aspire to be a beacon of hope and a source of light in the darkness for the many individuals and families affected by retinal diseases that we serve. The Foundation is excited about all of our new initiatives and making great scientific strides throughout 2019.

Sincerely,

Jason Menzo, Chief Operating Officer

BEACON OF HOPE

What Does ‘Blindness’ Really Mean?

by Jenny Schisler

There was recently a viral image of a visually impaired woman using a cane and looking at her phone. In ignorance, the typical person would say she is “faking” her need for a cane. Thousands of people took the time to ridicule this woman.

Mobility can become difficult and dangerous with certain eye diseases. However, with a retinal degenerative condition like retinitis pigmentosa (RP), you might still be able to read. If you could imagine losing all of your peripheral vision to a condition like RP and looking through a paper towel tube (or even a straw in advanced cases) to get yourself around on a busy sidewalk (where the lady in the viral image was walking), you might reconsider your perspective on her situation. She may have a
remnant of central vision to see her phone or use an app to help her find her destination, but not be able to safely get there without being able to see anything outside of the restricted tunnel she's looking through.

I have RP and it causes blindness over time. Most people think you are completely blind if you are visually impaired, or that you are a “normal,” completely sighted person. The truth is that there are so many people who are somewhere in between.

People in the U.S. are considered “legally blind” if they have visual acuity of 20/200 or less and/or a visual field of 20 degrees or less. Before I began to learn about the broad spectrum of visual impairment, I thought people who were “legally blind” were completely blind. A legally blind person can see, just not very well.

I recently spent a day at the Retina Foundation of the Southwest in Dallas. I have a wonderful doctor, David Birch, and I’m grateful for the team who took care of me there. My first test of the day determined I have 20/20 visual acuity in both of my eyes. That’s because I have 70 percent of my cone function. Cones are the photoreceptors, the light sensitive cells in the retina, that provide central and color vision, and the ability to read and recognize faces.

My second test was an advanced visual field exam, and it was like a video game with flying dots and a button I pushed. I learned that I have about 40 to 50 degrees of visual field, or peripheral vision, remaining in each eye. Most people have around 180 degrees of peripheral vision. However, 40 to 50 degrees looking out 100 yards is quite a bit of vision. I work hard to scan and piece together the places I can’t see. But when you get very close to me and reach out to shake my hand, sneak up on my periphery, or ask me to grab something small in a place right in front of me, I may not see it at all.

I have around 10 percent of rod function left in each of my eyes. Rods are photoreceptors that provide peripheral vision and vision in dark settings. As someone with RP loses rod photoreceptor cells, we lose our peripheral vision and our eyesight “tunnels in.” I have a blind spot at the top of my visual field. I would describe it as the area where the bill of your baseball cap goes, and directly above it. I don’t use this vision as much as my side and bottom periphery, but I can definitely hit my head on cabinets that are left open!

I also have a blind spot, known as a scotoma, just outside my central region of vision. Again, I move my eyes a lot to make up for the loss I have. I do not see a “black spot” here. I would describe the area as a blurry haze with the colors of the missing pieces mixed into the background.

My particular gene mutation (rhodopsin) is considered mild in the various mutations that present as RP according to Dr. Birch, but the slow, steady decline that comes with RP will continue for me. Some people with RP have more aggressive forms that cause serious visual impairment in their teen years or even at birth.

If you meet or come into contact with someone who is visually impaired, I hope you will keep in mind that blindness is not an easy thing to define. Every person is different. If you would like to know what someone does or doesn’t see, especially if you are trying to help them, I suggest politely asking them. If you happened to ask me, I would be more than happy to tell you.
COMMUNITY VOICES

Tattoos in the Fighting Blindness Community

“I’ve gotten tattooed partially as a way to deal with the stress, anger, and isolation that can come with being legally blind. It helps to put some of my feelings and thoughts into pictures that I can talk about with people so they can visualize what I’m feeling. Living with most of your vision gone is a weird phenomenon because you sometimes get stuck in a grey area between being sighted and not sighted, so you don’t quite fit in either world. The tattoos are an artistic way for me to express how I feel and identify the thoughts I have as specific pictures.”

- Tony Taliani

For me, my tattoos tell a story; each piece of my sleeve has meaning. I wear my heart on my sleeve.

February 1, 2018 arrived and I received the diagnosis of retinitis pigmentosa. I didn’t know what that was or what was expected for my future because of this disease. When I left my retina specialist, I knew very little of what was happening. I just knew that I would likely go blind. I felt like I was thrown into the ocean, left alone to swim to the shore. During my time trying to make it to the shore, trying to find answers to my questions and make peace with losing my vision, I also learned the gene that was causing my vision loss is also causing me to have hearing loss. I learned that I have Usher syndrome type 2.

These life changing diseases made me want to add to my tattoos...my story. I spent almost a year planning what I would add and found myself in the tattoo shop on February 1, 2019. I was honoring the day I received my diagnosis with my family by my side, as we all got “FEARLESS” tattooed in braille. Next to the braille is also a sun. The sun represents the Bible verse “My God turns my darkness into light.” Psalms 18:28. This is my reminder that as the days pass, that as my vision and hearing loss progress, I will stay fearless and I will know that God will turn any darkness I face into light.

I love being asked what each tattoo represents. It gives me a chance to tell my story. I am excited to help spread awareness with my newest tattoo for Usher syndrome and retinitis pigmentosa.”

- Abbey Fink

TONY TALIANI: Tony’s half sleeve tattoo of the Greek myth about the titan Atlas. Atlas was forced to carry the globe on his shoulders for all eternity. This character has a story of struggle, burden, or perseverance that speaks to Tony as he has learned to cope with his vision loss.
I was diagnosed with retinitis pigmentosa at age 14. By age 28 (and 8 months pregnant), I gave up my license and got a white cane. The hardest thing about the white cane was that everyone could now see my disability. I wasn’t very good at using it and didn’t have much confidence. I wanted to dress up my cane to make it more exciting, but I learned I had to keep it white and red. So what could I do to make myself feel more confident with this thing? A tattoo. I realized that when I outstretched my arm, I could see a perfect spot for a tattoo.

Faith has been the most important thing on my journey of vision loss, so I decided on a cross. A very simple cross. Now, anytime I stretch out my arm, I have a very cool reminder that Jesus is guiding me every step of the way, with or without vision.”

— Jen Walker

My tattoo is a memoriam to my grandfather with his nickname and time of death—RED 10:14. We were pretty close and I take after him in many ways; I inherited his appreciation for shoes and whiskey, as well as his devilish grin. He was the type of guy who gave everything he had to those who needed it and was always the first one to lend a helping hand. As a SeaBee, he cleaned up Pearl Harbor, and as a lineman for PPL, he restored power to the city of Scranton when the storm came. I suppose there is some poetry in that I am helping to restore the light to those who need it—just in a slightly different way.”

— Mike Valenti
## Retinal-Disease Therapy

Inherited Retinal Diseases and Dry AMD: 36 trials (Select trials) | Updated March 2019

### GENE THERAPIES

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Visit ClinicalTrials.gov for more details and trial contact information. This document is for informational purposes only. Information is subject to change, and its accuracy cannot be guaranteed.
Legally Blind Artist
Paul Castle Expresses
His Story Through Art

by Lauren Moyer

Seattle resident and artist Paul Castle strives to tell stories with his artwork. His own story about blindness is one that he is eager to share with others.

Paul was diagnosed with X-linked retinitis pigmentosa (RP) shortly after he started driving lessons at the age of 16.

“I had heard of night blindness and that’s what I thought I had,” says Paul. “However, during my driving lessons, it was evident I was also losing peripheral vision and that’s when I sought the advice of an eye doctor. After many tests and referrals, I was diagnosed with retinitis pigmentosa by Dr. Potter in Vancouver, BC.”

After graduating high school, Paul went on to study English Literature in college and painted in his spare time. By the time he graduated college, he was selling his original art and doing commissioned paintings. Paul then discovered that being an artist could be his full-time career.

“I have always loved to paint and draw, so my diagnosis of RP wasn’t going to stop me from continuing with my passions,” says Paul. “In fact, it only inspired me to create more.”

Very early in his painting career, Paul decided to start donating 5 percent of every art print sale directly to the Foundation in hope to one day find a cure for RP and other retinal degenerative diseases.

“As the leaders in research, and the Foundation that has provided me so much solace since my diagnosis, this became very important to me,” says Paul. “Bringing awareness to the Foundation and rare diseases like RP has brought deeper meaning to my work. My contribution is small in monetary terms, but immense in heart.”

As Paul’s sight has slowly diminished over the years, he has invented new ways of adapting in his art studio. Paul uses bright lights, small brushes, and the camera on his phone to shrink down images that he cannot fit into his field of vision. He also uses an iPad for sketching because standard pencil lines are too faint for his eyes to see.

“Technology has helped my art immensely,” says Paul. “As my sight has degenerated, my process has slowed down, but my love of art and creating has only intensified.”

When it comes to navigating day-to-day, Paul uses a white cane, which has given him a new sense of freedom. He also plans to get a guide dog in the coming years.

“No matter what happens, sight or no sight, I will continue to create, tell stories, and bring hope to those who need it.”

To learn more about Paul’s artwork, visit his website at: www.etsy.com/shop/PaulCastleStudio

TOP LEFT: Artist Paul Castle using his iPad to sketch his artwork.
TOP RIGHT AND BOTTOM: Samples of Paul Castle’s artwork.

8 FightingBlindness.org
EVENT SPOTLIGHTS

2019 Investing in Cures Summit

The 2019 Investing in Cures Summit was held on March 1–2 in Raleigh, North Carolina, and brought together a cross section of industry partners, investors, researchers and other select members of the community. In total, there were 165 attendees from across the country who witnessed presentations on the latest advancements in clinical trials and industry partnerships. The summit featured presenters from around the world, including translational research experts, clinical trial investigators, and the companies that are poised to take emerging therapies across the finish line. In addition, leadership from the Foundation’s newly launched Retinal Degeneration Fund (RD Fund) presented on investment plans and goals for the future to get more treatments through human studies and out into the marketplace. Please contact us if you are interested in learning more about this event.

The Investing in Cures Summit was hosted by the Foundation Fighting Blindness and the RD Fund. Thanks to our Seed Partners, Eloxx Pharmaceuticals and MeiraGTx.

‘New York Taste for Sight’ in its Third Year Raising Funds

Hosted by tri-state area volunteers, the 3rd Annual New York Taste for Sight welcomed beer, wine and spirits vendors for a tasting event at City Winery in New York City. The event, complete with a silent auction, “cork pull” and live entertainment by Eddy Echo, was a resounding success and raised more than $154,000 for sight-saving retinal degenerative disease research.

ABOVE: Eddy Echo, son of National Trustee Ed Babin and former National Trustee Pamela Chestnut, who is affected with Stargardt disease, performing one of his original songs after sharing his personal story.
VISIONWALK SPOTLIGHT

The Friedrich Family

Though 17-year-old Brendan Friedrich has grown up without sight due to retinal disease, his powerful voice has turned more than a few heads. Brendan’s dream is to become a sports announcer, and – with a little help from his family – he might just be the next Vin Scully!

Brendan and his family – including his dad, David, his mom, Kristen, and younger brother, Cameron – hail from Leesburg, Virginia. Every May, you can find them taking part in the Northern Virginia VisionWalk celebration alongside countless other families whose lives have been touched by vision loss. Both Friedrich sons are affected with Leber congenital amaurosis (LCA). David and Kristen have been participating in the VisionWalk since its inaugural year in 2006.

Last June, Brendan went toe-to-toe with NBC National Correspondent Peter Alexander at the Love of Sight Dinner in Washington, DC. The crowd roared as Brendan gave his rendition of the Washington Capitals’ starting lineup with the poise and confidence of a 20-year professional. There is enough strength in Brendan Friedrich’s voice to inspire his community, and there is enough strength in his family’s determination to find cures to inspire us all.

SCIENCE UPDATE

First Patient Receives ProQR’s Emerging USH2A Therapy in Clinical Trial

by Ben Shaberman

ProQR, a developer of RNA therapies in the Netherlands, announced that the first clinical-trial participant has received its emerging treatment, which targets retinitis pigmentosa and Usher syndrome caused by mutations in exon 13 of the USH2A gene. The Phase 1/2 clinical trial is taking place at Retina Foundation of the Southwest in Dallas and the University of Michigan in Ann Arbor. Known as QR-421a, the treatment is intended to slow or potentially reverse vision loss.

The Foundation Fighting Blindness is investing up to $7.5 million through its RD Fund (a venture philanthropy fund) to move QR-421a into and through the early stage clinical trial.

QR-421a is an antisense oligonucleotide (AON) – a small piece of genetic material – designed to mask exon 13 mutations in the RNA of USH2A. RNA are genetic messages that cells read to make proteins critical to their health and function. QR-421a enables retinal cells to skip over exon 13 (and any mutations inside it) when reading the USH2A RNA, enabling the cells to make functional protein that will hopefully halt or slow the disease process and vision loss.

In September 2018, ProQR reported vision improvements for patients in a Phase 1/2 clinical trial for QR-110, an AON therapy for people with Leber congenital amaurosis 10 (LCA10) caused by the p.Cys998X mutation in the CEP290 gene. The company reported that 60 percent of subjects in the trial demonstrated improvements in visual acuity and their ability to navigate a mobility course. As a result of the encouraging interim results, ProQR is moving the treatment into a Phase 2/3 clinical trial. 📝
Encouraging Vision Improvements Reported in ReNeuron’s Cell-Therapy Clinical Trial

by Ben Shaberman

ReNeuron, a cellular therapy developer in the UK, has reported vision improvements in the treated eyes of the first three retinitis pigmentosa (RP) patients in the Phase 2 part of the Phase 1/2 clinical trial for its proprietary human retinal progenitor cells (hRPC). The Phase 1 portion of the trial, completed last year, primarily assessed safety in subjects with minimal remaining vision. Phase 2 patients in the ReNeuron study have more baseline vision and thus have more potential for visual improvement. The Phase 2 patients read an average of three additional lines (five letters per line) on a standardized eye chart after receiving the emerging treatment, compared to an average loss of one letter in their untreated eyes. The results demonstrate objective improvement in visual acuity compared with the baseline vision in their treated eyes, and compared to their untreated eyes. The patients have also reported subjective improvements in vision.

The trial is being conducted at Massachusetts Eye and Ear in Boston and the Retinal Research Institute in Phoenix under the leadership of Jason Comander, MD, PhD, and Pravin Dugel, MD.

“We are very excited by the remarkable early results that we have seen now that we have moved into a patient population with some remaining vision,” says Richard Beckman, MD, chief medical officer, ReNeuron. “If these gains can be maintained, and similar results achieved in other patients with even better remaining vision, we will be well on the path towards having a huge impact on the lives of patients with this devastating disease.”

“We are encouraged by ReNeuron’s early results of vision improvement for RP patients. We look forward to learning if the vision improvements are sustained over the long term,” says Stephen Rose, PhD, senior scientific advisor, Foundation Fighting Blindness. “ReNeuron’s therapy holds promise for restoring vision in people with RP and related conditions, independent of their gene mutation.”

The Foundation Fighting Blindness funded Michael Young, PhD, Massachusetts Eye and Ear, for pre-clinical and translational studies for the hRPC that helped make the ReNeuron trial possible. The hRPC are stem cells that have almost fully developed into photoreceptors, the retinal cells that make vision possible.

ReNeuron’s Phase 1 study in patients with extensive retinal damage and limited vision showed safety and visual stability that warranted moving the trial forward with a better-seeing patient population.

ReNeuron plans to report additional results from the study in mid-2019. ReNeuron’s February 20, 2019, press release provides additional information on the trial.
Continued from front cover

James Free. “We are hopeful that our efforts and partnership with the Foundation will result in breakthroughs that we can all celebrate together.”

The new program is not the first collaboration between the Free Family and the Foundation. The Free Family currently supports Paul Bernstein, MD, PhD, a Foundation-funded researcher at the University of Utah, who is investigating lipids known as very long chain polyunsaturated fatty acids (VLC-PUFAs) for the treatment of AMD. In addition, the Free Family previously supported John Ash, PhD, at the University of Florida, a Foundation-funded investigator who is developing a gene therapy to preserve vision for a broad spectrum of retinal diseases.

IN FOCUS

This and previous issues of In Focus are available online, where you can get the latest retinal-research information, as well as updates on the Foundation’s activities, on your PC and mobile devices.

For an online and accessible version of In Focus, visit FightingBlindness.org/InFocus.

CONNECT WITH US

Please consider, as part of your lasting legacy, remembering the Foundation Fighting Blindness in your will, trust, or other estate planning. For more information, visit MyPlanToFightBlindness.org.