Visibility

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News and Research from Envision Vision Rehabilitation Center

Envision Conference 2010 Provides Opportunity for Advocacy

"Anyone interested in the art of treating those who are visually impaired should attend Envision Conference."

— Envision Conference 2010 attendee

Nearly 400 low vision clinicians, researchers, educators and advocates gathered on the River Walk in San Antonio, Texas for the 5th annual Envision Conference September 22-25.

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ENVISION 2011

Interdisciplinary Co-Management: An Evolution of Integrated Vision Rehabilitation and Patient Care

Walter Whitley, OD, MBA, FAAO
Director of Optometric Services, Virginia Eye Consultants

Saysha Blazier, BS
Fourth Year Optometric Extern at Virginia Eye Consultants
President, American Optometric Student Association

"One of the measures of a profession's maturity is the level at which its practitioners recognize their limitation," says Albert A. Bucar, OD, DOS.[1] Vision rehabilitation specialists are no exception. From low vision specialists to occupational therapists to psychologists, we all must acknowledge the fact that we can't be all things to all patients. Vision rehabilitation specialists must work together to provide our patients with the best of all of our services. By utilizing the principles in interdisciplinary co-man-

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ENVISION® Vision Rehabilitation

agement, we have the opportunity to integrate the care that we provide in order to maximize patient care and improve their quality of life.

Assessing a low vision patient includes assessing the functionality of the patient and prioritizing focused tasks for the individual. A multidisciplinary approach and coordinated efforts are necessary to take advantage of new scientific advances and achieve optimal results for the patient.[2] A low vision rehabilitation program can provide medical care and prescribe magnifying devices, but can also coordinate the social, professional and medical rehabilitation as parts of a complete interdisciplinary strategy to care for the patient. Patients may be confused about the services that many different health care professionals provide and prioritize their care based on their limited understanding of their condition. Thus, they may not know the benefits of seeing multiple providers.

As vision rehabilitation specialists, we owe it to our patients to work together as a team to address the multiple facets of our patients' health care. Low vision rehabilitation is considered a referral-based specialty; therefore, continuous communication between the primary eye care provider, the primary medical doctor, and other specialists is crucial. In addition, a child with decreased vision requires supplementary specialists to help them appropriately develop educationally, mentally, behaviorally and socially. Social interactions are greatly influenced by visual stimuli. "Psychological counseling to improve the person's ability to cope with vision loss may also improve the functional resolution of vision loss."[3] Whatever the patient's condition, vision rehabilitation specialists are responsible for the care each patient receives. In order to fully care for our patients, we all must participate in the evolution of interdisciplinary health care and refer to specialists who can address the unique needs of our patients.

Why Do We Hesitate to Refer to Other Vision Rehabilitation Professionals?

Lack of awareness. One explanation may be the lack of understanding of the services other vision rehabilitation specialists provide and who those professionals are. There are various health care personnel who are involved in this process including, but not limited to, optometrists, ophthalmologists, occupational therapists, physical therapists, orientation and mobility specialists, rehabilitation teachers, psychologists, social workers and ophthalmic assistants.[4] In order to appropriately refer to other professionals, we must gain a better understanding of each respective field, including who the patient needs to see, how often, and for how long. Patients and their families need to be fully aware of why they are seeing so many different medical professionals. If not, patients may become frustrated and opt to discontinue their care with any of the providers.

Limited understanding of interdisciplinary care. A definite challenge of referring to other specialists is the question of who is keeping track of how the patient is being managed. Many times, each vision rehabilitation specialist provides the best care possible to their patients and assumes the patients are being followed by other providers. These assumptions lead to a lack of communication and a breakdown in the system. Patients may not be getting all aspects of the care they need due to lack of teamwork. In order to improve our system, we must improve our communication and coordinate care using a team approach. Drinka defines the Interdisciplinary Health Care Team (IHCT) as "a group of individuals with diverse training and backgrounds who work together as an identified unit or system. Team members consistently collaborate to solve patient problems that are too complex to be solved by one discipline or many disciplines in sequence."[5] For an interdisciplinary team to be effective, several members of the interdisciplinary team need to take a leadership role and "own" their patient's condition and help coordinate their care.

Uncertainty of the need of specialty care. Just as we may not understand there are many different services available to patients requiring vision rehabilitation, we also may not understand how other specialties can benefit our patients. There may be misconceptions from past experiences about the effectiveness of certain treatments, such as vision training or the integration of low vision devices, which deter practitioners from offering these forms of care to their patients. If our responsibility is to promote our patient's best interest, who are we to deny a referral to others who may be able to offer alternative treatments?

Benefits of Interdisciplinary Co-Management

"Effective interdisciplinary teams decrease costs, improve patient satisfaction, and reduce morbidity and mortality through patient safety and error reduction, while improving overall healthcare worker satisfaction and professional relationships."[7] It should be easy for us to understand that when several specialists are working together in a cohesive nature, the best

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care will be provided to the patient. In this model, the expertise of multiple individuals can be utilized, resources can be maximized, and collaboration of ideas or problem-solving skills can be obtained. Not only does the medical management model provide the absolute best care for the patient, it also provides the practitioner opportunities for growth both within their community and their career. "Practitioners who engage in teamwork benefit from the support and wisdom of diverse colleagues, but also need to be prepared to be challenged and, at times, to practice courage and humility."[6]

Referrals in this type of model should never be a one-way street. For just as often as the primary medical doctor refers to the ophthalmologist or optometrist for disease states of the eye, so should the ophthalmologist refer to the optometrist for special low vision devices, vision therapy, or even a pair of glasses. In addition, the optometrist can refer to the ophthalmologist for cataract surgery or to occupational therapists for help with home care, or back to the ophthalmologist or primary medical doctor to continue treatment for the disease state. It is not a matter of giving a patient away; it is about collaborating and contributing our expertise for the best and most effective outcome for our patients.

Establishing an Interdisciplinary Co-Management Referral Model

Change our mindset. In order to meet the future needs of our patients, vision rehabilitation specialists must strive to find ways to improve patient care while also improving the efficiency of the care provided. We can no longer address just the particular needs of our patients; we need to reach out to other health care personnel who may be able to bring added benefits to our patients that we may not be able to provide. "The changing organization, financing and priorities of the health care system are creating new imperatives for interdisciplinary teamwork. This team must function interdependently with an established means of communication between practitioners, patients and families."[7]

Determining who plays what role in the patient's care, and an established understanding of the team players involved, should lay the foundation for any interdisciplinary model.

Find your specialists. One of the greatest barriers to inter-professional co-management is, once again, the lack of awareness of other specialties. Either vision rehabilitation specialists don't know what services other specialties offer, or they do not know of anyone who provides these services. There is a need to improve the communication and interaction of all people involved. Get out in the community, visit other providers, observe them in their clinic and see first-hand how complementary services can benefit your patient. "Face-to-face interaction is the best way to get to know each other and to establish the trust in caring for mutual patients," said Jeff Michaels, OD, a low vision provider at Family Vision Care of Richmond in Glen Allen, Virginia.[8]

Clearly establish protocols for care. It is important to establish co-management protocols for referring providers with frequent communication and documentation. By establishing protocols, patients and specialists alike will clearly understand the rules which will help to alleviate the fears of potentially losing patients to another practitioner. Whenever a referral is requested, the initial referring provider should send patient notes that clearly state what services they are requesting, patient progress notes and when they would like to see their patient back.

In return, the specialists should continually communicate with the patient and the referring provider, provide care as directed, and return the patient in a timely manner. Updates should be provided to the referring provider, allowing them to effectively monitor their patient's progress and outcomes. According to Marianne Boltz, OD, FAAO, Assistant Professor of Ophthalmology at Penn State Hershey Medical Center, "The key to successful co-management is definitely reciprocal communication. Although one of the most daunting and time-consuming tasks, inter-professional communication will pay off exponentially in terms of providing superb patient care and growth for your practice."[9]

Where do we go from here?

As vision rehabilitation specialists, we understand not only the disease process, but the extent to which it is affecting our patients' lives. In order for the cohesive nature of interdisciplinary co-management to be successful, we strongly believe that someone must take the leading role. Who is going to take this role has yet to be determined. Nonetheless, our challenge to the vision rehabilitation community is to determine who will be the quarterback of our patients' care. Are we going to wait to see which leader emerges, or will we decide among ourselves who would be in the best position to serve this important role? One thing that is certain, strong communication is not only needed, but required, in order to establish an effective interdisciplinary model with mutual respect and humility being equally important contributing factors.

Dr. Whitley is the Director of Optometric Services at Virginia Eye Consultants in Norfolk, Virginia, a tertiary referral care center. He is an adjunct assistant clinical professor at Pacific University College of Optometry, Pennsylvania College of Optometry and Southern California College of Optometry. Email Dr. Whitley at **wwhitley@vec2020.com.**

Saysha Blazier is the president of the American Optometric Student Association and forth-year optometry student at the Southern California College of Optometry.

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8. Personal interview with Jeff Michaels, OD, FAAO.
9. Personal interview with Marianne Boltz, OD, FAAO.

GUEST COLUMN

Laura E. Dreer, PhD

Addressing the Unmet Mental Health Needs in Low Vision Rehabilitation: A Multidisciplinary Effort

Laura E. Dreer, PhD

Department of Ophthalmology
University of Alabama
at Birmingham

"...there is great room for improvement for meeting the mental health needs of patients and families adjusting to vision loss."

Laura E. Dreer, PhD, Jennifer T. Scruggs, MD, & C. Douglas Witherspoon, MD
Department of Ophthalmology, University of Alabama at Birmingham

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It is well documented that living with low vision often results in a variety of functional changes that can have profound implications on the lives of persons affected by vision loss, as well as their families. Unfortunately, traditional models of low vision rehabilitation and eye care services in general have often focused primarily on treating a person's visual status (i.e., curing or restoring vision, delaying disease progression, refraction), functional changes impacted by vision loss (i.e., reading, writing, self-care), and/or a combination of both with less of an emphasis on addressing the emotional consequences associated with vision loss.

While emotional reactions related to adjustment may vary and fluctuate over time, research has repeatedly shown that a subset of individuals with low vision and their families are at risk for elevated depression and other negative consequences associated with vision loss.[1-5] Despite the fact that emotional distress and other more serious mental health problems such as clinical depression are treatable conditions, the mental health needs of persons with low vision and their families often remain undetected, and are thereby left untreated in traditional low vision rehabilitation services.[6] Emerging contemporary approaches, which provide a more multidisciplinary focus aimed at treating all aspects of a person's functioning (physical, functional, and emotional well-being) affected by vision loss, are vital in order to improve eye care and rehabilitation services—and ultimately enhance overall quality of life for persons living with low vision as well as their families.

The Role of Mental Health Providers in Low Vision Rehabilitation

In order to minimize the disparity between low vision rehabilitation services and the unmet mental health needs of patients, several strategies can be employed. Ideally, the most effective strategy would be to incorporate mental health services into routine low vision rehabilitation and general eye care clinics as part of providing comprehensive services. Mental health care providers are well-trained to deliver a variety of services such as performing clinical diagnostic interviews to assess emotional functioning, psychological testing, individual psychotherapy, family-based therapy, group therapy, consultation, structured support groups, and neuropsychological assessment. This type of model has been well-integrated into other established rehabilitation team approaches for treating the complex needs of persons and families living with chronic health conditions (i.e., traumatic brain injury, stroke, blind rehabilitation in Veteran Administration Medical Centers, primary care) and the benefits of such services on health outcomes have been well documented in the literature.[7, 8, 9]

A large body of research has repeatedly demonstrated the benefits of psychotherapeutic interventions on health outcomes and quality of life among persons and their families adjusting to chronic health conditions.[10-15] Many evidence-based psychotherapeutic interventions such as problem-solving therapy (PST), behavioral activation, and acceptance and commitment therapy (ACT) stem from a cognitive-behavioral framework designed to influence the interaction between a person's cognitions (thoughts), emotions (feelings), and behaviors regarding their problems. As such, this perspective espouses that a person's "thoughts" or ways of interpreting situations can cause emotional distress or result in problems.

Likewise, certain behaviors such as avoidance of situations or impulsivity can also exacerbate distress. Therefore, the main goal of most cognitive behavioral therapy (CBT) is to train individuals in how to challenge or replace maladaptive thinking or unrealistic cognitive appraisals with more realistic or adaptive appraisals of their situations or circumstances. Subsequently, behaviors are also challenged in CBT and replaced over the course of several sessions. Interventions are systematically implemented by a trained mental health professional in a time-limited fashion (typically 6-12 sessions depending upon approach and problems). CBT approaches typically involve an active, collaborative effort between the mental health care provider and the individual, with homework assignments in between sessions for individuals to practice the implementation of new skills, such as communication strategies, self-management and problem-solving skills. Psychological and neuropsychological services delivered by trained

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mental health service providers also assist in identifying information related to potential treatment-interfering behaviors like dysfunctional family patterns, motivation and readiness for treatment, cognitive deficits, personality issues and substance abuse, and assist with providing information related to treatment planning for rehabilitation services. Thus, mental health service providers can play a significant role in the following aspects of low vision rehabilitation.

I. Formally assessing or screening problems related to emotional adjustment
II. Ameliorating emotional distress related to living with vision loss
III. Motivating persons for low vision rehabilitation interventions
IV. Improving health behaviors (adherence to treatment regimens)
V. Determining one's cognitive capacity to participate in low vision rehabilitation treatment strategies such as bioptic driving training, eccentric viewing, PRL training
   a. ability to learn and process new information efficiently
   b. ability to recall aspects of training
   c. ability to demonstrate flexibility in thinking
   d. ability to react quickly
   e. ability to continue performing important tasks in everyday living (fitness to drive)
VI. Providing cognitive rehabilitation to maximize learning new strategies
VII. Improving family functioning and relationships strained by vision loss
VIII. Addressing functional issues and implementing environmental changes (systematic behavioral modification approaches)

Strategies for Addressing Mental Health Issues in Low Vision Rehabilitation

Screening Measures

Eye care providers, along with other low vision health care professionals such as occupational therapists, rehabilitation counselors and orientation and mobility specialists, can also play an integral role in detecting adjustment problems and referring at-risk patients and families for mental health services. A number of strategies for evaluating distress and adjustment problems are at the disposal of low vision rehabilitation providers who do not have specialized training in mental health. One recommended strategy is to employ brief, standardized psychosocial screening measures (paper and pencil).

Many widely used measures are available to quantify level of risk for distress and other more serious problems (i.e., depression; see Dreer & Broadfoot, 2008)[16] and can supplement clinical interviews. These types of instruments can also be used as outcome measures for evaluating the impact of low vision rehabilitation interventions on emotional well-being.

Most instruments are brief and can be easily administered in busy clinics. This type of structured approach can also open the door for discussions regarding emotional adjustment and serve as a lead-in if the person's score appears to fall within an at-risk range.

Attention to Patient and Family Communication Styles

A second strategy might include paying particular attention to patient/family communication styles including both verbal and non-verbal information conveyed during examinations and rehabilitation sessions. For instance, low vision rehabilitation providers need to be attuned to non-verbal signs of distress (tearfulness, crossed arms, fidgeting, sighing, shaking head or rolling eyes at feedback, clenching fists, missed appointments/constant cancellations and rescheduling of sessions) as well as verbal signs (tone of voice, negative thinking, expression of hopelessness or distress). Both verbal and non-verbal cues can provide important clues to a person's current emotional functioning and motivation for treatment. Positive findings obtained from standardized psychosocial screening measures, along with provider recognition of patient/family distress, should be immediately followed up with a discussion between the patient/family and provider.

Provider Interpersonal Communication Skills

Provider interpersonal communication skills represent yet another type of strategy that can aid in promoting patient self-disclosure and gaining trust. Verbal skills, such as empathic or active listening, reflection of meaning and emotions, matching the patient's communication style, paraphrasing and use of open-ended questions, can often encourage patients and families to open up about their adjustment process.

Closed-ended questions can also help obtain specific facts or bring greater focus to the line of questioning. Provider non-verbal skills (open posture, smiling, eye contact) can also foster provider-patient communication. These types of basic interpersonal skills can go a long way in establishing rapport and opening conversations regarding emotional well-being. For example, acknowledging and validating patient and family feelings is often something that is not routinely conveyed in busy eye care clinics. Thus, validating distress and expressing concern will help to more effectively communicate provider empathy and normalize reaction(s). Provider-patient discussion and education regarding the impact of vision loss on emotional well-being and quality of life may open the door to connecting patients and families in crisis to appropriate mental health services.

Patient Education and Referral to Mental Health

Once the door is opened, providers can do much to help prepare at-risk patients or families through education about what to expect once a referral is made. The first step should involve a discussion as to why they are being referred and the provider's concerns. Normalizing the process can tremendously help patients and families feel a sense of relief ("I'm not crazy after all") and promote an understanding that such a referral is a routine part of providing comprehensive treatment. It is important to keep in mind that oftentimes patients have never been to a mental health care provider, therefore a discussion as to what to expect can help minimize any potential stigma or fears (i.e., possibility of being in treatment for years). Providers can also help by informing patients and families that psychotherapy is short-term, action-oriented, and involves training in specific skills to enhance their ability to cope.

Consultation

When providers are unclear as to the appropriateness for referring a patient/family to mental health services, consultation with a mental health provider may assist in such determinations. Consultation may vary from a brief telephone call between the low vision provider and the mental health

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professional, an in-person assessment of patient/family emotional functioning, and/or telephone call by the mental health professional to the patient and/or family.

In summary, the take-home message is that there is great room for improvement for meeting the mental health needs of patients and families adjusting to vision loss who are at a disproportionately higher rate for depression and other problems than those in the general population. Detecting and appropriately treating the mental health needs of patients and their families needs to be better integrated and coordinated in low vision rehabilitation and general eye care services similar to other established rehabilitation models. Low vision rehabilitation providers without formal training in mental health can play a critical role in recognizing the impact of vision loss on emotional well-being and ensuring that patients and families at risk have access to such services and are referred to mental health services when appropriate.

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Michael F. Marmor, MD
David J. Marmor, MFA

Simulating Vision and the Implications of Macular Disease

Michael F. Marmor, MD, *Department of Ophthalmology, Stanford University Medical Center, Stanford*

David J. Marmor, MFA, *Filmmaker, Pasadena, California*

Abstract

Purpose: Representations of macular disease are useful for physician and patient education, but conventional photographs do not effectively show the impact of macular disease.

Methods: Computer simulations, using Adobe After Effects, adjust images to different parameters, including visual acuity, eccentric blur and scotomas.

Results: Images with progressive peripheral blur show the nature of normal fixated vision for tasks such as reading, facial recognition and walking in the street. Superimposed scotomas illustrate the impact of macular disease dramatically, as there is no surrounding region of clarity.

Conclusions: These new visual simulations illustrate the impact of macular disease more realistically than conventional photographs. They are instructive to both practitioners and patient families in showing the effect of visual loss on real-life activities.

A normal view of the world has been simulated for millennia in paintings and photographs. And they are valid representations insofar as a normally-sighted individual can scan the world to examine each detail with clarity. In this scheme of representation, macular disease is typically simulated as a hazy or gray spot in the center of the picture, and many variations of this approach have been used for physician and patient education. However, visual acuity is not constant across the retina. Truly crisp vision is obtained only from central fovea, comprising about 1 degree of central field. Thus, at any moment of time, our view of the world is quite different from a typical photograph. What we see during fixation is a small island of clarity amidst a scene that grows

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Michael F. Marmor, MD

Department of Ophthalmology, Stanford University Medical Center, Stanford

Michael F. Marmor, MD, is Professor of Ophthalmology, Department of Ophthalmology, Stanford University Medical Center, Stanford. Dr. Marmor's clinical focus is in medical retinal diseases including retinal dystrophies, macular dystrophies, toxic retinopathy, disorders of retinal function such as night or color blindness and unexplained visual loss. His current research interest areas include the physiology and pathophysiology of retina and pigment epithelium (RPE) focusing on mechanisms that control fluid movement across the RPE, and the adhesion between retina and RPE. Recent collaborative work has included considering a means of replacing Bruch's membrane or RPE in diseased eyes, and the development of a retinal prosthesis.

grows progressively less recognizable from the center outward. Unfortunately, representations in this manner are not readily available in the clinical ophthalmologic literature.

Many studies have measured visual acuity[1-6] (and other visual functions) from the fovea outward, but few have been published in print or via the web[5, 7-10] and there was virtually nothing in the ophthalmological literature before our recent report.[11]

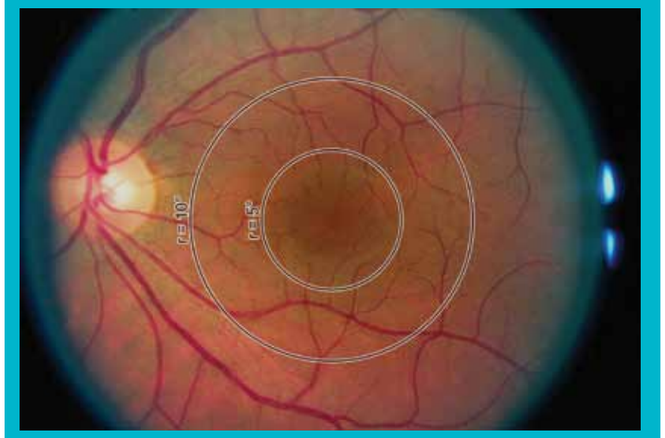

Figure 1 Fundus photograph with circles showing approximate location of 5 degree and 10 degree eccentricity.[11]

That report was neither a review nor a study of the properties of eccentric vision, but merely an attempt to bring this mode of visual simulation to the attention of the vision care community and patient families.

METHODS

Eccentric Visual Acuity

Since our purpose is solely illustrative and clinical, our images are based on eccentric visual acuity values that are slightly below those from experimental reports 1-6 on healthy young subjects (Table 1).

Computer Modeling

The software used for these simulations was custom-designed using Adobe After Effects CS3 (Adobe Systems Incorporated, San Jose, California), with a resolution-independent, acuity-based blur algorithm.[11] This allowed us set parameters that inform the system of the real-world size of the scene represented in the image, the viewing distance and the view angle. Eccentricity fall-off was simulated using the values in Table 1. The system can simulate a variety of complex effects, including scotomas.

RESULTS

Figure 1 shows a fundus image with superimposed 5 degree and 10 degree eccentricity circles to serve as a point of reference when viewing the photographic simulations.

Reading

Figure 2 shows three views of a page of print, sized so that the image shows the correct visual angle if the page is held 14 inches from the eye (a typical reading distance). The first is a conventional photograph that illustrates the clarity with which we see words while scanning a page in normal fashion. The second simulates our view at one moment in time, looking at the center of the page. We see sharply only in the very center, and by 2.5 degree eccentricity, words become difficult to decipher. Note that this *simulated* image (and all of those that follow) are intended to be viewed in a normal fashion, i.e. scanned as one would look at a conventional photograph. If you fixate on the simulations, then your own peripheral blur adds to that of the simulated image.

The third image shows the simulated view with a small, dense central scotoma extending to 2 degree eccentricity. Placing a scotoma in the center of a conventional photograph demonstrates the size of a blind spot, but not its full psychological effect because the rest of the photograph is clear. In our simulation, the impact on a patient is much more evident: without central clarity, a patient can barely make out the surrounding fuzzy letters. As noted above, these simulations are intended to be viewed by normal-sighted individuals (professionals or patient families). Patients with macular disease will not find these illustrations to be accurate since their scotomas add to the eccentric blur of the simulation.

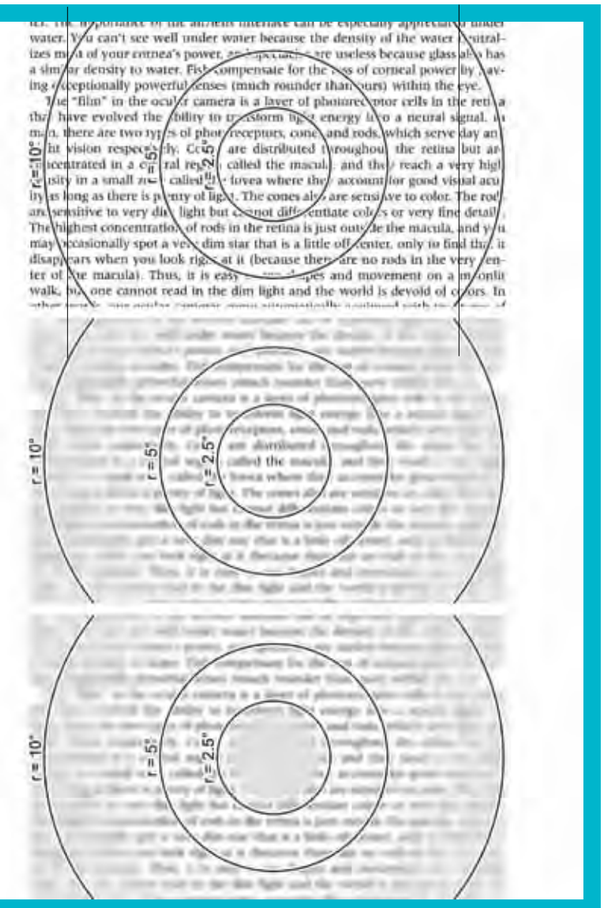

Figure 2 Page of print imaged in three different ways. **TOP:** Conventional photograph as we see the print in full clarity by scanning over the page. **MIDDLE:** Simulation with progressive peripheral blur, showing how the page appears at any one moment of fixation. **BOTTOM:** Same simulation with a dense central scotoma extending to 2 degree eccentricity. The eccentricities that are shown will be correct if the image is viewed 14 inches from the page.[11]

Faces

Figure 3 shows a similar set of three images for a group of faces. The 2 degree scotoma totally obscures facial details of the central subject, but still allows some recognition of people off-center (even if not with total clarity). One can achieve proper viewing angle by holding the page 9 inches from the eye.

Street Scene

Figure 4 shows a similar set of three street scene images. As with the faces, proper viewing angle can be achieved by holding the page 9 inches from the eye. The scotoma prevents reading a small sign or recognizing a face, but has surprisingly little effect on general orientation or mobility.

Maculopathy

Figure 5 shows the same images with a larger zone of dense maculopathy (extending to 5 degree eccentricity). The impact of this scotoma on visual function is much more evident here than with conventional photographs that leave the surrounding areas clear, because there is no escape from the devastating effect of the disease. One can appreciate why orientation and ambulation are less affected than reading, even though recognition of faces and street signs may be lost.

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Figure 3 *View of people that are 9 feet away. The sequence of images is the same as in Fig. 2. To match the eccentricities on the image, the page must be 9 inches from the eye.*[11]

Figure 4 *Street scene in San Francisco. The sequence of images is the same as for Fig. 2. The eccentricities will be correct with the image 9 inches from the eye.*[11]

"What we see during fixation is a small island of clarity amidst a scene that grows progressively less recognizable from the center outward."

DISCUSSION

There is no "best" representation of vision. Ordinary photography shows a clear world everywhere, which is what we perceive as our eyes scan about. Representations with eccentric blurring show the properties of our vision as we fixate. We believe this representation is more realistic for emphasizing the dilemma faced by patients who have no alternative once foveal perception is damaged.

Some readers may note that artists and others with vision loss and maculopathy have often portrayed their own perceptions as either a uniformly blurred image,[12] or as a blur spot in the middle of the picture.[13] These portrayals are to be expected, given that we routinely photograph or draw the world as it appears through scanning, and in ordinary life we do not stop to think about poor resolution off-center (any more than we think about where our visual field ends). Some perceptive individuals with maculopathy have recognized this issue and given descriptions that echo the effects shown in this paper: Georgina Kleege, a novelist and college English instructor with long-standing Stargardt disease, wrote,[14] *Ophthalmology textbooks predict that people with macular degeneration will, in fact, see a black (or perhaps white) hole in the middle of what they're looking at. …But this is not exactly what I see. …Normally, I am more or less unaware of my blind spot. Or else I disregard it. …When I walk, my lack of central vision is less noticeable because it is less necessary. My blind spot precedes me like a giant flying jellyfish. Large objects—fire hydrants, people, cars—fall into it several yards away, then reappear a few feet in front of me.*

Our new representations of macular disease show directly why reading is severely compromised by maculopathy. And they show why ambulation is not (since most objects in a street scene are still easy to see with moderate eccentric blur). This type of imagery provides insight into both normal vision and disease, and would serve well in educational material for both practitioners and patients.

References

Envision Conference 2010 Research Highlights

Envision Conference 2010 marked a new standard in quality and variety of research presentations. Forty-five individual research sessions were presented in eleven topically organized research panels and symposia, ranging in subject matter from quality-of-life evaluation and research findings on employment to perceptual filling-in and assistive technology research applications. Included here are some highlights from this year's research sessions.

Thursday, September 22

The first day of Envision Conference 2010 got off to a great start with a research session entitled **Mobility and Safety**, moderated by Shirin Hassan, PhD, BAppSc. This session was a collection of research presentations on issues including: *How Much of a Safety Zone Do Pedestrians Incorporate Into Their Street Crossing Decisions* presented by Hassan; *Prosthetic Vision: An Overview of the Technology and Challenge for Rehabilitation* by Duane Geruschat, COMS, CLVT, PhD; and *Home Safety: Perspectives of Experts and Adults with Low Vision* presented by Beth Barstow, OT, and Deborah Bennett, OT.

The research session **Perceptual Filling-In**, moderated by Walter Wittich, PhD, generated tremendous interest as evidenced by it being standing-room only. Presentations were given on issues such as *Visual System Adaptation (Neuroplasticity) to Central Scotomas* by Ron Schuchard, PhD; *Perceptual Filling-In and Reading With a Central Scotoma* by Josh Pratt, PhD candidate; and *Filling-In of Retinal Scotomas: Evidence of Cortical Plasticity?* by Michael Crossland, OD, PhD. Presentations were followed by discussions of which processes are defined as perceptual filling-in versus which are not, and the relationship between neuroplasticity and those processes.

Low Vision Research Network (LOVRNET), moderated by Judith Goldstein, OD, rounded out the first successful day of Envision Conference 2010 with presentations on baseline traits and clinical outcomes measures in one of the largest multi-site clinical research studies conducted to date in the United States.

Friday, September 23

On Friday, research sessions continued the theme of applied research and quality-of-life considerations that began on Thursday with research sessions **Research Panel on Employment** moderated by Deborah Gold, PhD, and **Quality of Life**, moderated by Robert Massoff, PhD.

While many excellent presentations were given in each of these research sessions, the highlight of the day was **Reorganization of Visual Cortex in Macular Degeneration: Implications for Rehabilitation** moderated by the 2010 winner of the **Envision Award in Low Vision Research**, Gordon Legge, PhD. Presentations on *Reorganization of Visual Processing in Macular Degeneration* by Chris Baker, PhD; *Visual Rehabilitation of Macular Degeneration Patients Alters Reorganized Maps of the Visual Cortex* by Keith Main, PhD; and *Incomplete Cortical Reorganization in Macular Degeneration* by Tingting Lui, PhD, are just a sampling of the excellent talks organized by Dr. Legge for this session.

Saturday, September 24

The excellent research sessions on the final day of Envision Conference 2010 provided plenty of reason to stay to the end, as some of the most intense interest and animated discussions took place on Saturday.

Reading Panel, moderated by Donald Fletcher, MD, provided an early start to the last day of the conference with presentations on *The Role of Attentional Control and Vision on Reading Comprehension* by Lisa Mauney, PhD Candidate; *Reading Rehabilitation of Individuals with AMD* by William Seiple, PhD; and *Low Vision Intervention Trial II: A Comparative Effectiveness Study* by Joan Stelmack, OD.

Retinitis Pigmentosa: Still a Challenge, moderated by Olga Overbury, PhD, provided a series of presentations on varied aspects of RP including *Current Research in Retinitis Pigmentosa* by David Birch, PhD; *Photopsias Associated with Perceived Stress and Mood States in Retinitis Pigmentosa* by Ava Bittner, OD; *Retinitis Pigmentosa: The Psychosocial Side of the Disorder* by Nathalie Duponsel and others.

Many attendees were seen hurrying between rooms for sessions **Retinitis Pigmentosa: Still a Challenge** and **Assistive Technology Research Applications**, moderated by John Brabyn, which ran concurrently. During this session, Volodymyr Ivanchenko, PhD, presented *Computer Vision-Based Clear Path Guidance for Blind Wheelchair Users*, and Aliasgar Kutiyanawala, PhD candidate, shared *An Eyes-Free Vision-Based UPC and MSI Barcode Localization and Decoding Algorithm for Mobile Phones*. Finally, the reason for much scurrying between rooms was John Brabyn's retrospective on *Assistive Technology Development Problems: Lessons from a Career*, which detailed his personal experiences and insights in the field of assistive technology research over his long and distinguished career.

The most intense discussion and debate of the research sessions was sparked in one of the last of the conference, **Preferred Retinal Locus**, moderated by Michael Crossland, PhD. Many quality presentations were made relating to this field of intense interest including *What is the Preferred Retinal Locus* by Crossland; *Observations on the PRL* by George Timberlake, PhD; *Is Retinal Image Stabilization Beneficial for Acuity and Reading Performance?* by Antonio Macedo, OD, and *Coordination of PRL and Pen During Writing Tasks* by Rebecca Bothwell, OT. Intense discussion took place between the gathered professionals over the specific definition of PRL, as well as whether there are different functional PRLs and how to define them. In the end, the necessity for clarification and consistent usage of terms in the field was agreed upon by all.

As can be seen from these brief highlights, the quality, relevance, variety and number of this year's research sessions were the best to date, and next year promises to be even better as Envision Conference 2011 moves to St. Louis, Missouri, September 21-24. Make your plans to attend and present at this innovative one-of-a-kind, multi-disciplinary, low vision research event.

Envision Conference Awards

Judith A. Goldstein, OD, FAAO, was nominated and awarded by her peers the 2009 Envision "Excellence Through Collaboration" Award during the opening session of Envision Conference 2010. Dr. Goldstein was commended for her work to provide collaborative leadership in the multi-disciplinary low vision clinical study of rehabilitation outcomes of patients seen within the Low Vision Rehabilitation Outcomes Study (LVROS). Dr. Goldstein is Chief of Low Vision Clinical Services and directs clinical and teaching activities at the Wilmer Eye Institute at Johns Hopkins, where she provides low vision rehabilitative care to patients and participates in clinical research.

Gordon E. Legge, PhD, was awarded the 2010 Envision Award in Low Vision Research. The award is presented each year to a mid-career senior investigator in low vision and vision rehabilitation research. Dr. Legge is on the faculty of the University of Minnesota where he serves as the Director of the Minnesota Laboratory for Low Vision Research and as a professor of psychology and neuroscience. He is currently the Distinguished McKnight University Professor. Dr. Legge's research focuses on the role of visual perception and cognition, as well as the roles of vision in reading, spatial navigation and object recognition, with particular interest in problems encountered by people with low vision.

Envision Conference 2010 Provides Opportunity for Advocacy *(cont. from page 1)*

Attendees chose from 56 clinical education sessions and 11 low vision research sessions, each presented by leaders in the field. A total of 120 hours of continuing education units were offered through ACCME, ACVREP, AOTA, COPE and CRCC, affirming the multi-disciplinary nature of the conference.

"I always enjoy the Envision Conference. Seeing colleagues present new data for the first time emphasizes how influential the Envision Conference research sessions are."

- Michael Crossland, PhD, London, UK

The focus of Envision Conference 2010 was ***"Excellence in Advocacy."*** Two plenary presentations represented the theme. The **"Excellence in Advocacy"** Keynote was presented by Kara Gagnon, OD, FAAO. Dr. Gagnon spoke on the topic of veterans of the Iraq and Afghanistan wars who suffer traumatic brain injury (TBI). She was joined by Jeffrey Mittman who shared his dramatic, inspiring story of injury and his road to healing through rehabilitation. The **"Excellence in Advocacy"** Symposium included representatives from nationally recognized governmental and non-governmental

"The Envision Conference was the perfect place to learn new research and techniques, network with other professionals and have a great time interacting. The sessions offered covered a variety of useful topics. I can't wait to attend next year."

- Amy Elliston

organizations that share common core principals but unique missions in preventing blindness – education for both the public and healthcare providers, promoting best practices in vision care, and advocacy on behalf of people who are blind or visually impaired. The panel included Mark Wilkinson, OD, FAAO, who represented the National Eye Institute's (NEI) National Eye Health Education Program (NEHEP), William Schmidt, CEO of Foundation Fighting Blindness, and Andrea Densham, Vice President of Public Health and Government Affairs at Prevent Blindness America.

Envision Conference 2011

Plans are underway for Envision Conference 2011. Register today and/or submit your clinical education or research proposal by visiting the Envision Conference website, **www.envisionconference.org**. Register by July 8, 2011 to save $100 off regular registration.

"Envision Conference is loaded with excellent opportunities for learning and interaction, and is always held at a top notch facility."

- Envision Conference 2010 attendee

Room Block is Open

The Envision Conference room block at the Hilton St. Louis at the Ballpark is open. To reserve your room at the group rate of $139 a night, contact the hotel at **1-877-845-7354** or visit the Envision Conference group page at **www.hilton.com**. Be sure to mention that you are with the Envision Conference group to secure the group rate. Please book your room early; this rate is only valid until ***August 28, 2011,*** or until the Envision block of rooms sells out—whichever comes first.

Important Dates

September 28, 2011
Online Registration and Submissions Open

March 28, 2011
Deadline for Clinical Education and Research Submissions

April 29, 2011
Clinical Education and Research Presentation Selection Notification

July 8, 2011
Early-Bird Registration Deadline

Deadline for Presentation Media and Handouts

July 15, 2011
Deadline for Advance Price Exhibitor Registration

September 21 - 24, 2011
Envision Conference 2011
at the Hilton St. Louis at the Ballpark, St. Louis, MO

ENVISION Vision Rehabilitation

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610 N. Main, Wichita, KS 67203
(316) 440-1600
www.envisionrehab.com
Servicios bilingües disponibles:
(316) 440-1660

To submit an article or case study to be considered for publication in *Visibility*, please contact Michael Epp, Director of Professional Education, (316) 440-1515 or michael.epp@envisionus.com.

Continuing Education Needs Assessment

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U P D A T E

Envision strives to provide industry-leading continuing education opportunities for all professionals in the vision rehabilitation and research fields. We need your help. Your participation in the Envision Continuing Education Needs Assessment will help us build a better curriculum for our continuing education opportunities and aid in accreditation for such events. You can take the brief survey by visiting **http://www.surveymonkey.com/s/EnvisionCE**.

If you have any questions or additional thoughts on continuing education through Envision, please contact Michael Epp, Director of Professional Education, at **(316) 440-1515** or **michael.epp@envisionus.com**.

Envision Low Vision Grand Rounds Calendar

Jan. 13, 2011	The Global, Interdisciplinary Team Approach for the Diabetic Patient
April 14, 2011	Driving and the Low Vision Patient
July 14, 2011	Early Intervention and Pediatric Vision Rehabilitation

Envision Continuing Education Calendar

Feb. 19, 2011	The Role of Occupational Therapy: Diabetes Management and Low Vision Rehabilitation. Wichita, KS. KOTA, AOTA, AADE CE
Sept. 21-24, 2011	**Envision Conference 2011**, St. Louis, MO. Multiple CE Accreditations

For more information, visit the Education and Resources page at **www.envisionus.com**.

About Envision Vision Rehabilitation

The Envision Vision Rehabilitation Center (EVRC) provides comprehensive, multi-disciplinary vision rehabilitation and services for people with vision loss. EVRC's goal is to help patients maximize their independence and realize their best functional vision. EVRC achieves this by offering a comprehensive vision rehabilitation program unique to the needs of each patient. Envision provides vision rehabilitation services regardless of ability to pay. Call to find out about the availability of financial assistance.

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If you would like to share *Visibility* with a colleague, please request a copy from Michael Epp, Director of Professional Education at **michael.epp@envisionus.com** or call **(316) 440-1515**.
Visibility is also available online at **www.envisionus.com/Visibility**.