Vision Access

A Magazine by, for and about People with Low Vision

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Vision Access welcomes submissions from people with low vision, from professionals such as ophthalmologists, optometrists, low vision specialists, and everyone with something substantive to contribute to the ongoing discussion of low vision and all of its ramifications. Submissions are best made as attachments to email or may also be made in clear typescript. Vision Access cannot assume responsibility for lost manuscripts. Deadlines for submissions are , May 1, September 1 and December 1. Submissions may be mailed to Mike Keithley, Editor, 191 East El Camino Real #150, Mountain View, CA 94040; 650-386-6286, editor@cclvi.org.

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From the Editor's Desk by Mike Keithley

Welcome to the Fall 2015 issue of Vision Access.

Fall marks the end of summer dog days and the start of change. First, as agreed at the May Board meeting, the number of yearly issues of Vision Access is changing from four to three. These will be spring (May), fall (September) and winter (January). A new volume begins with the spring issue. The Board hopes that the later date for the spring issue will be more informative to readers as convention plans will be more complete.

Another change is experimental. At the June meeting, the Board agreed that the format of Vision Access should be changed on an experimental basis. The objective is to reduce cost and increase content. So in this issue, most content has a line spacing of 1.15 lines with only one column. This change is not permanent in that the old 1.5 line-spacing and twocolumn format will return if enough people respond negatively to the above changes.

So it's very important that you contact President Glaser immediately with you feelings at president@cclvi.org or 770-925-1822. If you don't like the new format but don't respond, you won't be heard and you'll lose!

We'll have a legislation update from Dan Smith, and a press release about the Alice Coxwell and Ann Sullivan Macy Act. Plans for fundraising events at the 2016 convention are outlined by Leslie Spoone, CCLVI Fundraising Committee chair.

We'll learn about low vision features in Windows 10 in the Science and Tech section, and other interesting items in Quality of Life. Interested? Read on!

Organization News

Sad News by Barbara Milleville

Dear CCLVI Friends,

I have some sad news to share. Joyce Kleiber's husband, Martin Kleiber, passed away from complications of Alzheimer's disease. Totally blind, he was an inspiration to many in our community, as he was a respected and popular mathematics professor at Villanova University. Martin especially loved to help students who were struggling with calculus.

You may remember Joyce Kleiber, as she was the Editor of Vision Access for many years and a

familiar face at numerous CCLVI/ACB conventions. Among other things, she also served on numerous CCLVI committees and was President of the Delaware Valley CCLVI chapter. If you'd like to express your condolences to Joyce and family, she may be emailed at jmkleiber@hotmail.com.	Martin was the beloved husband of Joyce Kleiber; loving father of Andrew M. Kleiber (Marisa), Sophia K. Kleiber, Katharine J. Perrin (Russell), and Martin A. Kleiber; and is also survived by 3 grandchildren, Keane Kleiber, Nicholas Kleiber, and Gerald Perrin, and his sister Maria Abadie.
Below is the obituary for Martin Kleiber. You may access other information, such as a photo of Martin at hosting- 21919.tributes.com/obituary/read /Martin-Kleiber-102722458. Obituary for Martin Kleiber	Martin was a mathematics professor at Villanova University for 43 years. Memorial contributions may be made to Learning Ally, 20 Roszel Rd, Princeton, NJ 08540 (formerly known as Recordings for the Blind and Dyslexic).
Martin Kleiber, of Wayne, PA, passed away on August 2, 2015.	

Fundraising

by Leslie Spoone, CCLVI Fundraising Committee Chair

The CCLVI fundraising committee was very busy at the ACB convention in Dallas, TX. We raised around \$1100 for CCLVI. We had many events over the weekend and week. We first started with the CCLVI Firecracker walk team on Sunday morning and then we had our raffle for the ham and gift card at the Mixer Sunday night. Monday and Tuesday morning we sold raffle tickets at the Market Place and had lots of fun. The fundraising committee helped out all week and we also had a 50/50 drawing on Monday night during the "Game Night" event.

The fundraising committee is getting ready to get back together and brainstorm for next years convention in Minnesota.

Thanks to everybody that helped and bought tickets for all of the fundraising events.

Legislation

by Dan Smith, Legislative Chair, CCLVI

We continue to work for passage of HR 729. This bill will establish demonstration projects to evaluate the fiscal impact of covering low vision devices of durable medical equipment under part B of The Medicare program. Medicare currently does not cover equipment containing lenses. This legislation establishes pilot projects to provide low vision devices to Medicare recipients. It is a step in the right direction to permit low vision Medicare recipients to obtain low vision aids such as magnifying devices and CCTVs.

The bill was introduced in February by Carolyn Maloney D NY 12th district. There are currently 12 co-sponsors, three Republicans and nine Democrats. They are: Gus Bilirakis R FL12, Jared Huffman D CA2, David Jolly R FL13, Kathy Castor D FL13, Steve Cohen D TN9, Robert Brady D PA1, Anna Eschoo D CA18, Candice Miller R MI10, Donald Beyer D VA8, Scott Peters D CA52, Denny Heck D WA10 and Niki Tsongas D MA3. If you are represented by any of these sponsors, please let them know that we appreciate their support. The rest of us need to contact our representatives to get them to support this bill.

It is quite easy to contact your representative. Go to www.contactcongress.org and enter your state and zip code. This will give you the telephone number and email address of your Senators and your Representative. Currently this bill has yet to be introduced in the Senate.

Thank you all for staying active. Together we can move mountains.

Alice Cogswell and Anne Sullivan Macy Act

Press Release as distributed on the ACB leadership list

Reps. Cartwright, McKinley Champion Comprehensive Bipartisan Legislation to Transform Special Education for Students with Sensory Disabilities

Sep 16, 2015

Washington, DC: Today, U.S. Congressmen Matt Cartwright (D-PA, 17) and David McKinley (R-WV, 1) introduced the bipartisan Alice Cogswell and Anne Sullivan Macy Act (H.R. 3535), named for two pioneers in the education of deaf and blind students. This landmark legislation would dramatically improve educational results for students who are deaf, hard of hearing, blind, visually impaired, or deaf-blind. In 1975, Congress enacted America's federal special education law known today as the Individuals with Disabilities Education Act (IDEA); the Cogswell-Macy Act would amend and modernize IDEA to address the largely unmet unique needs of students with sensory disabilities. The bill would:

--ensure that students with vision and/or hearing disabilities are properly identified, evaluated and served, especially when they may have additional disabilities;

--guarantee that students with sensory disabilities are provided with the full array of special education and related services they must have to truly receive a free and appropriate public education;

--promote and support teachers and associated professionals who are critical to the delivery of such services;

--and hold all levels of our public education system accountable for these expectations.

"Upwards of 350,000 students are deaf or hard of hearing, and an estimated 100,000 have blindness or vision loss. Yet less than onethird of these students are reported as having those needs [addressed] under IDEA. That is completely unacceptable," Rep. Cartwright said. "This legislation would ensure that students who are deaf, hard of hearing, blind, visually impaired, or deaf-blind receive an equal and appropriate education and have access to vital services. I look forward to working with my colleagues to guarantee that all children can succeed and achieve their potential."

"Americans have made great strides since 1975 toward improving the lives of children dealing with hearing and sight disabilities, but there is still more work to be done. We need to ensure the nearly-half a million kids with these disabilities have the same opportunity as other children to learn and develop skills. This is a common sense step to ensure we are helping these children," Rep. McKinley said.

The American Foundation for the Blind and Conference of

Educational Administrators of Schools and Programs for the Deaf have endorsed the Cogswell-Macy Act, along with more than 100 other leading national, regional and community-based organizations.

"The introduction of this bill represents a momentous step toward the transformation of this country's special education system in a manner that will truly allow for students who are blind or visually impaired to succeed in a twenty-first century classroom," said Kim Charlson, president of the American Council of the Blind (ACB).

"The Cogswell-Macy Act is the most significant national proposal to improve education for students who are deaf-blind we've seen in decades," said Mussie Gebre, President of the national consumer advocacy group, Deaf-Blind Citizens in Action (DBCA). "When America's deaf-blind children and youth have their unique communications and learning needs fully met, are provided with essential supports such as intervener services, and are empowered by our national education system to rise to their full potential, well then just you look out because they're on their way to achieve great things. Just watch us and see for yourself!"

"Our national special education law has been a success at getting kids with disabilities into their neighborhood schools, but what we haven't done yet is to make sure that students with vision loss get the education they deserve once they get in the schoolhouse door," said Mark Richert, Director of Public Policy for the American Foundation for the Blind. "We've waited forty years, and we're not waiting another forty to give kids who are blind or visually impaired an education that is worthy of their tremendous potential. That's why the Cogswell-Macy Act is imperative."

"We expect that the passage of the Cogswell-Macy Act will rectify years of misapplication of IDEA for deaf and hard of hearing children everywhere. Deaf and hard of hearing children continue to experience language and academic delays because their educational environments are not optimal or even conducive to their learning," said James E. Tucker, Superintendent of the Maryland School for the Deaf and President of the Conference of Educational Administrators of Schools and **Programs for the Deaf. "Every**

student's Individualized Education Program needs to be studentdriven and focused on the child's language, cognitive, and social development."

National Association of the Deaf (NAD) President Chris Wagner stated: "Every deaf or hard of hearing child deserves access to a quality education, and this Act will be an important step towards reminding states of their accountability regarding deaf, hard of hearing, blind, deaf-blind, and visually impaired children's needs."

[Editor's note: It's important to remember that this legislation needs co-sponsorship from your representatives. An earlier version of this bill failed in the last congress, probably due to lack of support.]

Sound Planning for that Low Vision Seminar by Ken Stewart

Congrats to the Low Vision Committee of the Pennsylvania Council of the Blind for its contribution to the VISION ACCESS Spring issue, "Guidelines for Conducting a Low Vision Seminar."

The article was sensible and wonderfully detailed. Its reference to the importance of adequate lighting in the meeting room reminded me of two other characteristics of an ideal meeting room: the way the seating is arranged and the acoustics. Research has indicated that the fully sighted public not only supplements what it hears from

other people by lip reading more than they realize, but they are also aided by a speaker's facial expressions and gestures! So while the sight lines even for "high partial" attendees sitting verv close to the head table might help only a tiny bit, arranging all the seating to optimize exposure to the presenters would be a plus. If the room is furnished with banquet table seating, it helps some attendees to have the chairs oriented toward the head table. Also of importance when selecting a venue is the acoustics in the room. Among the features of a meeting room that significantly contribute to sound quality include a carpeted floor, draperies on walls and acoustic tiles on the ceiling. And, of course the quality of the microphones and public address speakers, and all presenters effective use of that sound system, are all crucial if audience members are able to hear well.

Finally, the minimization of competing noise sources can help, too. Those actions often include the obvious: closing the doors out to the noisy corridor. Even turning off a loud air conditioner can help!

Quality of Life

New Technologies Could Save the Eyesight of Millions

by Peter Jaret, AARP Bulletin, March 2015

[Editor's note: Many of us have encountered the technologies mentioned in this article, but they're all in one place!] If you had seen Lisa Kulik and her husband strolling the grounds of the University of Southern **California's Eve Institute last** summer, you would have thought nothing of it. But for Kulik, that simple walk around the campus was "a miracle." Blind for more than two decades from an inherited eve disease called retinitis pigmentosa, Kulik was seeing clearly enough again to make out the sidewalk and the grassy edge, thanks to a sophisticated microchip implanted in one of her eyes.

Called the Argus II, the device is just one of a growing number of bold new approaches to treating blindness, offering hope to the millions of mostly older Americans in danger of losing their sight from macular degeneration, glaucoma, diabetic retinopathy, and other eye diseases. In fact, progress in ophthalmology is so rapid that some researchers have already begun to envision an end to many forms of vision loss.

"We still have a lot to learn," admits Stephen Rose, chief research officer for the Foundation Fighting Blindness. "but it's not a question of if we'll end blindness. It's really just a question of when."



Joe Vellone, 76, received a telescope implant to improve his vision.--Edward Linsmier

For years, Joe Vellone, 76, watched his sight gradually deteriorate from age-related macular degeneration (AMD), a condition in which the lightsensitive cells of the macula in the central part of the retina are destroyed.

"My vision was so bad I'd walk right by people I know because I didn't see them. I couldn't read at all," says Vellone, who lives in Somers, New York, with his wife.

Last year surgeons inserted a telescope implant manufactured by VisionCare into one of his eyes. Like a stargazing telescope, the tiny device magnifies a small area and projects the image across the whole retina, allowing healthy cells to make it out.

"It changed my life," says Vellone. "I'm reading again. I'm able to see football games on TV. Last summer I was able to see well enough to plant a garden again-eggplants, tomatoes, peppers."

The VisionCare telescope implant recently won FDA approval for patients 65 and older with endstage AMD. The telescope is implanted only in one eye so that the other eye continues to have full peripheral vision. The implant cannot be placed in an eye that has had cataract surgery. Because some people have trouble adjusting to the different images each eye receives, ophthalmologists run prospective candidates through a series of tests to determine if they're a good fit.

"Fortunately, the brain is usually able to adjust to the two different images," explains ophthalmologist David Boyer, who directs the Retina-Vitreous Associates Medical Group in Southern California. "For many patients, we see significant improvements."



Injected anti-VEGF agents can help reverse eye damage and stabilize vision.--Bryan Christie Wet macular degeneration occurs when abnormal blood vessels grow under the retina, often leaking fluid or blood into the macula and damaging central vision. Although far less common than the dry form, in which deposits destroy the macula, wet AMD is much more destructive, leading to more rapid and profound vision loss. Fortunately, a new class of drugs called anti-VEGF agents, now widely available, can halt and sometimes even reverse the damage. Injected into the eye, the medications block **VEGF** proteins, which normally help blood vessels form.

"Before anti-VEGF agents, we had nothing to stop wet macular degeneration," says Jeffrey Heier, M.D., chair of research and therapeutics for the American Society of Retina Specialists and director of the Vitreoretinal Service at Ophthalmic Consultants of Boston. "Now, in a majority of patients, we can stabilize vision and, in some patients, even restore some vision."

The shots have one big drawback: they have to be administered as

often as monthly. To eliminate repeated injections, researchers are developing innovative ways to deliver medication to the eye. One approach under investigation is to implant a small reservoir that steadily releases medication over time, says Heier. Another, more dramatic possibility: using gene therapy to reprogram cells in the eye to produce their own anti-VEGF agents.

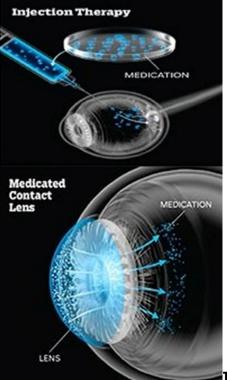
The holy grail of research to treat macular degeneration, though, is finding ways to regenerate healthy cells to replace those damaged by disease. That may not be far off. In 2014, a team at the Jules Stein Eye Institute at the University of California, Los Angeles, reported early success growing retinal cells in the lab and injecting them into the eyes of patients with several different forms of AMD. The scientists began with pluripotent stem cells, which have the ability to become any cell.

"Over a period of months, the cells are coaxed into becoming retinal pigment epithelial cells, which support the photoreceptor cells in the retina," explains Eddy Anglade, M.D., chief medical officer for Ocata Therapeutics, the Massachusetts-based company that is developing the procedure. Early results show significant improvements in vision in some patients, and clinical trials are under way to refine the procedure.

The "bionic eye": Microchip Implant

The "bionic eye" that restored some of Lisa Kulik's vision uses a tiny video camera mounted on glasses to transmit light signals to a microchip implanted in the eye. The microchip then relays that information to the brain, though it collects only a tiny fraction of the information a healthy eye receives.

"But that's enough to help people who have been blind see large objects and make out outlines," says University of Southern California ophthalmologist and biomedical engineer Mark Humayun, who helped develop the Argus II. The device has so far been approved by the FDA for retinitis pigmentosa, an inherited disease that affects about 100,000 Americans, although it may have broader applications in the future. Using a different tack, researchers at a California-based company called Eos Neuroscience have successfully inserted beneath the retina a gene that enables cells to capture light. The goal is to engineer healthy eye cells to take over for photoreceptor cells that have been destroyed by retinitis pigmentosa or macular degeneration. Experiments in mice have shown that the inserted gene allows blind mice to use light to guide themselves. Human trials may begin soon.



Injected

anti-VEGF agents can help reverse eye damage and stabilize vision.--Bryan Christie

For years the only treatment for glaucoma, which results from a buildup of pressure within the eye and is a leading cause of blindness among those 60-plus, was medicated eye drops. But getting people to use the drops every day for the rest of their lives has proved frustratingly difficult. Surveys show that as many as half of people with glaucoma have stopped using their eye drops after the first year.

"People forget. They have trouble administering the eye drops," explains Joseph Ciolino, an ophthalmologist at Massachusetts Eye and Ear, part of Harvard Medical School. "And since the drops slow the progression of glaucoma but don't improve vision, it's hard to keep people motivated to stay on the medication."

As an alternative to drops, Ciolino and his colleague Daniel Kohane, M.D., who directs the Laboratory for Biomaterials and Drug Delivery at Boston Children's Hospital, have developed a contact lens that contains glaucoma medication sandwiched by a thin polymer film. Studies completed last year showed that the lens releases a steady and consistent dose of medication for up to a month.. The drug-delivering lenses can also be laced with antibiotics or antiinflammatory medications in order to treat infections and other eye conditions. As an added benefit, the lenses can be designed to correct vision problems like nearor farsightedness, which would provide additional motivation for people with glaucoma to use them. Other innovative approaches are under investigation. Researchers are developing implantable devices that can measure pressure within the eye and deliver precise doses of medication to control it when it rises too high, for example. Ongoing research with stem cells and gene therapy could provide tools to regenerate healthy optic nerve cells, undoing the damage caused by glaucoma.

Unaware of the Risk With diabetes on the rise, ophthalmologists have begun tracking a dramatic increase in one of its consequences: the sightrobbing disease called diabetic retinopathy. Nationwide, diabetic retinopathy is now a leading cause of blindness among adults 20 to 74, affecting more than four million Americans. Elevated blood sugar levels associated with diabetes gradually damage cells in the retina, eroding sight. Just in the last year or two, doctors have begun to use the anti-VEGF drugs approved for wet AMD to protect against diabetic retinopathy.

But the latest sight-saving drugs are effective only if people know that they have progressive eye diseases. Many don't. When University of Southern California ophthalmology researcher Rohit Varma, M.D., studied Hispanic residents of Los Angeles a few years ago, he found that onequarter had type 2 diabetes and half of them had signs of eye disease, yet a majority were completely unaware of the danger. "We're making tremendous progress," says Varma, who directs the USC Eye Institute. "The biggest hurdle we face in preventing vision loss and blindness is getting people to see an eye care provider. If we could just do that, we'd go a long way toward helping people maintain healthy vision as they get older."

Peter Jaret is an award-winning health and science writer in California.

Sunglasses

from the Vision Council

Although 65 percent of American adults see a pair of shades as a fashion accessory, sunglasses are also a critical health necessity. Many Americans are still unaware of the health risk they take when going outside without protecting their eyes against ultraviolet (UV) radiation. In fact, 26 percent of adults rarely or never wear sunglasses when going outside.

It's not just the bright summertime sun that puts people at risk. Every day--whether it's sunny or cloudy, summer or winter--UV rays can damage eyes in profound ways, making protective eye wear all the more important.

Short-term UV exposure can leave eyes bloodshot, swollen or hypersensitive to light. Longer term exposure can accelerate serious eye health problems, including cataracts, macular degeneration, and even cancer of the eye and surrounding skin.

With the release of its new report, "Protection for the Naked Eye: Sunglasses as a Health Necessity," The Vision Council is encouraging people to wear sunglasses and know about the serious eye risks from exposure to UV rays.

Serving as the global voice for vision care products and services, The Vision Council represents the manufacturers and suppliers of the optical industry through education, advocacy, and consumer outreach. By sharing the latest in eye wear trends, advances in technology, and advice from eye wear experts, The Vision Council serves as a resource to the public, looking to learn more about options in eyeglasses and sunglasses. The Vision Council's report and other UV-protection information can be found at www.thevisioncouncil.org/2015UV For more information, contact Jessica Lutz, marketing and communications manager at jlutz@thevisioncouncil.org.

AFB eLearning Releases New Webinar: Bioptic Driving for People with Low Vision from the American Foundation for the Blind

AFB eLearning is pleased to announce its newest webinar offerina: Bioptic Driving for People with Low Vision. Many individuals with low vision would like the privilege of driving an automobile. Some of these individuals have driven before but are now experiencing vision loss and have lost their license while others have never been able to meet the visual requirement for a driver's license. **Specialized telescopic lens** systems, referred to as bioptics, are now making it possible for some of these individuals to drive.

This webinar is aimed at service providers working with individuals with low vision who might be candidates for bioptic driving. Potential drivers and their families will also find this presentation very informative. Topics discussed will include a history and description of bioptic driving, low vision driver laws, suggestions for training, and resources about bioptic driving.

The webinar presenter is Ike Presley. Ike is the National Project Manager at the American Foundation for the Blind in Atlanta and is a bioptic driver himself.

This 75-minute webinar has been approved for continuing education credit by the Academy for Certification of Vision Rehabilitation & Education Professionals (ACVREP), and it can be purchased for \$49 from the AFB Bookstore. Members of the Association for Education and Rehabilitation of the Blind and Visually Impaired (AER) receive a 20 percent discount by purchasing this webinar through the link provided on the AER member website.

The webinar is pre-recorded and will be available to you for a full year to access as often as you like when it is most convenient for you. There is no specific date and time you need to be available.

For more information and to purchase the webinar, visit www.afb.org/store/Pages/Shoppi ngCart/ ProductDetails.aspx? ProductId=eBiopticDriving&r uling=Yes.

Hadley School for the Blind Debuts Downloadable Audio Tips by Sheryl Bass

Three million people in the U.S. ages 40 and older have low vision. According to 2010 research by the National Eye Institute, the number of Americans with low vision will continue to grow dramatically: from 2.9 million in 2010, to 5 million in 2030, to 8.9 million in 2050, as our population ages. In response, The Hadlev School for the Blind, the largest provider of distance education for people who are blind or visually impaired worldwide, has launched a series of 10 free audio recordings designed to help those living with low vision maintain their independence. The recordings share practical ways to address daily living skills made difficult by vision loss.

The recordings are available on CD, NLS (National Library Service) cartridge and as free mp3 audio downloads from the Low Vision Focus @ Hadley (LVF) Web site at www.lowvisionfocus.org. Individuals are required to register online to receive access to the free audio recordings, or they should call 855-830-5355 for the CDs or NLS cartridges. Each recording is approximately 30 minutes long and covers a different aspect of living independently with low vision. This series helps people move forward using step-by-step tips and techniques, along with information and resources to help maximize the vision they have. The 10 topics are:

1. Making the Kitchen User Friendly--Making the kitchen safer and more functional--clearing clutter and using contrasting color and shape recognition.

2. Low Vision Cooking-- Safe cooking techniques to make cooking an enjoyable experience.

3. Doing Simple Kitchen Tasks--How to make those daily kitchen and household tasks easier.

4. Basic Tactile Marking--Using various materials to create tactile markers, marking different household items to distinguish them.

5. Simple Home Modifications--Tools and strategies to make your household more low visionfriendly.

6. Getting Around the House--Techniques to increase your indoor mobility at home

7. Looking Your Best--Low vision tips to make your bathroom routine easier, ways to make laundry more manageable.

8. Keeping Prescriptions in Order--Taking your medications, getting your prescriptions and managing your prescription routines.

9. Going Out for a Meal--Tips and tricks to go out and enjoy a meal in public.

10. Going Out with a Friend--Using a sighted guide to navigate places and situations outside of your household.

The audio recordings offer a variety of practical tips and techniques for managing low vision at home, such as: how to improve lighting, and use contrast in kitchens and other areas; placing braille dots on one's microwave; placing makeup in the refrigerator to be able to feel where it is being applied; and placing a different number of rubber bands on shampoo and conditioner bottles to be able to differentiate between the two.

While the LVF is geared toward older adults, the program is open to any individual who is experiencing sight loss or caring for someone who may be losing his or her vision. Adult children of seniors living with low vision are encouraged to take advantage of the online resources to assist their parents. Caregivers and professionals, especially those working with low vision support groups in local communities, are also encouraged to utilize the resources available through the LVF Web site.

In addition to downloadable recordings, the Website offers links to free low vision webinars, Hadley distance education courses that are relevant to those with low vision, and tips and resource lists. In the future, Hadley will provide free, "quick tip" videos through the Web site that complement the audio recordings as well as new monthly webinars.

"We are so excited to offer Low Vision Focus @ Hadley and enable this growing population to retain their independence and live with confidence," says VP of Education and Training and head of Low Vision Focus @ Hadley, Doug Anzlovar.

For more information or questions, call 855-830-5355 or email lowvisionfocus@hadley.edu.

Doylestown Woman Turns Business into Opportunity

By Crissa Shoemaker DeBree, Staff writer, Bucks County Currier Times, May 19, 2015

Over the years, Mel Scott has amassed a good-sized collection of workout DVDs in her quest to remain fit. There's only one problem: she can't see them. Diagnosed at age seven with the degenerative eye disease retinitis pigmentosa, Scott, now 56, is legally blind. While some sight remains, it's not enough to allow her to follow along with the televised instructors.

"I couldn't get past the menus because I couldn't see what was going on on the TV," Scott said during an interview at her Doylestown home as guide dog Jingles lounged in a corner. "And when I got to the exercise, I couldn't do them. It would say things like, 'Make sure you have a good view of the TV so you have your form correct.' Or it would say, 'Let's do 10 of these.' I'd say, 'Ten of what?'"

Frustrated by her inability to follow along, Scott decided to do something about it by developing her own line of descriptive audio workouts for the visually impaired.

"If you want it," Scott said, "create it."

Scott has never been one to allow her disability to slow her down. A North Carolina native, she was enrolled in graduate school at the **University of North Carolina-**Chapel Hill when she discovered a passion for massage therapy. By the time she quit school, her eyesight was so poor that reading had become almost impossible. Nevertheless, she devoted herself to the practice, turning it into a successful 30-year career. The idea for BlindAlive Eyes-Free Fitness came to her, Scott said, in an "energy flood" while she was exercising on her stationary bike. Within a day, she had assembled a team of family and friends to help create a website and social media presence, and develop workouts.

Emmy Award-winning composer Doug Katsaros composed her company jingle. The first set of six programs, which range from cardio and stability ball exercises to a "boot camp" workout, are narrated by New York City fitness instructor Shana Maleeff, whose mother is blind.

Scott herself is narrating a new set of 20-minute workouts geared

toward seniors or those who are more sedentary. The workouts, which can be done while seated, will air on a radio reading service for the blind.

"I've done exercises all my life, and I have some vision," Scott said. "I know what the moves are supposed to look like, but some don't know what you mean when you say, 'Put your arms in the letter T.' They don't know what the letter T is."

Pilates instructor Edye Fisher-Discount holds classes for breast cancer survivors, back rehab patients and even those with multiple sclerosis. But working with Scott to develop exercises for the blind, she said, has opened her eyes to new ways to help her own clients.

"When you're paying attention to every detail, the exercise is more intense," said Fisher-Discount, who lives in Lower Makefield. "It opens up a world for me that I didn't know about. I bring that now to all the classes."

Scott said she's tried to hire others who are blind, including Maleeff's mother, Lynne, a longtime friend who works as her sales rep, and Visionary Media, a media firm for the visually impaired that composes her workout music. The workouts have been downloaded between 200 and 300 times, Scott said. While it's not enough for her to break even in the business, she said she's gaining ground.

"The market is a challenging market to reach," she said. "I can get to Twitter, Facebook, LinkedIn, YouTube and email, but the people that I'm wanting to reach might not be there. I need to reach senior centers, blind associations, the Veterans Administration, etc. It's challenging. I'm starting to get traction. It is starting to happen. I know it's just a matter of time."

Each digital download, available online at BlindAlive.com, costs \$19.10, a price chosen because it's the year her father was born. The workouts are also available on compact disc. Scott also offers additional descriptions online for those having trouble following along.

"I want everybody to have the choice to do exercises," she said. "I don't want anybody to have the excuse to sit on their rear end on the couch. I want to lift that barrier, lift that excuse for not having the ability to exercise."

To learn more about BlindAlive Eyes-Free Fitness, visit www.BlindAlive.com.

Everyday Fitness Ideas from the National Institute on Aging at NIH

People with low vision can be active in many ways! Before you start an exercise routine, however, talk with your medical doctor and your eye doctor, since bending, lifting, or rapid movement can affect some medical and eye conditions. A fitness instructor at a local gym or community center can help you create an effective exercise program and teach proper form.

If you're working out at home: Ask a partner to read the exercise descriptions and check your form until you learn the exercises. Try the Go4Life exercises. Many can be done sitting down. For others, you can use a sturdy chair, counter, or wall for support.

Walking is great exercise, but play it safe:

Walk with someone who can point out safety issues along your route, such as objects in your path. Take a brisk walk at the mall. Many "mall walking" groups meet before stores open.

Tandem cycling can be highly social, a lot of fun, and good exercise! In addition to providing a great workout, it teaches teamwork.

A sighted rider sits on the front seat of the "bicycle built for two" and communicates what is ahead to the person sitting on the back seat.

You may not have to steer, but your partner will appreciate help with pedaling!

Bowling is not only possible, but also highly competitive. You can bowl with sighted guidance or using a guide rail. A sighted assistant aligns the bowler on the approach before the delivery. Lightweight metal rails help guide you straight toward the pins. Swimming is another excellent endurance activity.

If you swim laps, count the number of strokes it takes to cover	Almost every sport has been adapted by people with vision loss.
the length of the pool so you can slow down as you approach the	Visit www.nia.nih.gov/Go4Life.
end of your lane.	Try sample strength, balance and
A pool with ropes separating the	flexibility exercises:
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Digital Reading Glasses By Jonah Bromwich

[Editor's note: Ken Stewart submitted this article, which originally appeared in the New York Times Metropolitan Section, July 5, 2015.]

When Dr. Howard Kaplan first started using a Kindle, he had a flash of insight. Dr. Kaplan is an ophthalmologist and retina surgeon with a practice in Poughkeepsie, New York. His patients often suffer from macular degeneration and retinitis pigmentosa, diseases that severely degrade their vision. Even after successful surgeries, many remain unable to read print.

However, he realized that the digitization of the world's books has provided an opportunity. Research suggests that it is less difficult for those with a limited field of vision to read on backlit screens, and the ability to increase text size, sharpen contrast, and set words in motion can make reading easier for the visually impaired.

After a failed attempt at creating a Kindle-like e-reader for his

patients, Dr. Kaplan decided to move from hardware to software. He tried to court interest from Google, Barnes & Noble and Amazon, but he said the market wasn't big enough to interest them. So he began developing the Spotlight Text app using \$60,000 of his own money and just one programmer.

"Spotlight Text" is a bare-bones reading program outfitted with scrolling text, adjustable font, sharp contrast and an audio feature that narrates books. The app usually is \$29.99, a third of which is donated to the Foundation of the American Society for Retina Specialists; it is currently \$9.99.

"I used glasses that replicate the effects of macular degeneration and retinitis pigmentosa to test the app, and I can report that it does work, at least for a user with a simulated visual disability," Kaplan said.

The speed at which the text scrolls can be adjusted, and it can be set to move vertically or horizontally. The text-to-speech feature is the least impressive: the voice is so robotic that it's difficult to imagine anyone using it consistently.

There are other apps like Spotlight Text with slightly more sophisticated features. The very similar "MD evReader" came out in 2013 and allows for skipping between chapters, and text-tospeech apps like the Voice Dream Reader are often far easier to understand. It's also possible to use Apple's VoiceOver feature to convert text to speech in various other apps, including the Kindle's.

But Dr. Kaplan's app does have a notable advantage. An organization called Bookshare provides up to 200 books a month to those with visual disabilities for a \$25 set-up fee and \$50 annual subscription, and has formed a partnership with him. Its enormous library, with close to 350,000 titles, can be found within Spotlight Text by doing a simple search.

The combined price of Spotlight Text and the Bookshare membership will seem steep to those used to getting their apps for free, but Dr. Kaplan insists that the price is nothing compared to the medical devices usually recommended to those with impaired vision.

Spotlight Text might serve as an awareness campaign, showing companies like Apple and Amazon how simple it can be to help the visually impaired.

Science and Tech

edited NEI press release

[For the complete article, visit nei.nih.gov/news/pressrelease/V G3_amacrine_cell.]

When we move our head, the whole visual world moves across our eyes. Yet we can still make out a bee buzzing by or a hawk flying overhead, thanks to unique cells in the eye called object motion sensors. A new study on mice helps explain how these cells do their job, and may bring scientists closer to understanding how complex circuits are formed throughout the nervous system. The study was funded by the National Institutes of Health, and was published online in Nature. "Understanding how neurons are wired together to form circuits in the eye is fundamental for advancing potential new therapies for blinding eye diseases," said Paul A. Sieving, M.D., Ph.D., director of NIH's National Eye Institute (NEI). "Research aimed at regenerating photoreceptors, for example, is enriched by efforts to understand the circuitry in the eye."

Object motion sensors are one of about 30 different types of retinal ganglion cells (RGCs) in the retina, the light-sensitive tissue at the back of the eye. These cells are unique because they fire only when the timing of a small object's movement differs from that of the background; they are silent when the object and the background move in sync. Researchers believe this is critical to our ability to see small objects moving against a backdrop of complex motion.

The cells in the retina are wired up like an electrical circuit. Vision begins with photoreceptors, cells that detect light entering the eve and convert it into electrical signals. Middleman neurons, called interneurons, shuttle signals from photoreceptors to the RGCs. Each RGC sends the output visual information deeper into the brain for processing. This all takes place within fractions of a second, so the scientists were surprised to discover that before it reaches object motion sensors, visual information about object motion takes a detour through a unique type of interneuron. Their results represent an ongoing effort by scientists to map out complex circuits of the nervous system.

"Getting these connections precisely correct is incredibly important, as each specific feature of vision, such as seeing a particular direction of motion or a color, relies on it," said the study's lead investigator, Arjun Krishnaswamy, Ph.D., of Harvard **University's Center for Brain** Science, Cambridge, Massachusetts. "It's also incredibly complex. Within the retina, all these different types of **RGCs and interneurons intermingle** as they develop. There have to be remarkable ways to sort them out so they connect up properly."

Using a genetically engineered mouse line, the researchers recorded the activity of object motion sensors and found that the cells form synapses (or connections) with interneurons called VG3 amacrine cells. What's interesting about this connection is that most retinal circuits tend to follow a more direct, and therefore faster, route. RCGs typically are two synapses away from a photoreceptor, but with the addition of VG3 amacrine cells to the circuit, object motion sensors appear to be three synapses away, slowing visual information delivered to the cells.

To test this idea, the scientists flashed light on the retinas of the mice and found that on average the object motion sensors responded later than other types of retinal ganglion cells. They also selectively activated the sensors by projecting light patterns onto the retinas that mimicked the movement of small objects against a desynchronized background. Mice with genetically eliminated VG3 amacrine cells did not show these responses.

The researchers theorize that the longer pathway contributes to an essential delay, ensuring that information from the central field of view and from the periphery arrive at the object motion sensor at the same time. This in turn allows the object motion sensors to accurately assess the difference between the motion of a hawk and the slow-moving clouds above it, or the flight of a baseball and the undulating crowd in the stadium. Dr. Krishnaswamy and his colleagues then investigated how

the circuit develops. They found that object motion sensors and VG3 amacrine cells each make a protein called sidekick-2, specifically where they contact each other. Sidekick-2 is an adhesion molecule that allows the two cell types to find each other and stick together so they can communicate across a synapse. Mice genetically engineered to block sidekick-2 production lacked synapses connecting VG3 cells to object motion sensors. Moreover, electrical recordings showed that sensors in these mice did not distinguish the motion of a small object from background motion.

For Dr. Krishnaswamy, the next steps are to investigate the role of sidekick-2 in brain development, first in mice and eventually in humans. "Neurons in the brain work just like neurons in the retina, and scientists are beginning to understand how they make precise connections to form circuits that control thoughts, senses and emotions," said Edmund Talley, Ph.D., program director at the National Institute of Neurological Disorders and Stroke (NINDS), part of the NIH. "This pioneering work demonstrates the molecular specificity behind these connections."

The study was conducted in the lab of Joshua R. Sanes, Ph.D. Dr. Sanes serves on the steering committee for the NEI Audacious Goals Initiative (nei.nih.gov/audacious) on neuroregenerative medicine. The aim is to restore vision by regenerating neurons and neural connections in the eye and visual system.

Welcoming Windows 10!

Quentin Christensen

[Editor's note: Check out Quentin's blog at 22point.wordpress.com. He has a Windows app that provide/ large mouse cursor that work in Windows 12.]

Windows 10 has been available since July, so it's a good time to look at how it's going, what accessibility is like and whether it's worth upgrading, or waiting.

Firstly, the reception overall has been mostly positive. The fact that it is a free upgrade for anyone with Windows 7 or 8 has obviously been a big draw card, and you have a year to take advantage of that offer, or you can stay on your existing version (Windows 7 will be supported until 2020). Start menu

The most talked-about change, the return of the start menu, should feel comfortable to those familiar with Windows 7 or earlier. The left side has a Windows 7 style text list of most used and recently installed apps (plus settings, power, etc.). The right side is customisable with a tiled interface similar to Windows 8. When you bring up the Start menu, the focus is in the "Search" edit, which lets you find apps, documents or search the web. Personally, I use the task bar for frequently used apps, I've pinned my word processor and browser there and can press WINDOWS+1 to open the first item, WINDOWS+2 for the second, or WINDOWS+ALT+1 to bring up the jump list of recent documents for the first item, etc. (or right click if you're a mouse user). I use the start menu search for other things as needed.

Cortana

Cortana will be of interest to many people. Essentially, it enables dictating commands or information and works very similarly to Siri on iOS or Google Now on Android. I've found that the recognition is OK, particularly for launching apps. It did make more mistakes when I dictated text to type in an email, but I could do it (like using Siri for the same task). As a touch typist with my PC keyboard in front of me. I tend to default to that rather than dictating, but having the option will be more than simply a convenience for some users. Here's a more in depth look at what you can do with Cortana: techranker.net/cortanacommands-list-microsoft-voicecommands-video. **Privacy concerns**

The main negative press around Windows 10 has been concerns around privacy. In its default state, Windows 10 sends a lot of information back to Microsoft. Two examples are that anything you type into the start menu or say to Cortana, all gets sent back to Microsoft. Also, if someone with whom you are Facebook friends drops by with his or her Windows 10 laptop, it automatically connects it to your Wi-Fi network without needing a password. Some settings you can turn off, but some are harder to stop. One guide to privacy settings (and tightening them up) is: fix10.isleaked.com.

Automatic updates

Another feature with mixed reviews is that you can't turn off automatic updates. This is good, as it means you don't need to worry about them and will always be up to date. It's bad because the updates also include new or changed features so potentially things may suddenly work differently, or worse, may not work at all with your adaptive technology. Upgrading to Windows 10 Professional gives you the option to get updates later, giving AT vendors time to adjust to new features before they are rolled out to you. Another benefit is that next time you buy a computer, it will be just the same as the one you are replacing.

Accessibility

Windows 10 includes all the accessibility features from Windows 8 without many changes. Those coming from Windows 7 will notice some new features which were mostly slipped into Windows 8:

The magnifier works full screen even when using the High Contrast themes.

I've found fewer windows end up with black text on a black background in High contrast mode. Narrator includes a lot more commands. Not as many as NVDA, but a big leap from previous versions.

Narrator can be turned on or off with WINDOWS+ENTER, so I find myself using it more now.

There are various little tweaks such as the magnifier tracking features automatically being turned on.

The Start menu also adjusts well to High Contrast mode. There are "Live" tiles for things like Weather, which automatically change to show you the latest headlines or temperature. Whereas the text on these tiles is usually white on a photo, the text in High Contrast becomes white on a black square over the image.

Windows 10 has a "flat," minimalist look which I took awhile to get used to - Windows don't have a defined border frame any more, but only a small shadow at the edge. I feel like I'm looking at a pile of papers. Using "Tablet mode" forces windows full screen, but removes the desktop (like Windows 8).

Adaptive technology

Most AT vendors have announced either current or upcoming support for Windows 10:

Jaws 16 and Magic 13 both work with Windows 10: freedomscientific.com/About/News/Article/141.

Window Eyes 9.2 Works with Windows 10, ZoomText not yet Windows 10 ready: www.aisquared.com/support/mor e/ windows_10_status.

Supernova (beta), Guide, EasyConverter, EasyReader and Dolphin Publisher are all Windows 10 ready: www.yourdolphin.com/newsitem. asp?id=776.

NVAccess recommends waiting until NVDA 2015.3 (due in late August): www.nvaccess.org/win10.

Glassbrick hasn't made an announcement; however, I'm using it, and the only issue I found is on my PC is that I have to run in compatibility mode with display scaling disabled. Otherwise, I can't see the bottom of the screen (possibly a resolution issue rather than Windows 10 specifically?): www.glassbrick.org. Serotek has a similar position to NVAccess. System Access works with some aspects of Windows 10; however, they suggest waiting until their next version and until Microsoft irons out some early bugs:

serotek.com/blog_our_position_o
n_windows_10

Probably the biggest feature of Windows 10 that isn't fully accessible yet is the new Edge browser, which replaces Internet Explorer. IE is still included and still works as it did in previous versions, or you can also use other browsers such as Firefox. NVDA, from 2015.3 RC1, has experimental support for the Edge browser: community.nvda-project.org/ blog/NVDA2015.3rc1Released.

Upgrading

The upgrade process, when it works well, is very smooth. I've documented the process and steps in my book (more below) and you can download the chapter on upgrading for free at www.22point.com.au/publications .html

If you use adaptive technology, such as Jaws or Window Eyes, when you start the upgrade, it speaks the first part. Once the computer has rebooted during the install, you need to use Narrator to guide you through the rest of the install by pressing WINDOWS+U. How long you have to wait to start Narrator is tricky to guess. Our computers here (1 - 5 years old), took 1 - 1 $\frac{1}{2}$ hours. So I would start it going, then check whether WINDOWS+U does anything every 20 minutes or so.

Should you upgrade?

So, SHOULD you upgrade? The main points I would make are:

Windows 10 is fairly stable. However, I do find some apps freeze for a few seconds, occasionally opening a new window, and Outlook regularly freezes sometimes for minutes on end.

There are still features which don't work completely (keyboard

navigation through Action Center is unreliable, and Edge browser not recognizing screen reader navigation keys being two examples).

From Windows 7, the desktop and system tray are the same, and the Start menu isn't too different.

From Windows 8, the tiles in the start menu look familiar, and accessibility options are the same.

Not every program (or hardware device) works with Windows 10 yet, so check with your manufacturer on anything you rely on. When we upgraded my wife's laptop, for instance, the speakers and mouse pad stopped working until we uninstalled the existing drivers.

Overall, I like the new version. I would encourage users to upgrade by July 29, 2016, when the free upgrade offer ends, but I still recommend most users hold off for a couple of months until the early bugs are ironed out and things are running smoothly for everyone. If you do upgrade now, once you get through the install, you should find most things work fairly well.

Making Windows 10 Easy to See

If you are making, or considering making, the transition to Windows 10, "Making Windows 10 Easy to see" is the first book designed to help you not only get the most out of Windows 10, but also to help you set it up for use with large print, higher contrast colors or speech. Aimed at users of laptops, desktop PCs and tablets, instructions have both mouse and keyboard commands, including Narrator, so are designed to be easily used with any other adaptive technology. They are Available directly from 22 Point: http://www.22point.com.au/publi cations.html

Topics include:

Turning on for the first time, Using larger fonts and magnifier, Getting around Windows,

Common apps and tasks,

All in easy to understand language. Plus join the Making Windows Easy online community for free!

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