

Envision

C O N F E R E N C E 09

A multi-disciplinary low vision rehabilitation and research conference

September 9 – 12, 2009

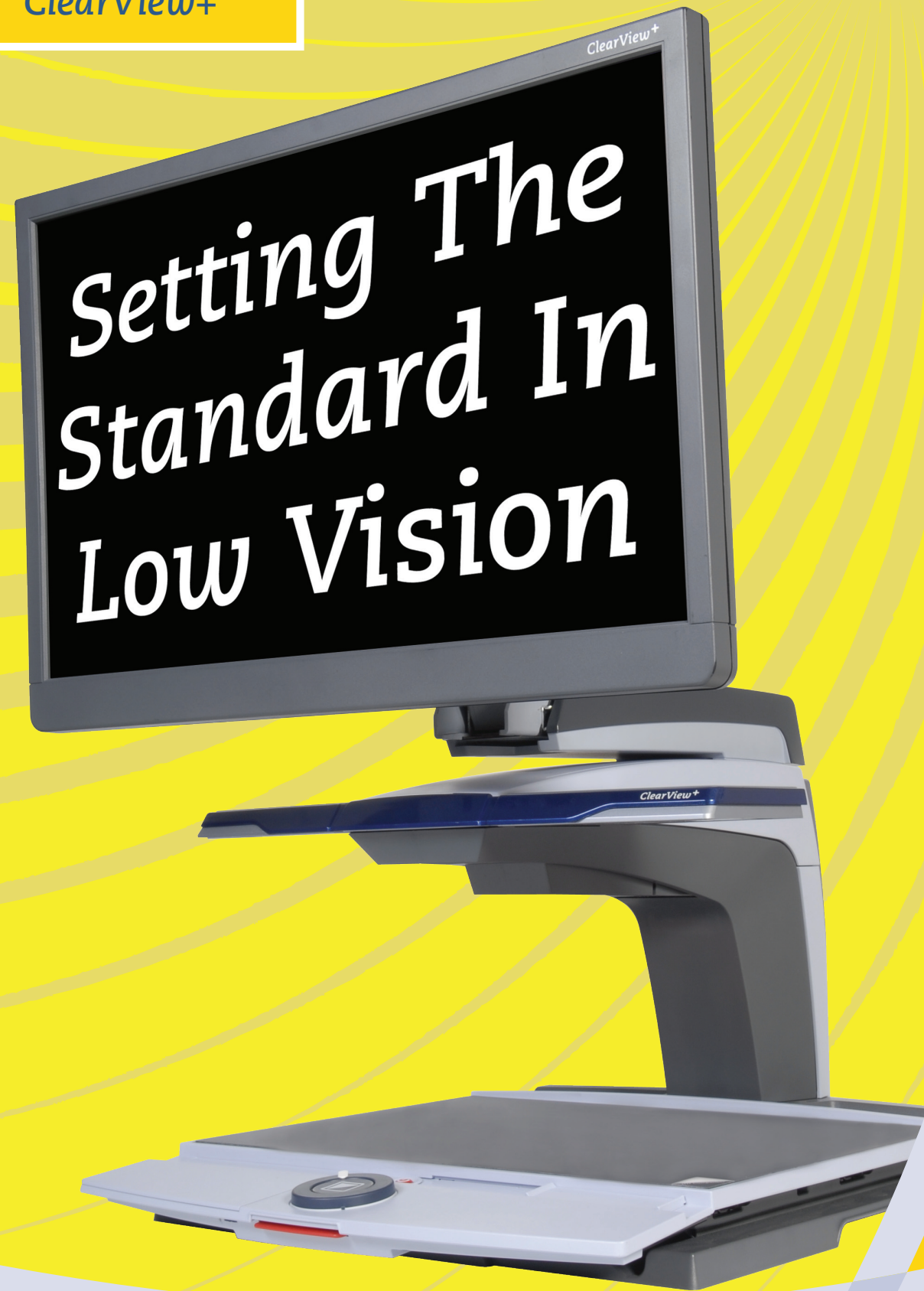
San Antonio, Texas

Westin Riverwalk Hotel

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→ Welcome to Envision 09

A message from Linda K. Merrill, CEO



Welcome to the **Envision Conference**! For the next several days, you will have the opportunity to meet, learn from and network with hundreds of low vision professionals all dedicated to the singular goal of determining the best practices necessary to better serve individuals who are blind or low vision.

The **Envision Conference** is unique. This multi-disciplinary conference features leaders from several low vision backgrounds including

optometrists, ophthalmologists, occupational therapists and teachers of the visually impaired.

The mission of the **Envision Conference** is to improve the quality of low vision care through excellence in professional collaboration, advocacy, research and education. The focus of Envision 09 is “*excellence through collaboration*,” and we are thrilled you will be a part of it.

Envision staff will be wearing host ribbons, and we welcome your feedback and ideas for future conferences.

So mingle, learn and collaborate. ***Enjoy Envision 09!***

Linda K. Merrill, CEO
Envision, Inc.

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→ Meet the Staff

Envision Staff

Linda K. Merrill	CEO, Envision, Inc.
Kent Wilson	CFO, Envision, Inc.
Steve Stambaugh	Vice President, Envision Low Vision Rehabilitation Center
Mary E. Shannon	Vice President, Envision Foundation
Michael Epp	Director, Outreach & Continuing Education
James Nolan	Director of Research
David Austin	Manager, Public Relations & Events
Kelsey Rawson	Communications Associate

Conference Staff

Shauney Wilson	Meeting Planner
Jeff Wilson	A/V and Onsite Speaker Manager
Shawna Lampkin	Registration Manager

→ Meet Your Host



Envision is a not-for-profit organization headquartered in Wichita, KS dedicated to serving individuals who are blind or low vision through employment, low vision rehabilitation, and education.





Tuesday, September 8

3:30 pm - 7:00 pm **Registration Open •** Navarro Prefunction

Wednesday, September 9

7:00 am - 8:00 pm **Registration Open •** Navarro Prefunction

9:00 am - 4:00 pm **Workshops and Research Symposia**
See Schedule-at-a-Glance

Thursday, September 10

7:00 am - 8:00 am **Continental Breakfast •** Navarro
7:00 am - 6:00 pm **Registration Open •** Navarro Prefunction
7:00 am - 8:00 pm **Exhibit Hall Open •** Navarro
8:00 am - 10:00 am **Sessions** *See Schedule-at-a-Glance*
10:00 am - 10:30 am **Morning Coffee Break •** Navarro
10:30 am - 12:30 pm **Sessions** *See Schedule-at-a-Glance*
12:30 pm - 1:30 pm **Lunch on Your Own**
1:30 pm - 3:30 pm **Sessions** *See Schedule-at-a-Glance*
3:30 pm - 4:00 pm **Afternoon Coffee Break •** Navarro
4:00 pm - 6:00 pm **Sessions** *See Schedule-at-a-Glance*
6:00 pm - 8:00 pm **Opening Night Welcome Reception •** Navarro



Schedule Overview

Friday, September 11

7:00 am - 7:45 am **AER Journal Breakfast •** Villa
7:00 am - 8:00 am **Continental Breakfast •** Navarro
7:00 am - 6:30 pm **Registration Open •** Navarro Prefunction
7:00 am - 4:30 pm **Exhibit Hall Open •** Navarro
8:00 am - 10:00 am **Sessions** *See Schedule-at-a-Glance*
10:00 am - 10:30 am **Morning Coffee Break •** Navarro
10:30 am - 12:30 pm **Sessions** *See Schedule-at-a-Glance*
12:30 pm - 2:00 pm **Buffet Lunch •** Navarro
2:00 pm - 4:00 pm **Sessions** *See Schedule-at-a-Glance*
4:00 pm - 4:30 pm **Afternoon Coffee Break •** Navarro
4:30 pm - 6:30 pm **“Excellence through Collaboration” Symposium**
Hidalgo

Saturday, September 12

7:00 am - 8:00 am **Continental Breakfast •** Navarro Prefunction
7:00 am - 6:00 pm **Registration Open •** Navarro Prefunction
8:00 am - 10:00 am **Sessions** *See Schedule-at-a-Glance*
10:00 am - 10:30 am **Morning Coffee Break •** Navarro Prefunction
10:30 am - 11:30 am **Sessions** *See Schedule-at-a-Glance*
11:30 am - 1:00 pm **Keynote Address •** Navarro
1:00 pm - 2:00 pm **Lunch on Your Own**
2:00 pm - 4:00 pm **Sessions** *See Schedule-at-a-Glance*
4:00 pm - 4:15 pm **Afternoon Coffee Break •** Navarro Prefunction
4:15 pm - 5:15 pm **Sessions** *See Schedule-at-a-Glance*



Tuesday, September 8		
3:30 PM	Registration Open, 3:30 pm - 7:00 pm, Navarro Prefuction	
Wednesday, September 9		
7:00 AM	Registration Open, 7:00 am - 8:00 pm, Navarro Prefunction	
	Encino	Sabino
9:00 AM	W1: Eight Simple Steps to Prescribing Near Magnification for Reading: <i>Shirin Hassan, OD, PhD</i>	W2: Hands-On Devices Training and Applied Optics Workshop: <i>David Lewerenz, OD</i>
12:00 PM	Lunch on your own	
1:00 PM	W5: Peripheral Prisms for Hemianopia: Hands-On Fitting Workshop: <i>Eli Peli, OD</i>	W6: Utilizing an Interdisciplinary Team Approach in the Visual Rehabilitation of Patients Affected by a Neurological Etiology: <i>William Park, OD, FAAO</i> <i>Karen Kendrick, OTR/L, CLVT</i> <i>Tyler Hamilton, COMS</i>
Thursday, September 10		
7:00 AM	Continental Breakfast, 7:00 am - 8:00 am, Navarro	
	Registration Open, 7:00 am - 6:00 pm, Navarro Prefunction	
	Exhibits Open, 7:00 am - 8:00 pm, Navarro	

Tuesday, September 8			
Registration Open, 3:30 pm - 7:00 pm, Navarro Prefuction			3:30 PM
Wednesday, September 9			
Registration Open, 7:00 am - 8:00 pm, Navarro Prefunction			7:00 AM
Hidalgo	Madero	Villa	
W3: Helping Patients Successfully Navigate Central Visual Field Loss: Testing and Training: <i>Ronald Cole, MD</i> <i>Marilee Walker, OTR/L</i>	W4: Identifying and Managing Vision Problems in Acquired Brain Injury Patients: A Multidisciplinary Approach: <i>Sandra Fox, OD; Melva Perez Andrews, MBA, OTR, CLVT</i>	Pre1: Health Policy Issues and the Burden of Vision Loss: <i>August Colenbrander, MD</i>	9:00 AM
	Lunch on your own		12:00 PM
W7: Psychosocial Adjustment to Vision Loss: <i>Cathy Deats, PhD</i> <i>James Warnke, LCSW</i>	W8: Learning for Life: Utilizing a Multidisciplinary Approach to Ensure Academic Success for the Child with Visual Impairment: <i>Sandra Fox, OD; Deborah Thompson, TVI, COMS; Susan Waltrip, TVI, COMS</i>	Pre2: Current Trends in Low Vision and Vision Rehabilitation Research: Where and How Should Scientists be Focusing their Efforts? <i>James Nolan, PhD</i>	1:00 PM
Thursday, September 10			
Continental Breakfast, 7:00 am - 8:00 am, Navarro			7:00 AM
Registration Open, 7:00 am - 6:00 pm, Navarro Prefunction			
Exhibits Open, 7:00 am - 8:00 pm, Navarro			

Thursday, September 10 cont.		
	Encino	Sabino
8:00 AM	S1: Fitting Bioptic Telescopes for Driving: <i>Dawn DeCarlo, OD</i>	S2: Stargardt’s Disease: <i>Janet Sunness, MD, ABO</i>
9:00 AM	S4: Help! Grandma Just Swallowed Her Hearing Aid: Home Visit Humor, Hubris, Head Trips and Heartstrings: <i>Lylas Mogk, MD</i>	S5: Pediatric Adjustment to Vision Loss: <i>James Warnke, LCSW</i>
10:00 AM	Coffee Break, 10:00 am - 10:30 am, Navarro	
10:30 AM	S6: Retinitis Pigmentosa: New Treatments on the Horizon: <i>Dawn DeCarlo, OD</i>	S7: Biotic Driving and Neuro-Optometric Rehabilitation: <i>Janet Berthiaume, OT</i>
11:30 AM		S9: Maximum Speed: Increasing Computer Proficiency of Students with Low Vision: <i>Cynthia Bachofer, TVI, CLVT</i>
12:30 PM	Lunch on your own	
1:30 PM	S10: Low Vision for the Newbie: Who, What, When, How: <i>Steve Gill, OD</i>	S11: The E Word: How Do We Get Grandma to Exercise? <i>Annette Babinski, OT, CLVT</i> <i>Mary Ellen Daniel, OT, CLVT</i>
2:30 PM		S13: “It ain’t what we don’t know that gets us into trouble; it’s what we know for sure that just ain’t so.” <i>Lylas Mogk, MD</i>

Thursday, September 10 cont.			
Hidalgo	Madero	Villa	
S3: Conundrum... So Your Visually Compromised Patient Wants to Drive: <i>William Park, OD, FAAO; Tyler Hamilton, COMS; Herb Simon, CDRI</i>	R1: Face Recognition: Effect of Age and Visual Impairment on a Socially Desirable Ability: <i>Olga Overbury, PhD</i>		8:00 AM
Coffee Break, 10:00 am - 10:30 am, Navarro			10:00 AM
S8: Practical Optics and Prescribing Tips for Near Devices: <i>Rebecca Kammer, OD</i>	R2: Newcomers with New Questions for Low Vision Rehabilitation: <i>Laura Walker Renninger, PhD</i>		10:30 AM
			11:30 AM
Lunch on your own			12:30 PM
S12: The Many Faces of Occupational Thera- pists in Low Vision Re- habilitation: Excellence through Collaboration: <i>Melva Perez Andrews, MBA, OTR, CLVT; Nilima Tanna, OTR/L, CLVT; Thuy-Tien (Terri) Nguyen, OTR/L; Gina di Grazia, OTR/L, MA, COMS, CLVT; Susan Zekert, OT, CLVT; Christine Kent, MA, OTR/L</i>	R3: General Research Session 1: Implica- tions for Education, Economics, and Low Vision Rehabilitation: <i>James Nolan, PhD Marilyn Schneck, PhD</i>		1:30 PM
			2:30 PM

Thursday, September 10 cont.		
	Encino	Sabino
3:30 PM	Coffee Break, 3:30 pm - 4:00 pm, Navarro	
4:00 PM	S14: I See What You Are Saying: <i>Joseph Hallak, OD, PhD; Bradley Meltzer, OD; Joseph Bacotti, MD; Chrystyna Rakoczy, OD</i>	S15: In-Clinic and Behind the Training of Bioptic Telescopes for Driving: <i>Jennifer Elgin, OT</i>
5:00 PM		S17: In the Middle: Helping Visually Impaired Patients with their Mid-Range Needs: <i>David Lewerenz, OD</i>
6:00 PM	Opening Night Welcome Reception, 6:00 pm - 8:00 pm, Navarro	
Friday, September 11		
7:00 AM	AER Journal Breakfast, 7:00 am - 7:45 am, Villa	
	Continental Breakfast, 7:00 am - 8:00 am, Navarro	
	Registration Open, 7:00 am - 6:30 pm, Navarro Prefunction	
	Exhibits Open, 7:00 am - 4:30 pm, Navarro	
8:00 AM	S19: TBI Related Vision Loss: From Research to Clinical Practice: <i>Gregory Goodrich, PhD</i>	S20: “Where the \$%#& is that Thing?” Scanning Training for Clients with Low Vision: <i>Colleen O’Donnell, OT, CLVT</i> <i>Marlyn J. Lawrence, OT, CLVT</i>

Thursday, September 10 cont.			
Hidalgo	Madero	Villa	
Coffee Break, 3:30 pm - 4:00 pm, Navarro			3:30 PM
S16: I Can't See Your Nose: The Essential Role and Benefit of Scotoma/PRL Training in Rehabilitating Individuals with Vision Loss: <i>Lori Adamek, OT, CLVT; Annette Babinski, OT, CLVT</i>	R4: How Low Vision Research has Translated into Clinical Practice: <i>Don Fletcher, MD</i>		4:00 PM
S18: Client Satisfaction Measurement: A Useful Service Quality Tool: <i>Deborah Gold, PhD</i>			5:00 PM
Opening Night Welcome Reception, 6:00 pm - 8:00 pm, Navarro			6:00 PM
Friday, September 11			
AER Journal Breakfast, 7:00 am - 7:45 am, Villa			7:00 AM
Continental Breakfast, 7:00 am - 8:00 am, Navarro			
Registration Open, 7:00 am - 6:30 pm, Navarro Prefunction			
Exhibits Open, 7:00 am - 4:30 pm, Navarro			
S21: The Eye and the Brain: A Review of Charles Bonnet Hallucinations and Ring Scotomas for the Vision Rehab Clinician: Mary Lou Jackson, MD, ABO	R5: The Impact and Remediation of Visual Field Loss: <i>Eli Peli, OD</i>		8:00 AM

Friday, September 11 cont.		
	Encino	Sabino
9:00 AM		S22: The Big D: Driver Assessment and Pre-Road Training: A Protocol that Works: <i>Marlyn J. Lawrence, OT, CLVT</i> <i>Wanda Smith, OT, CLVT</i>
10:00 AM	Coffee Break, 10:00 am - 10:30 am, Navarro	
10:30 AM	S24: The MP1 Micro-perimeter as a Clinical and Rehabilitation Tool: <i>Michael Crossland, OD, PhD</i>	S26: Getting in Charge of Getting Around: <i>Cynthia Bachofer, TVI, CLVT</i>
11:30 AM	S27: Why Can't Grandma Shop? Assessing Safety and Accessibility in Communities and Getting Changes Made: <i>Mary Ellen Daniel, OT, CLVT;</i> <i>Lori Adamek, OT, CLVT</i>	S28: A Review of Central Field Assessment Techniques for the Vision Rehab Clinician: <i>Mary Lou Jackson, MD, ABO</i>
12:30 PM	Buffet Lunch, 12:30 pm - 2:00 pm, Navarro	
2:00 PM	S30: Fields, Filters and Fitting the Prescribing Regimen to the Low Vision Patient: <i>Gary Asano, OD</i>	S31: Thinking Outside the Box: How to Grow Occupational Therapy in Your Low Vision Practice: <i>Linda Mangun, OT</i> <i>Tina Menck, COA</i>
4:00 PM	Coffee Break, 4:00 pm - 4:30 pm, Navarro	
4:30 PM	"Excellence through Collaboration" Symposium, 4:30 pm - 6:30 pm, Hidalgo	

Friday, September 11 cont.			
Hidalgo	Madero	Villa	
S23: The Brighter Side of Sunlight: <i>Stuart Richer, OD, PhD</i>			9:00 AM
Coffee Break, 10:00 am - 10:30 am, Navarro			10:00 AM
S25: Diagnosis and Treatment of Atrophic AMD: <i>Stuart Richer, OD, PhD</i>	R6: From the Laboratory to the Clinic: Translating Low Vision Research and Development into Practice: <i>Robert Massof, PhD</i>		
		S29: A Practical Approach to Children's Low Vision: <i>Rebecca Coakley, TVI, CLVT</i>	11:30 AM
Buffet Lunch, 12:30 pm - 2:00 pm, Navarro			12:30 AM
	R7: General Research Session 2: Current Topics in Low Vision and Vision Rehabilitation Research: <i>George Timberlake, PhD; Michael Floyd, MD, MPH</i>	S32: PRL ID & EVT x OT: <i>Orli Weisser-Pike, OT, CLVT, SCLV</i>	
Coffee Break, 4:00 pm - 4:30 pm, Navarro			4:00 PM
"Excellence through Collaboration" Symposium, 4:30 pm - 6:30 pm, Hidalgo			4:30 PM

Saturday, September 12		
	Encino	Sabino
7:00 AM	Continental Breakfast, 7:00 am - 8:00 am, Navarro Prefunction	
	Registration Open, 7:00 am - 6:00 pm, Navarro Prefunction	
8:00 AM	S33: Prism Adaptation for Left Hemispatial Neglect After Stroke or Brain Injury: <i>Kevin Houston, OD; Kia Eldred, OD</i>	S34: Por Tu Familia (For Your Family): American Diabetes Association's Latino Initiatives Health Campaign: <i>Julia Burgos</i>
9:00 AM	S36: Diabetes Epidemic: Family Medicine and Visual Rehabilitation Working Together: <i>Paul Davis, MD; Craig Parman, MD; William Park, OD, FAAO</i>	S37: Untangling the Jungle of Low Vision Credentials: <i>Orli Weisser-Pike, OT, CLVT, SCLV</i>
10:00 AM	Coffee Break, 10:00 am - 10:30 am, Navarro Prefunction	
10:30 AM	S38: Determining Legal Blindness and Visual Disability: <i>David Lewerenz, OD</i>	S39: Development of an Educational Intervention to Improve Access to Eye Care for Hispanic Children: <i>Marcella Frazier, OD, MPH</i>
11:30 AM	Keynote Address, 11:30 am - 1:00 pm, Navarro	
1:00 PM	Lunch on your own	
2:00 PM	S41: Low Vision 101 from Low Tech to High Tech - No Holds Barred: <i>Joseph Hallak, OD, PhD; Marcelle Morcos, MD</i>	S42: A Toolbox for Interventions in the Homes of Patients with Low Vision: <i>Orli Weisser-Pike, OT, CLVT, SCLV</i>
4:00 PM	Coffee Break, 4:00 pm - 4:15 pm, Navarro Prefunction	
4:15 PM	S44: Using Reading Tests to Evaluate Macular Function: <i>Donald Fletcher, MD</i>	S46: A Review of Occupational Therapy Techniques for Treating Ring-Scotomas: <i>Kimberly Schoessow, OT; Leah Gilbert, OT; Michelle Bianchi, OT</i>

Saturday, September 12			
Hidalgo	Madero	Villa	
Continental Breakfast, 7:00 am - 8:00 am, Navarro Prefunction			7:00 AM
Registration Open, 7:00 am - 6:00 pm, Navarro Prefunction			
S35: What Else is Wrong? How to Make it Right: <i>Wanda Smith, OT, CLVT; Colleen O'Donnell, OT, CLVT</i>	R8: Balance, Mobility and Falls: Theory and Practice: <i>J. Vernon Odom, PhD</i>		8:00 AM
			9:00 AM
Coffee Beak, 10:00 am - 10:30 am, Navarro Prefunction			10:00 AM
S40: Which Side are We On? Right vs. Left Brain in Acquired Brain Injury Patients: <i>Kia Eldred, OD; Tonya Mennem, OT, CLVT, SCLV</i>	R9: Accessibility of Small Visual Displays: <i>Ron Schuchard, PhD</i>		10:30 AM
Keynote Address, 11:30 am - 1:00 pm, Navarro			11:30 AM
Lunch on your own			1:00 PM
S43: Visual Changes Following Blast Injuries: <i>Tonya Mennem, OT, CLVT, SCLV; Kia Eldred, OD</i>	R10: The Psychological Impact of Low Vision: <i>Shirin Hassan, OD, PhD</i>		2:00 PM
Coffee Break, 4:00 pm - 4:15 pm, Navarro Prefunction			4:00 PM
S45: Stroke and Vision Rehabilitation: <i>Judith Goldstein, OD</i>			4:15 PM

➔ Special Events



Opening Night Welcome Reception

Thursday, September 10, 6:00 pm - 8:00 pm
Navarro

Please join us and unwind. It's a great chance to meet and network with colleagues and speakers. Two drinks are on us, and there will be plenty of hors d'oeuvres. Get the party started here before heading out to experience the magic of the River Walk.

“Excellence through Collaboration” Symposium

Friday, September 11, 4:30 pm - 6:30 pm • Hidalgo

Increasing the Evidence in Low Vision Rehabilitation – The Time is Now

Duane Geruschat, PhD;
Judith Goldstein, OD;
Mary Lou Jackson, MD,
ABO; Robert W. Massof,
PhD; Sandra Fox, OD



Duane Geruschat



Judith Goldstein



Mary Lou Jackson

With the increasing prevalence of low vision, we are faced with the need to expand the provision of services and concurrently research ways to advance the delivery of care. This program focuses on the development and practice of the Low Vision Research Network (LOVRNET) with presentations made by the network investigators including case studies, data from research and upcoming planned clinical trials, and a call for nationwide collaboration of all low vision rehabilitation providers.

➔ CEUs: ACCME: 2, ACVREP: 2, ANCC: 2, AOTA: 2, COPE: 2, CRCC: 2

Special Events

Envision 09 Mission Keynote

Saturday, September 12, 11:30 am - 1:00 pm • Navarro

The Epidemic of Diabetes – Remediation through Professional Collaboration, Advocacy, Research and Education

Julia A. Burgos, National Director, Latino Initiatives
for the American Diabetes Association



Diabetes is at near-epidemic proportions and diabetic retinopathy is one of the leading causes of blindness in the United States, disproportionately affecting the Latino community. It is our responsibility to ensure that the services and information we provide are accessible to as many people as possible who are affected by this devastating disease.

Julia A. Burgos is the National Director, Latino Initiatives, for the American Diabetes Association (ADA). Julia is responsible for the expansion and oversight of “Por Tu Familia,” ADA’s Latino Initiatives Program. She works to develop programs and train Latino program staff throughout the country to broaden their reach in the Latino community about the seriousness and complications of diabetes.

➔ CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, COPE: PENDING, CRCC: 1

Pre-Conference Research Symposia

Health Policy Issues and the Burden of Vision Loss

Wednesday, September 9, 9:00 am - 12:00 pm, Villa

Moderator: August Colenbrander, MD, Smith-Kettlewell Eye Research Institute and California Pacific Medical Center



The World Health Organization (WHO) is preparing the 11th revision of the International Classification of Diseases (ICD-11). This revision will be a major one, since it is aimed at serving not only the WHO's need for public health statistics, but also the terminology needs for Electronic Medical Records (EMR) and other Health Information Technology (HIT) applications. The WHO has a special interest in defining the

Global Burden of Disease (GBD) as a means to compare the impact of various diseases and to set health policy priorities. For vision, this translates to the Burden of Vision Loss, a topic that is of special importance to vision rehabilitation. This free discussion will address this very important topic.

➔ **Instruction Level:** Intermediate

Objectives:

- 1. Define the Global Burden of Eye Disease.
- 2. Understand the WHO ICD-11 classification of eye diseases.
- 3. Define terminology for EMR and HIT applications.

CEU credits will not be issued for this pre-conference class.

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Current Trends in Low Vision and Vision Rehabilitation Research: Where and How Should Scientists be Focusing Their Efforts?

Wednesday, September 9, 1:00 pm - 4:00 pm, Villa



Moderator: James Nolan, PhD, Envision Low Vision Rehabilitation Center and the University of Kansas Medical School, Department of Ophthalmology

Many trends and practical applications, not to mention funding and the lack thereof, dictate the topics of research chosen by the scientific community. This free roundtable discussion is designed to provide the venue for current

scientists to discuss the relevant issues of study today in low vision and vision rehabilitation science. Topics to be discussed will also include what areas of research may be coming up short today based on inconclusive or contradictory findings and what areas of research hold the most promise for the future.

➔ **Instruction Level:** Intermediate

Objectives:

- 1. Identify current trends in low vision research.
- 2. Identify funding sources.
- 3. Understand practical applications in current low vision research.

CEU credits will not be issued for this pre-conference class.

➔

Workshops

W1: Eight Simple Steps to Prescribing Near Magnification for Reading



Shirin Hassan

Shirin Hassan, OD, PhD
9:00 am - 12:00 pm, Encino

This course will apply the results of low vision research in reading to provide a simple eight-step procedure on how to determine the appropriate amount of magnification required for reading in low vision patients. Information will also be given regarding the different types of optical devices available to patients.

Instruction Level: Intermediate

Objectives:

1. Learn about the factors that affect reading performance with an emphasis on the results of research into low vision and reading performance.
2. Learn about the procedures used for assessing near vision and be given an easy eight-step guide on how to determine the magnification required for reading in patients with low vision.
3. Learn about the various near optical devices available to patients and recognize when each type of device is indicated for prescribing near magnification.

CEUs: ACCME: 2.75, ACVREP: 3, AOTA: 3, COPE: 3, CRCC: 3

W2: Hands-On Devices Training and Applied Optics Workshop

David Lewerenz, OD
9:00 am - 12:00 pm, Sabino

This course is a combination lecture/hands-on workshop that will present the basic optical



David Lewerenz

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principles of low vision devices. Their features, as well as relative advantages and disadvantages, will be discussed. Training tips on the effective use of each category of low vision device will be explained and demonstrated.

Instruction Level: Intermediate

Objectives:

1. Know the basic optical principles of the types of optical low vision devices and learn how to apply a very simple formula.
2. Understand the features and relative advantages and disadvantages of each magnification type.
3. Gain insight into how optical low vision devices work and learn how to effectively train low vision patients in their use.

CEUs: ACCME: 2.75, ACVREP: 3, ANCC: 2.7, AOTA: 3, COPE: 3, CRCC: 3

W3: Helping Patients Successfully Navigate Central Visual Field Loss: Testing and Training



Ronald Cole

Ronald Cole, MD; Marilee Walker, OTR/L
9:00 am - 12:00 pm, Hidalgo

This presentation will review numerous causes of central visual field loss and how they interfere with ADLs. The California Central Visual Field Test, an available, inexpensive and simple technique to assess and document the field loss, will be demonstrated. Participants will use it during the workshop. Objective techniques and protocols for training patients with scotomas and central field loss will be discussed.

A unique guide card technique will be demonstrated, and participants will have a hands-on experience developing their own card.

Instruction Level: Intermediate

Workshops

Objectives:

- 1. Understand different forms of central vision loss and how they impact patient function.
- 2. Objectively demonstrate and record central visual field abnormalities.
- 3. Teach patients adaptations and techniques to help them manage central field loss when performing IADLs/ADLs through a structured protocol and guide card technique.

CEUs: ACCME: 2.75, ACVREP: 3, ANCC: 2.7, AOTA: 3, COPE: 3, CRCC: 3

W4: Identifying and Managing Vision Problems in Acquired Brain Injury Patients: A Multidisciplinary Approach



Melva Pérez Andrews

Sandra Fox, OD; Melva Pérez Andrews, MBA, OTR, CLVT
9:00 am - 12:00 pm, Madero

This workshop will describe the vision problems that occur in the ABI patient as well as demonstrate techniques to identify and evaluate patients with ABI vision problems. Management techniques including optical devices and compensatory strategies will be described, emphasizing a multi-disciplinary approach to rehabilitation for the ABI patient for maximum rehab success.

Instruction Level: Intermediate

Objectives:

- 1. List the vision problems that commonly occur with acquired brain injury including loss of visual acuity, visual field deficits, ocular muscle and accommodative dysfunction, and their effect on rehabilitation.
- 2. Perform screening techniques to identify patients with vision problems in the rehab setting, describe management techniques that can be

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- utilized and recognize when to recommend appropriate referrals.
- 3. Describe the necessary components of a neurological eye examination; describe optical management options for vision problems that occur with ABI as well as compensatory strategies to improve visual functioning.

CEUs: ACCME: 2.75, ACVREP: 3, ANCC: 2.7, AOTA: 3, COPE: 3, CRCC: 3

W5: Peripheral Prisms for Hemianopia: Hands-On Fitting Workshop



Eli Peli

Eli Peli, OD
1:00 pm - 4:00 pm, Encino

Participants will be instructed in the fitting of the press-on prism, first on each other, giving them an opportunity to practice the procedure and appreciate first-hand the optical effect. The volunteer patients will provide the participants an opportunity to measure and appreciate the field expansion in confrontation and in perimetry. The effects of the horizontal and oblique designs will be compared as well. Participants will experience with each other, and then with patients, the image shift effect of the prisms and will practice the reach and touch exercises as instructors and as subjects.

Instruction Level: Introductory

Objectives:

- 1. Understand the theoretical concepts of the peripheral prism design.
- 2. Measure the visual field expansion effect of the prisms using confrontation and other perimetric techniques on patients with hemianopia.
- 3. Gain practical experience of fitting peripheral prisms and training patients how to use them.

CEUs: ACCME: 2.75, ACVREP: 3, COPE: 3, CRCC: 3

Workshops

W6: Utilizing an Interdisciplinary Team Approach in the Visual Rehabilitation of Patients Affected by a Neurological Etiology

William Park, OD, FAAO
Karen Kendrick, OTR/L, CLVT
Tyler Hamilton, COMS
1:00 pm - 4:00 pm, Sabino

This course will discuss the interdisciplinary rehabilitative roles of the practitioner, occupational therapist and orientation & mobility specialist involved in providing care for patients with neurological insult and/or disease, post-trauma vision syndrome (PTVS) and visual midline shift syndrome (VMSS).

Instruction Level: Intermediate

Objectives:

- 1. Recognize common global manifestations of visual dysfunction due to neurological injury and disease.
- 2. Identify evaluation modalities used in treatment of persons with neurological injury or disease.
- 3. Differentiate among intervention strategies provided during the rehabilitative process for neurological patients.

CEUs: ACCME: 3, ACVREP: 3, AOTA: 3, COPE: 3, CRCC: 3



William Park



Karen Kendrick



Tyler Hamilton

Wednesday, September 9

W7: Psychosocial Adjustment to Vision Loss



Cathy Deats

Cathy Deats, PhD; James Warnke, LCSW
1:00 pm - 4:00 pm, Hidalgo

This workshop will introduce a framework for understanding psychosocial adjustment to vision loss and provide skills for the practitioner to relate to the patient/client. The practitioner who understands the dynamics of adjustment to vision loss will make better treatment decisions and facilitate the rehabilitation process.

Instruction Level: Introductory

Objectives:

- 1. Identify the stages of adjustment to vision loss.
- 2. Identify implications for assessment and treatment of persons with vision loss.
- 3. Demonstrate practical skills for working with patients with vision loss.

CEUs: ACCME: 2.75, ACVREP: 3, ANCC: 2.7, AOTA: 3, CRCC: 3

W8: Learning for Life: Utilizing a Multidisciplinary Approach to Ensure Academic Success for the Child with Visual Impairment

Sandra Fox, OD
Deborah Thompson, TVI, COMS
Susan Waltrip, TVI, COMS
1:00 pm - 4:00 pm, Madero

This course is designed to improve communication and understanding among the educational and medical professionals that provide services to children with visual impairments. The function of each discipline and

Workshops

Wednesday, September 9

the information each provides concerning the student’s educational needs will be described. Strategies to improve communication between professionals will be discussed.

Instruction Level: Intermediate

Objectives:

1. Describe the role of the main disciplines that provide specialized services to student with visual impairment, their objectives and the information they provide concerning the student’s functional vision.
2. Become familiar with the educational and medical terminology used by the different disciplines regarding diagnosis, testing methods and results to better understand reports and improve communication.
3. Identify strategies to develop relationships with all of the disciplines involved in formulating the educational plan for the child in order to develop a comprehensive team to better serve students with visual impairment.

CEUs: ACCME: 2.75, ACVREP: 3, ANCC: 2.7, AOTA: 3, COPE: 3, CRCC: 3



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Sessions

Clinical education sessions are listed with **S** session numbers.
Research sessions are listed with **R** session numbers.
Research session abstracts are provided on page 60.

→ Thursday, September 10

S1: Fitting Bioptic Telescopes for Driving
Dawn DeCarlo, OD
8:00 am - 9:00 am, Encino

Bioptic telescopes can enable some people with vision loss to obtain a driver’s license. This course reviews the literature on bioptic driving and teaches the participants how to select candidates for driving, demonstrate the telescopes and appropriately fit and adjust them. This course is complementary to *S15: In-Clinic and Behind the Training of Bioptic Telescopes for Driving*.

Instruction Level: Intermediate
Objectives:

1. Identify appropriate candidates for bioptic driving.
2. Understand the differences between various telescopes available for bioptic mounting.
3. Properly fit and adjust bioptic telescopes for best driving performance and other distance tasks.

CEUs: ACCME: 1, ACVREP: 1, AOTA: 1, COPE: 1, CRCC: 1

S2: Stargardt’s Disease (Macular Degeneration in Young People)
Janet Sunness, MD
8:00 am - 9:00 am, Sabino

This course will describe the visual impairment, clinical manifestations, and natural history of Stargardt’s disease. The types of low vision intervention that may be beneficial will be discussed. A basic understanding of the pathogenesis of the disease and the likelihood of future gene therapy for it will be provided.

Instruction Level: Introductory
Objectives:

1. Describe the natural course of visual impairment from Stargardt’s disease.
2. Understand how low vision intervention may differ from age-related macular degeneration.
3. Understand the likelihood of gene therapy for this condition, probably within the next decade.

CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, COPE: 1, CRCC: 1

Sessions

S3: Conundrum...So Your Visually Compromised Patient Wants to Drive
William L. Park, OD, FAAO
Tyler Hamilton, COMS
Herb Simon, CDRI
8:00 am - 10:00 am, Hidalgo

This course discusses common driving skill deficits seen with mild, moderate and severe vision loss due to ocular and/or systemic disease. Discussions will include necessities of the clinical evaluation, telescopic devices, a biopic telescope loaning program, referral for O&M instruction and a certified driving instructor’s take on driver’s education and the road evaluation.

Instruction Level: Intermediate
Objectives:

1. Understand the epidemiological etiologies of visual impairments concerning driving issues.
2. Identify different rehabilitative modalities involved before the patient.
3. Differentiate the complex strategies in driver’s education and assessments.

CEUs: ACCME: 2, ACVREP: 2, AOTA: 2, COPE: 2, CRCC: 2



R1: Face Recognition: Effect of Age and Visual Impairment on a Socially Desirable Ability
Moderator: Olga Overbury, PhD – School of Optometry, University of Montreal, Montreal, QC
8:00 am - 10:00 am, Madero

8:00 - Face Recognition in Elders with Good Acuity – Marilyn E. Schneck, PhD: Smith-Kettlewell Eye Research Institute, San Francisco, CA

8:20 - Face Recognition and Visual Acuity in Younger and Older Normally Sighted Observers and Patients with AMD – Walter Wittich, MA: Department of Neurology and Neurosurgery - Neuroscience, McGill University, Montreal, QC

8:40 - Factors Underlying Performance on a New Face Discrimination Test – Claire S. Barnes, PhD: VA Rehab R&D Center of Excellence, Atlanta, GA

9:00 - Use of OCT/SLO to Examine Face Recognition by Individuals with Macular Degeneration – Bill Seiple, PhD: Lighthouse International, New York, NY

Instruction Level: Intermediate
Objectives:

1. Identify key concepts of face recognition.

Sessions

- 2. Understand the difficulties elders have recognizing faces at a distance.
- 3. Learn about the application of research results in the clinical context.

CEUs: ACVREP: 2, AOTA: 2, CRCC: 2

S4: Help! Grandma Just Swallowed Her Hearing Aid: Home Visit Humor, Hubris, Head Trips and Heartstrings
Lylas Mogk, MD
9:00 am - 10:00 am, Encino

Therapy training in home settings requires flexibility, adaptability, sensitivity, creativity and sometimes bravery. The collective experiences of seven occupational therapists over 12 years of home visits in metropolitan Detroit – funny, frightening, inspirational, depressing, edifying and frustrating but all educational – provide valuable professional and personal insights.

Instruction Level: Introductory
Objectives:

- 1. Describe the impact of vision loss on patients.
- 2. Explain the dynamic interplay of a home rehabilitation training visit.
- 3. List the challenges and benefits of working in patients’ homes.

CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, CRCC: 1, COPE: 1

S5: Pediatric Adjustment to Vision Loss
James Warnke, LCSW
9:00 am - 10:00 am, Sabino

This session is an overview of special considerations of the pediatric population in the adjustment to vision loss.

Instruction Level: Introductory
Objectives:

- 1. Identify adjustment challenges specific to children with vision loss.
- 2. Know how the child’s developmental stage impacts adjustment to vision loss.
- 3. Apply knowledge of developmental tasks to treatment of children.

CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

S6: Retinitis Pigmentosa: New Treatments on the Horizon
Dawn DeCarlo, OD
10:30 am - 12:30 pm, Encino

Retinitis pigmentosa and related retinal degenerative diseases are common causes of early-onset vision impairment. This course will discuss currently accepted treatments which are thought only to slow the progression, as well as new treatments in clinical trials that may change the way we care for people with hereditary eye disease.

Instruction Level: Intermediate

Sessions

- Objectives:**
- 1. Have a basic understanding of inherited retinal diseases.
 - 2. Have an understanding of how we currently manage these conditions.
 - 3. Have an understanding of investigational treatments that are underway.

CEUs: ACCME: 2, ACVREP: 2, ANCC: 2, AOTA: 2, COPE: 2, CRCC: 2



S7: Bioptic Driving and Neuro-Optometric Rehabilitation
Janet Berthiaume, OTR, CDRS, FNORA
10:30 am - 11:30 am, Sabino

Potential bioptic drivers may not only have low vision, but visual processing, visual perceptual and/or visual spatial orientation deficits. This presentation will discuss the role of occupational therapy and neuro-optometric rehabilitation in bioptic driving addressing

these issues that can affect road performance. This course will demonstrate a multi-disciplinary approach to training bioptic drivers.

Instruction Level: Intermediate
Objectives:

- 1. Develop a general understanding of assessments and skills for driving with bioptics.
- 2. Identify visual/perceptual deficits that may require further assessment by a vision specialist prior to participation in driver rehabilitation.
- 3. Understand the need for a multi-disciplinary team approach to have a successful bioptic driver.

CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

S8: Practical Optics and Prescribing Tips for Near Devices
Rebecca Kammer, OD
10:30 am - 12:30 pm, Hidalgo

Fundamental optics background for a low vision optometrist or ophthalmologist is one of the keys to successful low vision rehabilitation and should not be underestimated in its usefulness. This lecture provides a practical basis for applying optical principles to prescribing when integrated with eccentric viewing training and the timing of device introduction. This presentation will cover low vision exam components and rehabilitation leading up to optical

Sessions

device prescribing, prediction of the expected response to magnification at near, and guidelines for selection of categories of devices based on patient goals and optical principles.

Instruction Level: Intermediate

Objectives:

- 1. Describe the optical principles of various near optical devices.
- 2. Consider practical guidelines about when to prescribe specific devices.
- 3. Manage cases with an appropriate starting point and troubleshoot when patient responses are unexpected.

CEUs: ACCME: 2, ACVREP: 2, ANCC: 2, COPE: 2, CRCC: 2

R2: Newcomers with New Questions for Low Vision Rehabilitation

Moderator: Laura Walker Renninger, PhD –
Smith-Kettlewell Eye Research Institute, San Francisco, CA
10:30 am - 12:30 pm, Madero

10:30 - Timed Instrumental Activities of Daily Living (TIADLs) as an Outcome Measure of Occupational Therapy –
Kim Schoessow, OTD: Massachusetts Eye and Ear Infirmary, Boston, MA

10:50 - Learning and Efficiency in Visual Search Following Simulated Central Loss – Melchi Michel, PhD:
University of Texas at Austin, Austin, TX

11:10 - Quantifying Fixation Selection Efficiency in Age-Related Macular Degeneration – Laura Walker Renninger, PhD: Smith-Kettlewell Eye Research Institute, San Francisco, CA

11:30 - Computer Vision Applications for the Visually Impaired –
Ender Tekin, PhD: Smith-Kettlewell Eye Research Institute, San Francisco, CA

Instruction Level: Intermediate

Objectives:

- 1. Address new issues in low vision rehabilitation.
- 2. Address learning and efficiency related to central vision loss.
- 3. Review computer vision applications for the visually impaired.

CEUs: ACVREP: 2, AOTA: 2, CRCC: 2

S9: Maximum Speed: Increasing Computer Proficiency of Students with Low Vision
Cynthia Bachofer, TVI, CLVT
11:30 am - 12:30 pm, Sabino

The digital revolution, particularly computers, is defining habits and critical skills of the current generation of students. Students with low vision warrant disability-specific instruction in maximizing their accessibility and

Sessions



usability of computers (Chiang, Cole, Gupta, Kaiser & Starren, 2005). A literature search identified studies from two research teams (Douglas & Long, 2003; Scott, Feuer, & Jacko, 2002) focusing on computer tasks and users with low vision. Their research identified the importance of establishing visual profiles, recording response to changes in visual targets, and assessing ergonomic factors. Developing an integrated system, visual and nonvisual, allows students to operate at maximum speed.

Instruction Level: Introductory

Objectives:

- 1. Summarize empirical research investigating computer use by persons with low vision.
- 2. Describe factors that affect the computer performance specific to low vision, including visual function and ergonomic issues.
- 3. Identify a range of visual and non-visual strategies to complete computer tasks efficiently.

CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

S10: Low Vision for the Newbie: Who, What, When, How
Steve Gill, OD
1:30 pm - 3:30 pm, Encino

This lecture will familiarize the novice to low vision with who is a low vision patient, what is involved in a low vision evaluation and the rehabilitation process.

Instruction Level: Introductory

Objectives:

- 1. Identify who is a low vision patient.
- 2. Know the steps involved in a low vision evaluation.
- 3. Learn how the various disciplines interact in the care of the low vision patient.

CEUs: ACCME: 2, ACVREP: 2, ANCC: 2, AOTA: 2, COPE: 2, CRCC: 2

S11: The E Word: How Do We Get Grandma to Exercise?
Annette Babinski, OT, CLVT
Mary Ellen Daniel, OT, CLVT
1:30 pm - 2:30 pm, Sabino

Seniors with visual impairments often reduce their participation in physical activities, with negative impact on their health and wellbeing. This presentation addresses adaptive strategies and community resources the therapist can use to help overcome the physical and psychosocial obstacles to physical activity among seniors with visual impairments.

Sessions

Instruction Level: Introductory
Objectives:

1. Describe the benefits of exercise for seniors with vision loss.
2. List the roadblocks that can prevent participation.
3. Explain how to adapt activities and find community resources.

CEUs: ACVREP: 1, ANCC: 1, AOTA: 1, CRCC: 1

S12: The Many Faces of Occupational Therapists in Low Vision Rehabilitation: Excellence through Collaboration
Melva Pérez Andrews, MBA, OTR, CLVT
Nilima Tanna, OTR/L, CLVT
Thuy-Tien (Terri) Nguyen, OTR/L
Gina di Grazia, OTR/L, MA, COMS, CLVT
Susan Zekert, OT, CLVT
Christine Kent, MA, OTR/L
1:30 pm - 3:30 pm, Hidalgo

Wondering if OTs practice low vision only in low vision rehabilitation clinics? Wondering if you must have special certification to provide low vision services? Currently, there are a variety of settings where OTs practice low vision rehab – they are as diverse as the theories that guide our practice! Come ask questions of the OTs on the panel who practice low vision in different settings.

Learn about their experiences. Learn how it is possible for you to incorporate general principles of low vision in your current setting and how you can work collaboratively with other low vision professionals to provide the ultimate service in low vision rehabilitation.

Instruction Level: Introductory
Objectives:

1. Learn about the diverse places where occupational therapists currently practice low vision and what they did to get there.
2. Learn who occupational therapists in low vision rehabilitation collaborate with and how those relationships were established.
3. Learn about resources available to facilitate implementing low vision rehabilitation into your current therapy setting.

CEUs: ACVREP: 2, AOTA: 2, CRCC: 2



Sessions

R3: General Research Session #1: Implications for Education, Economics, and Low Vision Rehabilitation
Moderators: James Nolan, PhD – Envision Low Vision Rehabilitation Center and the University of Kansas Medical School, Department of Ophthalmology; Marilyn E. Schneck, PhD – Smith-Kettlewell Eye Research Institute RERC, San Francisco, CA
1:30 pm - 3:30 pm, Madero

1:30 - Facing the Challenge of Neurological Vision Loss: Implications for Education – Carolyn Palmer, PhD: Flinders University, South Australia

1:45 - Patterns of Physical Activity Among Youth with Vision Loss: Quantitative and Qualitative Findings – Deborah Gold, PhD: Canadian National Institute for the Blind, Toronto, ON

2:00 - Health State Questionnaires: What do they Say about Low Vision Populations? – Judith Goldstein, OD: Johns Hopkins University, Baltimore, MD

2:15 - Beyond the Ordinary: Interfacing Expanded and Regular Curriculum for Students with Vision Impairment – Carolyn Palmer, PhD: Flinders University, South Australia

2:30 - Exploring Barriers to Vision Rehabilitation Access and Utility

Amongst Seniors from Immigrant Communities – Deborah Gold, PhD: Canadian National Institute for the Blind, Toronto, ON

Instruction Level: Intermediate
Objectives:

1. Address specific aspects and implications of vision loss.
2. Address the educational and economic implications of vision loss.
3. Address the physical activity patterns of various age groups with vision loss.

CEUs: ACVREP: 2, AOTA: 2, CRCC: 2

S13: “It ain’t what we don’t know that gets us into trouble; it’s what we know for sure that just ain’t so”
Lylas Mogk, MD
2:30 pm - 3:30 pm, Sabino

This presentation explores the factors that make up what we experience as full sight, the functional impact of their loss, the shortcomings of legal blindness as a useful parameter and the implications for rehabilitation, with case examples and references to study.

Instruction Level: Introductory
Objectives:

1. List the factors that contribute to full sight.
2. Explain the relevance of PRL

Sessions

position and contrast sensitivity with respect to function.

3. Describe the implications of the various parameters of vision loss for rehabilitation.

CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, COPE: 1, CRCC: 1

S14: I See What You Are Saying
Joseph Hallak, OD, PhD
Bradley Meltzer, OD
Joseph Bacotti, MD, FACS
Chrystyna Rakoczy, OD
4:00 pm - 6:00 pm, Encino

A certain percentage of acquired or traumatic brain injury cases end up with conditions impairing their ability to function, to read or simply to integrate back into society. These impairments could be visual, auditory or a combination of both. A recently developed screening at the Veterans Administration Medical Centers identifies these patients (mainly veterans of Gulf Wars) and brings appropriate techniques to alleviate the problems and re-establish function.

Instruction Level: Introductory
Objectives:

1. Recognize the visual effect of ABI/TBI.
2. Recognize the auditory/vestibular effect of ABI/TBI.
3. Distinguish between the ocular,

vestibular and oculo-vestibular effect of ABI/TBI and apply appropriate rehabilitation techniques.

CEUs: ACCME: 2, ACVREP: 2, ANCC: 2, AOTA: 2, COPE: 2, CRCC: 2

S15: In-Clinic and Behind the Training of Bioptic Telescopes for Driving
Jennifer Elgin, OT
4:00 pm - 5:00 pm, Sabino

This presentation will identify techniques for training drivers in the use of bioptic telescopes for driving. Discussion will include in-clinic training as well as behind-the-wheel training. Case studies will be presented and discussion of audience experiences will be encouraged. This course complements *S1: Fitting Bioptic Telescopes for Driving*.

Instruction Level: Introductory
Objectives:

1. Understand the role of each member of the rehabilitation team.
2. Discuss functional impairments often seen behind the wheel when teaching clients with visual impairments to drive.
3. Discuss techniques for training in the use of the telescope that incorporate ADLs and key training strategies for behind the wheel driver training.

CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

Sessions

S16: I Can't See Your Nose: The Essential Role and Benefit of Scotoma/PRL Training in Rehabilitating Individuals with Vision Loss
Lori Adamek, OT, CLVT
Annette Babinski, OT, CLVT
4:00 pm - 5:00 pm, Hidalgo

The major causes of adult vision loss present variable patterns of loss that compromise function differently. Effective rehabilitation requires recognizing and addressing the patients' individual patterns of loss. Terminology, patterns, functional implications and methods of mapping are presented, highlighting the technique and training benefit of the Foolproof Flashcard Method.

Instruction Level: Introductory
Objectives:

1. Define scotoma, PRL and macular perimetry.
2. Explain the impact on function and rehabilitation of the size, shape and location of the scotoma and the position of the PRL relative to the scotoma.
3. Describe the steps and strategies of performing the Flashcard Method of mapping the scotoma and locating the PRL.

CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

R4: How Low Vision Research has Translated into Clinical Practice
Moderator: Don Fletcher, MD
– Smith-Kettlewell Eye Research Institute, Frank Stein and Paul S. May Center for Low Vision Rehabilitation, California Pacific Medical Center, San Francisco, CA
4:00 pm - 6:00 pm, Madero

4:00 - Techniques Used to Quantify for Research Can also be Valuable in Clinical Low Vision Practice – Don Fletcher, MD: Smith-Kettlewell Eye Research Institute, San Francisco, CA

4:15 - The Effect of Altered Stimulus Luminance on the Size of Scotomas Mapped with the Fletcher Central Visual Field Test – Rebecca Kammer, OD: Southern California College of Optometry, Fullerton, CA

4:30 - Can Patients with a Central Scotoma Develop a Functional Trained Retinal Locus? – Kim Schoessow, OTD: Massachusetts Eye and Ear Infirmary, Boston, MA

4:45 - Impact of Lighting on Visual Function and Occupational Performance – Monica Perlmutter, OT: Washington University, St. Louis, MO

5:00 - Low Vision Rehabilitation for AMD – Dawn DeCarlo, OD: School of Medicine Department of Ophthalmology, Birmingham, AL

Sessions



5:15 - Rescuing the Lesser Eye –
Ron Cole, MD: Sacramento, CA;
Marilee Walker, OT: Sacramento, CA

Instruction Level: Intermediate
Objectives:

1. Understand how research techniques translate into clinical practice.
2. Explore how various research practices can provide clinical benefit.
3. Quantification techniques that have practical applications.

CEUs: ACVREP: 2, AOTA: 2, CRCC: 2

S17: In the Middle: Helping Visually Impaired Patients with their Mid-Range Needs
David Lewerenz, OD
5:00 pm - 6:00 pm, Sabino

Addressing the low vision patient’s mid-range needs, such as music and computer, are sometimes not given the same emphasis as reading or distance tasks. Telemicroscopes are good options to meet these needs, but have a restricted visual field. In this course, we will present a strategy which maximizes the visual field and we will review the features of available telemicroscopic products.

Instruction Level: Intermediate
Objectives:

1. Be aware of the types of mid-range problems visually impaired people have and understand why this represents a special challenge to the low vision professional, as well as the basic principles of magnification necessary to implement help for mid-range needs.
2. Learn how to evaluate a patient to assess their needs and potential solutions, including important aspects of the case history.
3. Become acquainted with the telemicroscopic products available that can help with mid-range problems.

CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, COPE: 1, CRCC: 1

Sessions

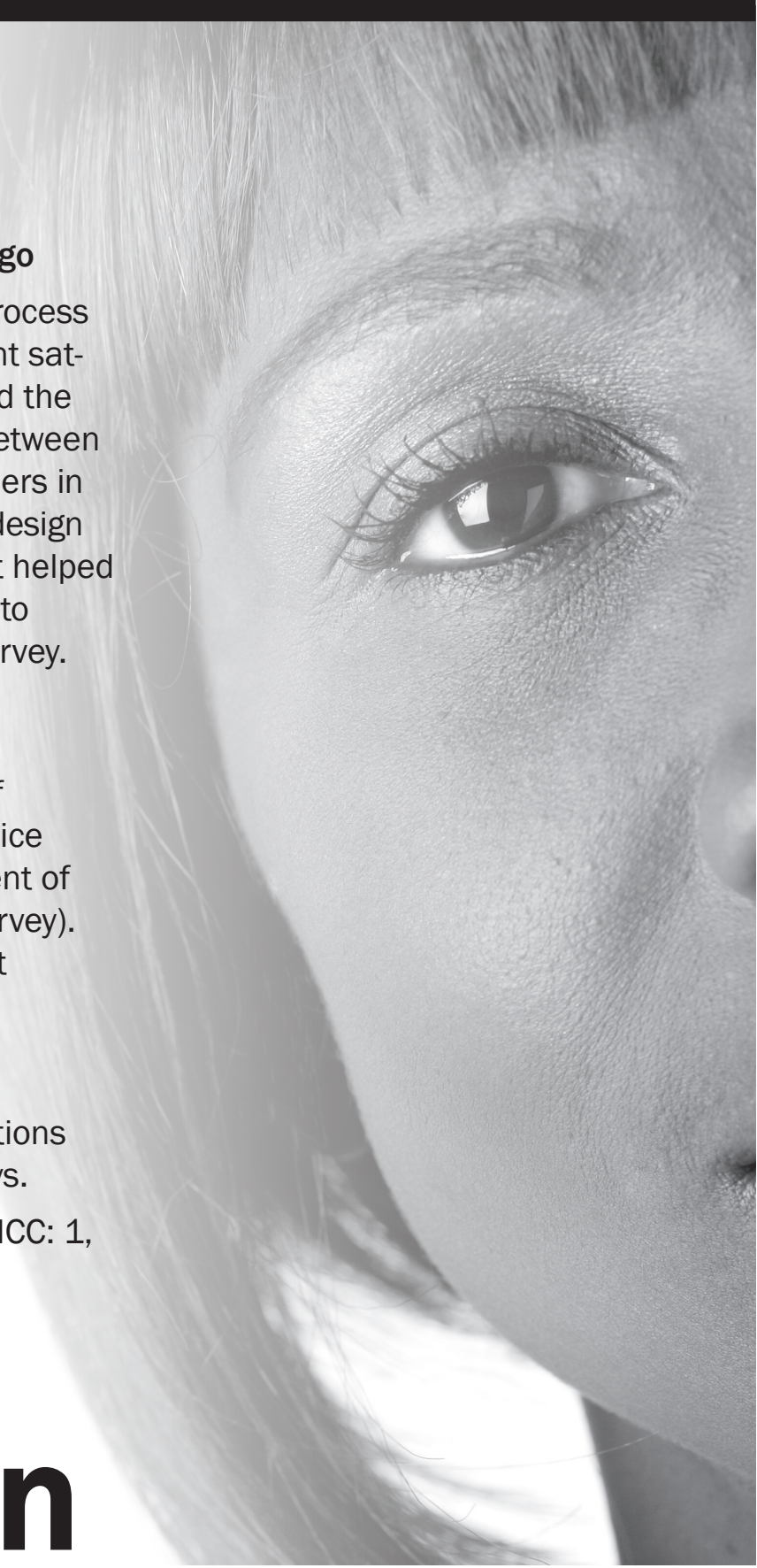
S18: Client Satisfaction Measurement: A Useful Service Quality Tool
Deborah Gold, PhD
5:00 pm - 6:00 pm, Hidalgo

This session will focus on the process involved in implementing a client satisfaction measurement tool, and the collaborative approach taken between service managers and researchers in all aspects of the process from design to volunteer training. A pilot test helped to identify the changes needed to improve the process and the survey.

Instruction Level: Intermediate
Objectives:

1. Describe the importance of collaboration between service and research in development of CSS (Client Satisfaction Survey).
2. Describe the role of a client satisfaction survey in comprehensive program evaluation.
3. List the benefits and limitations of client satisfaction surveys.

CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, COPE: 1, CRCC: 1



Sessions

→ Friday, September 11

S19: TBI Related Vision Loss: From Research to Clinical Practice
Gregory Goodrich, PhD
8:00 am - 10:00 am, Encino

TBI is the signature injury of the wars in Iraq and Afghanistan and visual impairments/dysfunctions frequently occur with traumatic brain injury. In this presentation I will describe the findings of our research, and the programs developed to address these conditions as well as the challenges and lessons learned to date.

- Instruction Level:** Introductory
Objectives:
1. Become familiar with the most prevalent types of vision impairments/dysfunctions associated with TBI.
 2. Become familiar with the clinical interventions necessary to treat TBI-related vision impairments/dysfunctions.
 3. Become familiar with the challenges of implementing clinical vision services within an existing rehabilitation program.
- CEUs:** ACCME: 2, ACVREP: 2, ANCC: 2, AOTA: 2, COPE: 2, CRCC: 2

S20: Where the \$%#& is That Thing? Scanning Training for Clients with Low Vision
Colleen O'Donnell, OT, CLVT
Marlyn J. Lawrence, OT, CLVT
8:00 am - 9:00 am, Sabino

We routinely focus on improving our clients' ability to identify the "what" – awareness of objects. The "where" – awareness of the environment – is often in the background of rehab. This session will discuss the importance of scanning training for all clients with low vision to enable safe participation in the environment.

- Instruction Level:** Introductory
Objectives:
1. Identify the need for and benefit of scanning training in clients with low vision.
 2. Perform client-centered scanning training as part of the vision rehab program.
 3. Adapt scanning training techniques in order to address specific low vision conditions and physical, cognitive or behavioral client limitations.
- CEUs:** ACVREP: 1, AOTA: 1, CRCC: 1

Sessions

S21: The Eye and the Brain: A Review of Charles Bonnet Hallucinations and Ring Scotomas for the Vision Rehab Clinician
Mary Lou Jackson, MD, ABO
8:00 am - 9:00 am, Hidalgo

We see with our brains, not just our eyes. Neuroimaging studies are beginning to report information that may assist us to understand clinical findings seen in vision rehabilitation practice. This session will review the clinical findings of both Charles Bonnet hallucinations and foveal sparing or ring scotomas and then review the emerging information from fMRI studies relevant to each of these clinical scenarios.

- Instruction Level:** Intermediate
Objectives:
1. Be able to diagnosis the clinical entity of Charles Bonnet hallucinations.
 2. Appreciate what is known about brain function and Charles Bonnet hallucinations.
 3. Understand and be able to identify the clinical findings in patients with ring scotomas.
- CEUs:** ACCME: 1, ACVREP: 1, AOTA: 1, COPE: 1, CRCC: 1

R5: The Impact and Remediation of Visual Field Loss
Moderator: Eli Peli, OD, MS – Schepens Eye Research Institute, Department of Ophthalmology, Harvard Medical School
8:00 am - 10:00 am, Madero

- 8:00 - Visual Search and Mobility in Persons with Low Vision** – Thomas Kuyk, PhD: Northrop Grumman Corporation, San Antonio, TX
- 8:20 - Preferred Retinal Locus (PRL) - Hand Coordination in a Manual Tracing Task** – George Timberlake, PhD: University of Kansas Medical Center, Prairie Village, KS; Evanthia Omoshsharka: Kansas City VA Medical Center, Kansas City, MO; Barbara Quaney: Kansas City VA Medical Center, Kansas City, MO; Joseph Maino: University of Kansas Medical Center, Prairie Village, KS
- 8:40 - The Impact and Treatment of Visual Field Loss on Gap Detection Ability** – Duane Geruschat, PhD: Maryland School for the Blind, Baltimore, MD
- 9:00 - Driving with Visual Field Loss: Evaluation in a Simulator** – Eli Peli, OD: Schepens Eye Research Institute, Boston, MA; Alex Bowers; Robert Goldstein; Aaron Mandel; Matthew Bronstad; Amanda Albu

Sessions

9:20 - Measuring the Impact of Visual Field Loss on Quality of Life – Robert Massof, PhD: Johns Hopkins University, Baltimore, MD

Instruction Level: Intermediate

Objectives:

- 1. Understand aspects of the impact and remediation of visual field loss.
- 2. Understand aspects of visual search and mobility in persons with low vision.
- 3. Measure the impact of visual field loss in driving and quality of life.

CEUs: ACVREP: 2, CRCC: 2

S22: The Big D: Driver Assessment and Pre-Road Training - A Protocol that Works
Marlyn J. Lawrence, OT, CLVT
Wanda Smith, OT, CLVT
9:00 am - 10:00 am, Sabino

This presentation demonstrates the importance of evaluating patients prior to dispensing bioptic telescopes and providing training after dispensing. When vision, cognition, reaction time and physical parameters are evaluated in advance and training is provided, there are positive results. The patient success on the road test increased.

Instruction Level: Intermediate

Objectives:

- 1. Understand the skills required in order to instruct a potential bioptic driver.
- 2. Identify skill areas to evaluate for prospective bioptic telescope patients.
- 3. Be able to train potential bioptic drivers.

CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

S23: The Brighter Side of Sunlight
Stuart Richer, OD, PhD
9:00 am - 10:00 am, Hidalgo

Vitamin D deficiency is associated with no less than 25 medical conditions, the common cold and winter mortality. Some scientists consider it be a new public health epidemic, particularly for the growing population of people of color living and working 24/7 indoors in northern climates in the US and Canada. This is of crucial concern for ODs, due to a dearth of minority health care providers. Much can be achieved with an OTC supplement costing pennies per day. This is one of the most important issues emerging in contemporary medicine, and is not without controversy.

Instruction Level: Introductory

Objectives:

- 1. Review the basic physiology of this hormone-like vitamin and

Sessions

- appreciate its emerging relationship to eye disease.
- 2. Learn about major studies associating 25 (OH) Vitamin D stores, cancer, heart disease and diabetes.
- 3. Learn to suspect deficiency based upon ethnicity, latitude, occupation, age, fish and supplement consumption – and order a simple lab test.

CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, COPE: 1, CRCC: 1

S24: The MP1 Microperimeter as a Clinical and Rehabilitation Tool
Michael Crossland, OD, PhD
10:30 am - 11:30 am, Encino

The MP1 microperimeter is increasingly used to assess visual function. This presentation will review the use of the MP1 and explain how the clinician or rehabilitation professional can interpret the results of the MP1, with emphasis on identifying the preferred retinal locus and fixation stability in people with macular disease.

Instruction Level: Introductory

Objectives:

- 1. Understand the principles and practice of microperimetry.
- 2. Select appropriate perimetry and fixation tests for people with visual impairment.

- 3. Identify fixation location and stability from MP1 microperimetry plots.

CEUs: ACCME: 1, ACVREP:1, COPE: 1, CRCC: 1

S25: Diagnosis and Treatment of Atrophic AMD
Stuart Richer, OD, PhD
10:30 am - 12:30 pm, Hidalgo

Nearly 90 percent of AMD is atrophic and within the purview of optometrists. We examine what’s new in visual testing and nutrition including the LUXEA, LAST, PHOTOTROP, TOZAL, LUNA, LAST II & CARMIS clinical trial data. We also examine the importance of lipofuscin as well as the candidate drugs and nutrients that may reduce it. Finally, we address candidate anti-angiogenic eye drops, which will likely open the door for further co-management opportunities with ophthalmology.

Instruction Level: Intermediate

Objectives:

- 1. Understand how to identify high-risk patients, calculate risk progression and know when to use an AREDS-type supplement formula and understand the study objectives of AREDS II, and how they differ from the first AREDS study.
- 2. Review recent studies confirming the LAST study results and have a

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detailed knowledge of new instrumentation used to measure macular pigment and visual function of patients with this stealth-like disease.

3. Come away with a prevention checklist to use for AMD patients.

CEUs: ACCME: 2, ACVREP: 2, AOTA: 2, COPE: 2, CRCC: 2

S26: Getting in Charge of Getting Around
Cynthia Bachofer, TVI, CLVT
10:30 am - 11:30 am, Sabino

Gaining access to systems of transportation (e.g. bus, hired driver) available to non-drivers is a crucial skill. Dealing with the frustrations of being a non-driver presents obstacles to this group. Helping students prepare for this impact of visual impairment on their lives is a necessary part of each child’s education plan.

Instruction Level: Introductory
Objectives:

1. Describe the challenges of handling adult responsibilities as a non-driver.
2. Review the options of transportation including advantages and disadvantages.
3. Identify specific skills needed to manage transportation safely and efficiently.

CEUs: ACVREP: 1, ANCC: 1, AOTA: 1, CRCC: 1

R6: From the Laboratory to the Clinic: Translating Low Vision Research and Development into Practice
Moderator: Robert Massof, PhD–
Johns Hopkins Wilmer Eye Institute, Johns Hopkins School of Medicine
10:30 am - 12:30 pm, Madero

10:30 - Sensory Substitution Using Tactile Stimulation of the Tongue –
Bill Seiple, PhD: Lighthouse International, New York, NY

10:45 - High and Low Tech Solutions to Improving Night and Day Vision –
Thomas Kuyk, PhD: Northrop Grumman Corporation, San Antonio, TX

11:00 - Research and Development of an Electro-Optical Low Vision Enhancement System – Robert Massof, PhD: Johns Hopkins Wilmer Eye Institute, Baltimore, MD

11:15 - Peripheral Prisms for Hemianopia: The Long Way from Concept to Market – Eli Peli, OD: Schepens Eye Research Institute, Boston, MA

Instruction Level: Intermediate
Objectives:

1. Translate low vision research and development into practice.
2. Understand high and low tech research and apply to practical

Sessions

applications in practice.

3. Understand the advances in technology and how close they are to market.

CEUs: ACVREP: 2, AOTA: 2, CRCC: 2

S27: Why Can’t Grandma Shop? Assessing Safety and Accessibility in Communities and Getting Changes Made
Mary Ellen Daniel, OT, CLVT
Lori Adamek, OT, CLVT
11:30 am - 12:30 pm, Encino

When public settings and services do not accommodate persons with vision loss, it places them at a higher risk for social isolation, falls, injuries, depression and dependence. Learn steps in performing environmental assessments, making recommendations and educating administrators and staff on strategies for enhancing safety and participation in community settings.

Instruction Level: Introductory
Objectives:

1. Describe safety hazards that limit community participation by persons with vision impairments.
2. Explain the procedure for planning and conducting a community environmental assessment.
3. List easy, inexpensive adaptations and strategies to increase safety and community participation by those with vision impairments.

CEUs: ACVREP: 1, ANCC: 1, AOTA: 1, CRCC: 1

S28: A Review of Central Field Assessment Techniques for the Vision Rehab Clinician
Mary Lou Jackson, MD, ABO
11:30 am - 12:30 pm, Sabino

Central vision is very important to tasks such as reading and the clinical evaluation of central field is growing in importance in planning visual rehabilitation interventions. A range of assessment techniques from inexpensive, low tech methods to more detailed methods will be reviewed. A series of clinical cases will be presented to demonstrate principles of fixation, scotoma location, scotoma size and scotoma configuration. Recent research relevant to macular perimetry and questions that need to be addressed will be discussed.

Instruction Level: Intermediate
Objectives:

1. Appreciate the principles of visual field evaluation.
2. Appreciate the range of central field assessment tools.
3. Understand the clinical findings in macular perimetry.

CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, COPE: 1, CRCC: 1

Sessions

S29: A Practical Approach to Children’s Low Vision
Rebecca Coakley, TVI, CLVT
11:30 am - 12:30 pm, Villa

When medical and surgical interventions are exhausted, often the only recommendation by the eye doctor is the use of large print materials in the classroom. There are few programs that comprehensively address the rehabilitation needs of the visually impaired child. This session is designed to introduce professionals to a systematic and collaborative approach for the child with visual impairment based on the experiences of The Children’s Vision Rehabilitation Project of West Virginia University (CVRP). Presentations will be case-centered (i.e. disease specific) and for each scenario, an individually tailored plan will be developed to address assessment of “functional vision,” educational planning, low vision device and technology evaluation and recommendations. Discussion will include age-appropriate device prescribing, classroom adaptations, developing collaborations between physicians and educators, and how to establish a local vision rehabilitation program. Low vision devices will be available for demonstration.

Instruction Level: Introductory

Objectives:

- 1. Identify appropriate evaluations for students with visual impairments.
- 2. Interpret medical information and translate to functional application.
- 3. Bridge the gap between medical and educational fields through the recommendation process.

CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

S30: Fields, Filters and Fitting the Prescribing Regimen to the Low Vision Patient
Gary Asano, OD
2:00 pm - 4:00 pm, Encino

Low vision prescribing is customized to the individual. Their field of vision and scotomas, their eccentric viewing angle, disability, glare sensitivity under different lighting, and binocularity all have a critical role in the success of prescribing.

Instruction Level: Intermediate

Objectives:

- 1. Understand the importance of visual fields for prescribing.
- 2. Understand why filters are more than a sunglass.
- 3. Understand binocular and biocular function importance.

CEUs: ACCME: 2, ACVREP: 2, AOTA: 2, COPE: 2, CRCC: 2

Sessions

S31: Thinking Outside the Box: How to Grow Occupational Therapy in Your Low Vision Practice
Linda Mangun, OT
Tina Menck, COA
2:00 pm - 4:00 pm, Sabino

This presentation is intended to share a model of a successful low vision program and the various “out of the box” strategies it has utilized to promote continued growth. Emphasis will be placed on how to best utilize the occupational therapist, support staff, marketing, research opportunities, and sales to grow the low vision program as a whole.

Instruction Level: Intermediate

Objectives:

- 1. Utilize creative marketing strategies to increase low vision referrals.
- 2. Incorporate expanded low vision patient work up, cross-train OT staff.
- 3. Establish relationships with low vision product vendors to promote low vision aids sales and generate increased low vision program revenue.

CEUs: ACVREP: 2, AOTA: 2, CRCC: 2

R7: General Research Session #2: Current Topics in Low Vision Rehabilitation Research
Moderators: George Timberlake, PhD – University of Kansas Medical School, Department of Ophthalmology; Michael Floyd, MD – University of Kansas Medical Center, Department of Ophthalmology, Prairie Village, KS
2:00 pm - 4:00 pm, Madero

2:00 - Understanding Photopsias and Light Show Phenomena in Retinitis Pigmentosa – Ava Bittner, OD: Johns Hopkins Wilmer Eye Institute, Baltimore, MD

2:15 - The Impact of Wet vs. Dry AMD – Lylas Mogk, MD: Henry Ford Center for Vision Rehabilitation and Research, Livonia, MI

2:30 - Slab it or Not – Joseph Hallak, OD, PhD: Nassau University Medical Center Department of Ophthalmology, East Meadow, NY

2:45 - A Mixed-Methods Approach to Why People Choose not to Access Low Vision Rehabilitation Services – Walter Wittich, PhD Candidate: Department of Neurology and Neurosurgery - Neuroscience, McGill University, Montreal, QC

Sessions

3:00 - Short- and Long-Term Effects of Vision Rehabilitation: Implications for Clinical Practice – Joan Stelmack, OD: Hines VA Hospital Blind Center, Hines, IL

Instruction Level: Intermediate
Objectives:

- 1. Understand issues related to low vision treatment and vision rehabilitation research.
- 2. Understand the impact of wet vs. dry AMD.
- 3. Understand why people choose not to access low vision rehabilitation services.

CEUs: ACVREP: 2, AOTA: 2, CRCC: 2

S32: PRL ID & EVT x OT
Orli Weisser-Pike, OT, CLVT, SCLV
2:00 pm - 4:00 pm, Villa

161 OT practitioners responded to an

online survey which gathered information about practice patterns related to methods for identifying preferred retinal loci and eccentric viewing training. The presenter will report the findings of the survey while describing in detail methods of PRL identification and EVT.

Instruction Level: Intermediate
Objectives:

- 1. Describe methods to identify PRL and perform EVT that are discussed in low vision literature.
- 2. Know the most and least common methods of PRL identification and EVT used by OT practitioners in low vision rehabilitation.
- 3. Identify resources for obtaining additional information about these methods.

CEUs: ACVREP: 2, AOTA: 2, CRCC: 2



Sessions

→ Saturday, September 12

S33: Prism Adaptation for Left Hemispatial Neglect after Stroke or Brain Injury
Kevin Houston, OD
Kia Eldred, OD
8:00 am - 9:00 am, Encino

Patients with hemispatial neglect experience a reduction in the awareness of sensory information (visual, auditory, kinesthetic) on the left side of the body. Prism adaptation has been shown to be the leading treatment option for left neglect. This course will provide a comprehensive history of the disease, treatment options, history of prism adaptation, review of landmark research, and multi-center case studies.

Instruction Level: Intermediate
Objectives:

- 1. Recognize methods for diagnosing left hemispatial neglect.
- 2. Distinguish between treatments for left hemispatial neglect.
- 3. Understand landmark research on prism adaptation for neglect.

CEUs: ACCME: 1, COPE: 1



S34: Por Tu Familia (For Your Family): American Diabetes Association's Latino Initiatives Health Campaign
Julia Burgos
8:00 am - 9:00 am, Sabino

This presentation describes the American Diabetes Association's Latino Outreach Program offered in 18 cities throughout the country. It will offer an in-depth look at the program's development and success.

Instruction Level: Introductory
Objectives:

- 1. Provide an overview of the diabetes epidemic in the Latino community.
- 2. Illustrate the program's development process and cultural approach.
- 3. Highlight the various program offerings for the Latino community affected by diabetes.

CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

Sessions

S35: What Else is Wrong? How to Make it Right

Wanda Smith, OT, CLVT
Colleen O'Donnell, OT, CLVT
8:00 am - 10:00 am, Hidalgo

Loss of vision, especially in later life, is not an isolated condition. Multiple health conditions are common, including cardio-pulmonary disease, arthritis, depression, dementia, diabetes and others. This course will identify health conditions that impact vision rehabilitation and address specific methods for managing other health conditions in patients with low vision.

- Instruction Level:** Introductory
Objectives:
1. Identify signs and symptoms of common health conditions affecting the patient with low vision.
 2. Explain the impact of other health conditions on vision rehabilitation.
 3. Describe methods for enhancing patients' management of their other health conditions as part of the vision rehabilitation program.

CEUs: ACVREP: 2, ANCC: 2, AOTA: 2, CRCC: 2

R8: Balance, Mobility and Falls: Theory and Practice
Moderator: J. Vernon Odom, PhD
– West Virginia University Eye Institute, Robert C. Byrd Health Sciences Center, Morgantown, WV
8:00 am - 10:00 am, Madero

8:00 - Fall Risk, Dynamic Visual Acuity and Balance in Visually Impaired Individuals – Courtney Hall, PhD: Atlanta VAMC, Decatur, GA

8:20 - Fall Risk, Mobility Outcomes and Accountability – Christopher Ray, PhD: Dallas VAMC, University of Texas at Arlington, Arlington, TX

8:40 - Balance, Mobility and Falls – Duane Geruschat, PhD: Maryland School for the Blind, Baltimore, MD

9:00 - Are Pedestrians Able to Make Correct Street-Crossing Decisions Using Only Auditory Information? – Shirin Hassan, OD, PhD: Indiana University School of Optometry, Bloomington, IN

9:20 - Visual Perception Deficits: Relationship to Balance, Mobility and Falls in Patients – J. Vernon Odom, PhD: West Virginia University Eye Institute, Morgantown, WV

- Instruction Level:** Intermediate
Objectives:
1. Understand aspects of falls.
 2. Understand aspects of mobility.
 3. Understand aspects of balance.

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CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

S36: Diabetes Epidemic: Family Medicine and Visual Rehabilitation Working Together
Paul Davis, MD
Craig Parman, MD
William L. Park, OD, FAAO
9:00 am - 10:00 am, Encino

Nearly 24 million Americans have diabetes, an increase of 13.5 percent in the last four years. Over 25 percent are unaware that they have the disease and between 40 and 45 percent of all diabetics will suffer vision loss from the disease. This course discusses collaboration of family medicine and interdisciplinary low vision rehabilitation.

- Instruction Level:** Introductory
Objectives:
1. Understand the epidemic of diabetes in the US and patients affected by visual impairment.
 2. Identify the basics of developing collaboration protocol in treatment and management of diabetes in family practice and interdisciplinary low vision rehabilitation in maintaining visual function and quality of life.
 3. Describe long-term protocol for maximizing patient outcomes, independence and performance

in ADLs through defined collaboration of family practice and low vision rehabilitation through case studies.

CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, COPE: 1, CRCC: 1

S37: Untangling the Jungle of Low Vision Credentials
Orli Weisser-Pike, OT, CLVT, SCLV
9:00 am - 10:00 am, Sabino

With the influx of occupational therapy practitioners into the field of low vision rehabilitation, there has been confusion about certification, credentials and competency. This presentation is designed for all practitioners in low vision rehabilitation who seek to understand the credentials available to therapists who work in the field.

- Instruction Level:** Introductory
Objectives:
1. Know about credentials in low vision rehabilitation and the certifications they represent.
 2. Understand the differences between credentialing bodies and processes.
 3. Understand the benefits and limitations of each certification.

CEUs: ACVREP: 1, AOTA: 1, CRCC: 1

Sessions

S38: Determining Legal Blindness and Visual Disability
David Lewerenz, OD
10:30 am - 11:30 am, Encino

There are benefits to a visually impaired patient being certified legally blind. In recent years, new guidelines from the Social Security Administration have been established which enable vision care professionals to use newer methods of assessing visual function. Additionally, visual acuity and visual field information may now be combined to certify legal blindness in those who might have previously been denied. Ethical considerations and strategies for assessing the suspected malingeringer are discussed.

- Instruction Level:** Intermediate
Objectives:
1. Know the reasons why people wish to have legal blindness certified.
 2. Understand the history of determining legal blindness in the United States and become acquainted with the new regulations for determining legal blindness.
 3. Understand some of the challenges of evaluating a suspected malingeringer and the ethical role of the vision care professional in determining legal blindness.
- CEUs:** ACCME: 1, ACVREP: 1, AOTA: 1, COPE: 1, CRCC: 1

S39: Development of an Educational Intervention to Improve Access to Eye Care for Hispanic Children
Marcela Frazier, OD
10:30 am - 11:30 am, Sabino

This presentation demonstrates the steps followed in the development of an educational intervention to improve access to eye care for Hispanic children. Vision screenings and proper referrals to eye care specialists are very important to detect and treat eye problems in children since young children are not usually able to determine when they have a vision problem. There seems to be difficulty in getting Hispanic children in Alabama to seek a full eye exam after failing a vision screening. We have conducted a qualitative study to explore the socio-cultural factors associated with seeking eye care for children among Hispanic immigrant families in Birmingham from a theory-based and culturally-relevant perspective. Based on the results from our previous study, we have developed a theory-based, culturally-based intervention, with ongoing input from representatives of the target audience and health care providers working with this population. The main deliverable is a theory-based, culturally-relevant intervention to promote access to eye care among Hispanic children.

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- Instruction Level:** Introductory
Objectives:
1. Understand the barriers in access to eye care that Hispanic immigrants face.
 2. Develop an educational intervention to improve access to eye care for Hispanic children.
 3. Understand the importance of making educational interventions not only translated, but culturally appropriate as well.
- CEUs:** ACVREP: 1, AOTA: 1, COPE: 1, CRCC: 1

S40: Which Side Are We On? Right vs. Left Brain in Acquired Brain Injury Patients
Kia Eldred, OD
Tonya Mennem, OT, CLVT, SCLV
10:30 am - 11:30 am, Hidalgo

Participants will be informed regarding the number of patients with right and left acquired brain injury in the US. Presenters will describe frequently seen physical, behavioral and visual factors and how to examine and initiate therapy for this population. Finally, optical intervention and training will be explored.

Instruction Level: Introductory
Objectives:

1. Be aware of the number of persons who have right and left brain injury after acquired brain injury.

2. Identify the physical, behavioral and visual differences found with right and left brain damage.
 3. List the examination and treatment options for patients with speech and perceptual deficits.
- CEUs:** ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, COPE: 1, CRCC: 1

R9: Accessibility of Small Visual Displays
Moderator: Ron Schuchard, PhD
– ASR® Device Study Group,
Atlanta VA Rehabilitation R&D
Center of Excellence, Emory
University, Atlanta, GA
10:30 am - 11:30 am, Madero

10:30 - Understanding the Barriers Posed by Small Visual Displays to People with Low Vision – Lee Huffman, BA: American Foundation for the Blind, Huntington, WV

10:45 - Graceful Transformation: The Concept, Practice and Implications for the Accessibility of Small Handheld Device Use – Shannon Riley, MA: Envision Low Vision Rehabilitation Center, Wichita, KS

11:00 - A Procedure for Measuring Image Quality in Small Visual Displays – Mark Uslan, MA, MS: American Foundation for the Blind, Huntington, WV; Jack Smith, PhD: Marshall

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University, Huntington, WV; Ron Schuchard, PhD: ASR® Device Study Group, Atlanta VA Rehabilitation R&D Center of Excellence, Emory University, Atlanta, GA

11:15 - Visual Display Reading Problems and Solutions – John Brabyn, PhD: Smith-Kettlewell Eye Research Institute, San Francisco, CA; H. Shen; W. Gerrey; J. Coughlan; T. Fowle

Instruction Level: Intermediate
Objectives:

1. Understand the barriers posed by small visual displays.
2. Understand the accessibility of small visual displays.
3. Understand the image quality and reading problems of small visual displays.

CEUs: ACVREP: 2, AOTA: 2, COPE: 2, CRCC: 2

S41: Low Vision 101 from Low Tech to High Tech – No Holds Barred
Joseph Hallak, OD, PhD
Marcelle Morcos, MD
2:00 pm - 4:00 pm, Encino

Low vision will be subdivided into two groups of patients, those with decreased visual acuity and the ones with loss of visual field. The visual acuity group is subdivided into three categories of low, moderate, severe

visual loss and blindness; each requiring a different set of low vision devices from low tech to high tech. Visual field losses will be discussed similarly. Recent developments in vision restoration/rehabilitation will be presented.

Instruction Level: Introductory
Objectives:

1. Discuss the various groups of visual losses according to severity.
2. Apply to each group appropriate rehabilitative aids.
3. Discuss advanced computer technologies to restore function to the severely impaired patients.

CEUs: ACCME: 2, ACVREP: 2, ANCC: 2, AOTA: 2, COPE: 2, CRCC: 2

S42: A Toolbox for Interventions in the Homes of Patients with Low Vision
Orli Weisser-Pike, OT, CLVT, SCLV
2:00 pm - 4:00 pm, Sabino

Home evaluations, modifications and tools are discussed in the context of an online survey. Thirty-eight occupational therapy practitioners responded to a questionnaire to gather information about practice patterns in the home setting. This presentation will provide recommendations for developing a toolbox based on the results of the survey.

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Instruction Level: Introductory
Objectives:

1. Know informal and formal evaluations conducted in the home setting.
2. Learn interventions that are conducted in the home setting.
3. Have a practical plan for developing a toolbox for interventions in the home setting.

CEUs: ACVREP: 2, ANCC: 2, AOTA: 2, CRCC: 2

S43: Visual Changes Following Blast Injuries
Tonya Mennem, OT, CLVT, SCLV
Kia Eldred, OD
2:00 pm - 4:00 pm, Hidalgo

This presentation explores the most frequently identified visual changes following blast injuries. Screening questions and examination procedures will be discussed. Intervention strategies and case studies will illustrate the use of a collaborative OT/OD model currently being utilized at the Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC).

Instruction Level: Introductory
Objectives:

1. Identify evidence-based literature available on visual changes following blast injuries.
2. Recognize common visual symptoms following blast injuries.

3. Identify screening questions to increase ability to recognize visual changes following blast injuries.
4. Identify examination steps to objectively measure and diagnose visual changes following blast injuries.
5. Identify best practice intervention strategies.

CEUs: ACCME: 2, ACVREP: 2, ANCC: 2, AOTA: 2, COPE: 2, CRCC: 2

R10: The Psychological Impact of Low Vision
Moderator: Shirin Hassan, PhD, Low Vision and Mobility, BAppSc (Optom - Foreign Trained Optometrist) – Indiana School of Optometry, Bloomington, IN
2:00 pm - 4:00 pm, Madero

2:00 - Fluctuations in Vision Associated with Sleepiness and Perceived Stress in Retinitis Pigmentosa – Ava Bittner, OD: Johns Hopkins Wilmer Eye Institute, Baltimore, MD

2:20 - A Trend Towards Reduced Quality of Life Scores in Some Patients Recovering from Left Hemispatial Neglect – Kevin Houston, OD: Indiana University School of Optometry, Indianapolis, IN

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2:40 - Motivations and Barriers in Several Target American Populations–
Wanda Hamilton, BA: AMD Alliance International, Toronto, ON

3:00 - Determinants of Resilience among Family Members of Persons in Low Vision Rehabilitation –
Laura Dreer, PhD: University of Alabama at Birmingham, Birmingham, AL

Instruction Level: Intermediate
Objectives:
1. Understand aspects of the psychological impact of low vision.
2. Understand aspects of motivation and reduced quality of life.
3. Understand the role of perceived stress and determinants of resilience.

CEUs: ACVREP: 2, CRCC: 2

S44: Using Reading Tests to Evaluate Macular Function
Donald Fletcher, MD
4:15 pm - 5:15 pm, Encino

Reading performance utilizing available reading tests can be a valuable tool in clinical low vision rehabilitation. This course reviews the tests available, methods of administration, and correct interpretation of findings.

Instruction Level: Intermediate
Objectives:
1. Select reading tests for clinical low vision rehabilitation.

2. Understand error patterns and relationship to scotomas.
3. Predict optimal magnification level.
CEUs: ACCME: 1, ACVREP: 1, AOTA: 1, COPE: 1, CRCC: 1

S45: Stroke and Vision Rehabilitation
Judith Goldstein, OD
4:15 pm - 5:15 pm, Hidalgo

This presentation reviews the epidemiology, clinical picture, functional effects and rehabilitation strategies for vision rehabilitation in stroke patients. Three clinical cases will be discussed to emphasize practical experience.

Instruction Level: Intermediate
Objectives:
1. Better interpret the clinical impact on visual function in stroke patients.
2. Understand different treatment approaches and rehabilitation strategies.
3. Initiate new rehabilitation strategies in practice.

CEUs: ACCME: 1, ACVREP: 1, ANCC: 1, AOTA: 1, COPE: 1, CRCC: 1

Sessions

S46: A Review of Occupational Therapy Techniques for Treating Ring Scotomas
Kimberly Schoessow, OTD;
Leah Gilbert, OTR/L
Michelle Bianchi, OTR/L, CLVT
4:15 pm - 5:15 pm, Sabino

Ring scotomas occur commonly in patients referred for vision rehabilitation and they can be a challenge for the vision rehabilitation clinician as traditional approaches to the rehabilitation for central scotomas may not be effective. It is important for both the clinician and the patient to be aware of the characteristics of such central field loss and the impact on function.

Rehabilitation interventions focus on evaluating and optimizing the potential to use the central seeing area or, when required, facilitating the use of more peripheral retina. Clinical techniques will be reviewed and demonstrated.

Instruction Level: Intermediate
Objectives:
1. Appreciate the diseases associated with ring scotoma patterns of central field loss.
2. Appreciate the presenting symptoms and signs.
3. Understand the clinical approach to rehabilitation for ring scotomas.

CEUs: ACVREP: 1, ANCC: 1, AOTA: 1, CRCC: 1

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Research Session Abstracts

Research sessions are also listed in the Sessions section.

→ Thursday, September 10

R1: Face Recognition: Effect of Age and Visual Impairment on a Socially Desirable Ability

Moderator: Olga Overbury, PhD -
School of Optometry, University of Montreal, Montreal QC
8:00 am - 10:00 am, Madero

8:00 Face Recognition in Elders with Good Acuity Marilyn E. Schneck, PhD: Smith-Kettlewell Eye Research Institute,

Abstract:
Purpose: Face recognition ability decreases with age. Vision function also decreases with age. Does face recognition decline with advancing age in individuals who maintain good (20/40 or better) standard (high contrast) acuity? The purpose of this study is to evaluate whether face recognition is maintained in those who maintain good visual acuity into old age.
Methods: Each individual was tested on a variety of vision measures, including measures of high and low contrast acuity [measured under standard lighting, simulated reduced lighting (SKILL Card dark chart), and in the presence of glare] and contrast sensitivity. 500 of 578 individuals tested met the acuity inclusion criterion of standard visual acuity of 20/40 or better (mean age 76.9 years, range 64 - 100). In addition, the ability to recognize faces (identity - 4 possibilities) and expression (happy, sad, angry or afraid) across a range of equivalent viewing distances (EVD) was measured. Photos of the four individuals in neutral expression were present at all times, as were the choices of facial expression. Testing was binocular with habitual correction.
Results: Identifying the faces proved to be much more difficult (required smaller EVD) than recognizing expression. On average, recognizing expression was possible out to approximately 30 feet EVD; recognizing face identity was only possible as far as 20 feet; and correctly identifying both face and expression required the closest distance (10 feet). Face recognition declines linearly with age. The most difficult task (recognizing both identity and expression) has a negative slope of 7 feet per decade. For those aged 85 and above, an individual must be within 5 feet in order to correctly identify the face and its expression.

Research Session Abstracts

For this population, the vision measure that best predicts face recognition performance was low contrast acuity.
Conclusion: Face recognition, important for social interaction, declines markedly with advancing age among older individuals who have “good vision” by standard measures.

8:20 Face Recognition and Visual Acuity in Younger and Older Normally Sighted Observers and Patients with AMD Walter Wittich, MA: Dept. of Neurology & Neurosurgery – Neuroscience, McGill University, Montreal, QC

Abstract: Individuals with age-related macular degeneration (AMD) often complain of difficulty in recognizing the faces of those around them, which creates a great deal of anxiety in social situations. This study utilized a set of Face Recognition Charts (FRCs) that are similar in design to the Early Treatment of Diabetic Retinopathy Study (ETDRS) letter charts, in that there are 5 items per row, proportionally equal spacing between the items, and a logarithmic progression of line sizes. However, instead of letters, the FRCs contain images of faces. Like the ETDRS, there are 10 different exemplars on the FRCs showing 10 individual faces (5 male and 5 female), all of young adult Caucasians. The ability to recognize both faces and letters was compared among younger and older normally sighted observers, as well as patients with a diagnosis of AMD. For younger individuals, the difference between VA and FRC scores was less pronounced than in older observers, and increased in both groups with decreasing VA. For AMD patients, however, VA was a poor predictor of FRC scores. This lack of linear relationship between these two measures in a clinical population is not surprising, given the heterogeneity in both scotoma size and location among patients. The face images on the FRCs contain hairline and ears, making this test more a person identification task than a pure face recognition test. Preliminary data on FRCs without hairline indicate that pure face recognition without identifying features becomes extremely difficult if not impossible with a clinical population.

8:40 Factors Underlying Performance on a New Face Discrimination Test Claire S. Barnes, PhD: VA Rehab R&D Center of Excellence, Atlanta, GA

Abstract:
Purpose: The ability to recognize faces is fundamental to social interactions. Face perception has been studied at length in neurological disorders like

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prosopagnosia, but has not been studied much in retinal disorders. This study was designed to investigate the effects of age, visual acuity, and contrast sensitivity on individuals' ability to discriminate between faces in sets of face photographs.

Method: 25 control subjects (ages 22 to 82 years) participated, along with 26 individuals with age-related macular degeneration and seven diagnosed with retinitis pigmentosa. Binocular distance visual acuity and contrast sensitivity were measured. In separate halves of the Faces test, color photos of 8 male or 8 female faces were presented continuously. Subjects matched each central test face (differing in pose and/or expression) to one of the comparison faces, as quickly but accurately as possible. Outcome measures were response time (RT) and percent correct responses.

Results: For the control subjects, accuracy decreased and RTs increased between the young and older adults. RTs also were more variable for the older controls. Across the whole group of subjects, RTs increased and accuracy decreased with declines in acuity or contrast sensitivity.

Conclusion: Older controls had wider-ranging scores than did young controls, consistent with greater variability reported with aging in other psychophysical studies. Collection of data across a wider range of subjects is continuing, to help to clarify the variation in face discrimination performance within and between groups.

9:00 Use of the OCT/SLO to Examine Face Recognition by Individuals with Macular Degeneration

Bill Seiple, PhD: Lighthouse International, New York, NY

Abstract: Face recognition plays an essential role in social situations, carrying both identification and contextual meaning. Prosopagnosia, a deficit in face recognition, can be due to losses in central processing (genetic, Parkinson's Disease, traumatic brain injury, attention defect, etc.) or to altered sensory input as a consequence of eye disease and/or altered search processes. Deficits in face recognition and facial expression discrimination have been reported in patients with age-related macular degeneration. These deficits have been correlated with acuity and contrast sensitivity, as measured clinically. In the present study, we examined the role that peripheral fixation locus and eye movement deficits play in a patient's inability to recognize faces and facial expressions. An OCT/SLO instrument (OPKO, Inc.) was used to present the stimuli, while simultaneously localizing the areas of fixation on the retina and

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quantifying the patterns of eye movements used to examine the image. Because the SLO and OCT images could be obtained simultaneously and overlaid with microperimetry data, we were able to map the locus of retinal fixation relative to the structural deficits caused by the disease. Results that correlate the eccentricity and stability of fixation with performance will be presented.

R2: Newcomers with New Questions for Low Vision Rehabilitation

Moderator: Laura Walker Renninger, PhD -

Smith-Kettlewell Eye Research Institute, San Francisco, CA

10:30 am - 12:30 pm, Madero

10:30 Timed Instrumental Activities of Daily Living (TIADLs) as an Outcome Measure of Occupational Therapy

Kim Schoessow, OTD: Massachusetts Eye and Ear Infirmary, Boston, MA

Abstract:

Purpose: To evaluate the effect of LVR and OT on low vision patients' ability to perform ADLs using TIADLs as an outcome measure.

Methods: 15 low vision patients had TIADL and visual function testing performed at presentation and after LVR. Patients were prescribed visual aids and OT. The TIADL test included the following tasks: (1) identify the amount due on a bill, (2) write a check, (3) sort currency, (4) find a phone number in a phone book, (5) dial a phone number, and (6) identify 4 queens in a set of 12 face cards.

Patients were allowed to use any available aid for the test. They were timed until the task was completed correctly or until 120 seconds elapsed. If a patient was unable to complete the task within that time, they were assigned a score of 120 seconds.

Results: 7 men and 8 women had median (range) age 81 (51-98). All had a maculopathy, 2 also had POAG and 1 also had diabetic retinopathy. Initial best eye VA ranged from 20/32-383, median 20/115.

10 out of 15 patients received low vision OT in addition to their 70-min. visit with the low vision ophthalmologist. With respect to the follow-up TIADL exam, of the 5 who did not receive OT, 1 (20%) completed more tasks and 3 (60%)

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completed the tasks faster. Of the 10 who received OT, 6 (60%) completed more tasks and 8 (80%) completed the tasks faster.

As a group, it took 3,448 sec. to complete the TIADL tasks initially and 2,670 sec. at follow-up ($p < 0.0001$, paired sample t-test). Initially 73 tasks were completed with 83 at follow-up ($p = 0.008$, paired sample sign test).

3 out of 4 patients who performed the TIADL tasks slower at follow-up had worse visual function. All 4 patients completed the same number of tasks.

Conclusion: After LVR, patients were able to complete significantly more TIADLs within 120 sec. and were able to complete them faster. This TIADL test may be a useful and efficient outcome measure for low vision rehabilitation. Further study is needed to determine whether 120 seconds is an ideal cut-off point, as well as to determine the validity and reliability of the assessment compared with other measures of function.

10:50 Learning and Efficiency in Visual Search Following Simulated Central Loss

Melchi Michel, PhD: University of Texas at Austin, Austin, TX

Abstract:

Introduction: Can human observers adapt their saccadic strategies to a new retinal sensitivity map? Performance in a visual search task depends critically on both the observer's pattern of retinal sensitivity and the observer's saccadic strategy. Certain retinal diseases, such as macular degeneration, can dramatically alter an observer's pattern of retinal sensitivity, leading to impaired performance. It is unclear, however, whether these changes in performance result from inefficient saccadic strategies or simply reflect the loss of visual information from the damaged retinas.

Methods: The current study exploited gaze-contingent displays and an ideal observer model of visual search (Najemnik & Geisler, 2005) to determine whether human observers can appropriately modify their saccadic strategies following simulated changes to their retinal sensitivity maps. We used two experimental conditions: a "central scotoma" condition that simulated a loss of vision in the central 4 degrees of the visual field, and a "shifted fovea" condition that shifted the observer's sensitivity pattern upward by 2.5 degrees.

Results: In both experimental conditions, we compared the performance of our human observers with that of three types of simulated observers: 1) an ideal searcher that planned optimal fixations according to the transformed sensitivity map, 2) a naïve searcher that planned fixations to be optimal under the original

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(unaltered) sensitivity map, and 3) a random searcher that chose fixations randomly. All three simulated observers correctly updated the posterior probabilities over target locations following each saccade. In the "central scotoma" condition, humans outperformed the naïve and random searchers and demonstrated near optimal performance. In the "shifted fovea" condition, however, humans performed suboptimally, with performance near that of the naïve searcher.

Conclusion: Our results suggest that human observers can rapidly adapt their saccadic strategies for visual search following simulated macular damage, but that this learning is limited. We discuss possible reasons for the observed learning differences and highlight potential implications for rehabilitation of patients with central vision loss.

11:10 Quantifying Fixation Selection Efficiency in Age-Related Macular Degeneration

Laura Walker Renninger, PhD: Smith-Kettlewell Eye Research Institute, San Francisco, CA

Abstract:

Introduction: In low vision rehabilitation, patients with central vision loss are taught to use their peripheral vision to perform tasks once done by the fovea (e.g. reading). Scanning strategies may also be taught, however it is not clear how eye movements may compensate for visual field loss. This work seeks to quantify visual information and eye movement efficiency in AMD patients.

Methods: Eye movements were tracked as observers performed a shape discrimination task. We model the information gained by subjects with each fixation. The efficiency of the eye movement strategy is taken as the ratio of information gained at a given fixation location, divided by the maximum gain possible. The computation takes into account the size and location of the scotoma, as measured by microperimetry with a scanning laser ophthalmoscope. Eye movement parameters such as fixation dwell time and saccade amplitude were also measured.

Results: Fixation dwell times varied substantially and were negatively correlated with saccade amplitudes, however no difference was observed in these eye movement parameters between healthy and low vision subjects. The fixation selection efficiencies were lower for AMD patients than for healthy observers, but were uncorrelated with scotoma size.

Conclusions: Taken together, our results suggest that fixation selection behavior in AMD patients is inefficient and impacts visual function and task

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behavior. The finding that efficiency is unrelated to the extent of the field loss suggests that eye movement behavior may be changeable in these patients, and ultimately lead to improved visual functioning.

11:30 Computer Vision Applications for the Visually Impaired
Ender Tekin, PhD: Smith-Kettlewell Eye Research Institute,
San Francisco, CA

Abstract: The scientific discipline of computer vision deals with systems that extract information from digital images and videos. As such, computer vision concepts are prominently used in applications geared towards making sense of the visual world for the visually impaired, such as reading, location identification and way-finding, mobility, and object recognition. In this talk, we present the ideas behind some of these areas, give an overview of the current state of assistive technologies based on computer vision, and motivate future research in computer vision applications for people with low or no vision. In particular, we focus on some of the past and current research in computer-vision-based assistive technologies at the Smith-Kettlewell Eye Research Institute’s Rehabilitation Engineering Research Center, such as way-finding for wheelchair users, street sign and crosswalk detection, object identification through barcodes, reading digital displays, and indoor location identification through specially designed signs. We also note the need for a single platform for implementation of such technologies to (i) facilitate ease of distribution, (ii) eliminate the need to carry multiple application-specific devices, and (iii) reduce the need to learn to use new devices for each application. We argue that modern mobile phones provide such a platform as they have adequate processing power for most applications and incorporate multiple sources of information such as cameras, GPS receivers and accelerometers. We point out that computer vision is an invaluable tool for developing new assistive technologies, while also emphasizing the main problem in computer vision research, which is our limited understanding of how vision leads to comprehension.

R3: General Research Session 1: Implications for Education, Economics and Low Vision Rehabilitation

Moderators: James Nolan, PhD - Envision Low Vision Rehabilitation Center and the University of Kansas Medical School, Dept. of Ophthalmology;
Marilyn Schneck, PhD - Smith-Kettlewell Eye Research Institute RERC,
San Francisco, CA
1:30 pm - 3:30 pm, Madero

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1:30 Facing the Challenge of Neurological Vision Loss: Implications for Education
Carolyn Palmer, PhD: Flinders University, South Australia

Abstract: Children with neurological vision impairment present a unique challenge to educators. They are learners who receive and interpret information in a different way. Vision impairment has traditionally been associated with a problem with the eyes. There are a number of students with disabilities, however, who have neurological vision impairment as a consequence of acquired brain injury. Neurological vision impairment is a global descriptor that encompasses a wide range of behaviors, responses and visual abilities that have the potential to impede the individual’s functional abilities. This talk will focus on the implications for education for students with neurological vision impairment. It will define the condition, outline associated behaviors and provide an overview of educational intervention and important pedagogical considerations.

1:45 Patterns of Physical Activity among Youth with Vision Loss: Quantitative and Qualitative Findings
Deborah Gold, PhD: Canadian National Institute for the Blind,
Toronto, ON

Abstract: According to Health Canada, in 1996/1997 statistics, only 21% of Canadians aged 12 and over could be classified as sufficiently physically active during their leisure time to achieve optimal health benefits; this number is apparently even lower in the disabled population. The research specifically with the blind and visually impaired population is very limited; however, the existing research suggests levels of physical activity that are low as compared with not only the general population but also with other disability groups. This is great cause for concern given the well-documented consequences of physical inactivity, which include a heightened risk for heart disease, stroke, breast cancer, colon cancer, and developing a disability (or secondary disability). This talk presents findings of a CNIB research study that assesses physical activity patterns and levels of youths with vision loss. The study also explores some of the barriers to involvement in such activities and considers ways that youths use to overcome these obstacles (negotiation strategies). The study was conducted in collaboration with the Faculty of Applied Health Sciences at the University of Waterloo and therefore benefits from the expertise of professors with a specialization in physical activity as it applies to the lives of people with special needs. Research questions were: 1) What is the typical physical activity level of youth who are blind or visually impaired and how does this compare with the general

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population? 2) How do physical activity levels in the blind/visually impaired population differ by age, gender, vision level and type of school (special vs. mainstream) attended? 3) What forms of leisure activities are people who are blind or visually impaired involved in (and conversely which do they not engage in)? 4) What are some of the barriers encountered and what strategies are typically used to address these barriers? 5) To what extent are youth with vision loss using these strategies? Findings included: Greater levels of vision loss and being older were associated with lower levels of physical activity. Sighted youth were found to be more likely to participate in activities that are physically demanding. However, youth with vision loss were more likely than sighted youth to have participated in leisure activities that were less physically demanding (e.g., bowling, walking, etc). Youth with some usable vision experienced fewer constraints than youth with no usable vision in all three categories of constraints. There was some evidence that youth from segregated schools may perceive more constraints. Greater intrapersonal constraints were associated with lower levels of physical activity. Those who experienced many constraints but made extensive use of negotiation strategies were more physically active than those who experienced few constraints but made minimal use of negotiation strategies.

2:00 Health State Questionnaires: What Do They Say about Low Vision Populations?

Judith Goldstein, OD: Johns Hopkins University, Baltimore, MD

Abstract:

Purpose: To evaluate the responsiveness of the EuroQoL (EQ-5D) to vision-related functional ability loss in patients seen in low vision clinics.

Methods: Functional questionnaires including the EQ-5D, GDS, TICS, SF-36 and AI were administered by telephone to 188 low vision patients across 20 clinical practice sites (CPS) within the US. CPS consists of private-practice and university-based outpatient low vision rehabilitation centers. Each center employs at least one ophthalmologist or optometrist specializing in vision rehabilitation. The CPS are part of a larger network, the Low Vision Research Network (LOVRNET) and have been participating in the Low Vision Rehabilitation Outcomes Study (LVROS), a study of usual care which is in its second year of a pilot data collection. Separate Rasch analyses were performed on patient responses to the GDS, SF-36 physical (SF-PHY), SF-36 psychological (SF-PSYCH), SF-36 general health (SF-GH) and AI. EQ-5D responses were transformed to full health utilities to generate the EQ-5D US index. Raw scores were used for the TICS. The correlation matrix was analyzed with factor analysis using a varimax rotation.

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Results: From exploratory factor analysis, four independent factors were necessary and sufficient to explain 64% of the total variance. We provisionally identified these four factors (F) as psychological (1), physical (2), cognitive (3), and vision (4). F1 explained 72% of the variance in the GDS measure, 55% of the variance in the SF-PSYCH, 40% variance in the SF-PHY, 17% of the variance in the SF-GH, and 1% or less in the TICS and AI. 12% of the variance in the EQ-5D is explained by F1. F2 explains 87% of the variance in the SF-PHY, 22% in the SF-GH, and 10% in the SF-PSYCH. 3% or less of the variance in the GDS, TICS and AI load onto F2. 35% of the variance in the EQ-5D is explained by F2. F3 explains 37% of the variance in the TICS score, 8% of the variance in the SF-PHY and 4% of the variance in the GDS. None of the variance in the EQ-5D, SF-PSYCH, SF-GH or AI is explained by F3. F4 explains 93% of the variance in the AI. Consistent with prior work, the vision domain measured by the AI is independent of the physical and psychological domains. Less than 3% of the variance in the EQ-5D and almost no variance in the GDS, SF-PSYCH, SF-PHY, TICS and SF-GH are explained by F4. The mean EQ-5D for low vision subjects was 0.79. For all factors, a similar pattern of loading is seen with the EQ-5D and SF-GH. Only 49% of the variance in the EQ-5D can be explained by the four factors. Less than 3% of the variance in the EQ-5D can be explained by the vision factor (F4).

Conclusions: The variance in the EQ-5D does not load heavily on any one of the four factors identified, while most of the variance in the EQ-5D can be explained by the physical domain. With less than 2% of the variance explained by the vision factor, the EQ-5D is not an adequate measure of functional visual impairment. The EQ-5D should not be used as a primary outcome measure in studies involving low vision because of a lack of measurement precision in the instrument. It can however be an effective secondary outcome measure used to inform health care policy.

2:15 Beyond the Ordinary: Interfacing Expanded and Regular Curriculum for Students with Vision Impairment
Carolyn Palmer, PhD: Flinders University, South Australia

Abstract: This qualitative study investigates professionals' and parents' perceptions of the Expanded Core Curriculum (ECC) and the issues and challenges relating to the interface between it and the Regular School Curriculum. It argues that young people who are blind and vision impaired must have the same opportunities to access learning as their sighted peers. The issues and challenges that emerge from the data include the interface between the ECC and the Regular Curriculum, communicating its importance to class teachers, using the Individual Education Plan (IEP) to ensure relevant areas of the ECC

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are incorporated into the student’s program, professionals working in partnership to deliver the ECC, valuing and empowering classroom teachers, establishing role differentiation, Braille teaching and training, and development.

2:30 Exploring Barriers to Vision Rehabilitation Access and Utility amongst Seniors from Immigrant Communities

Deborah Gold, PhD: Canadian National Institute for the Blind, Toronto, ON

Abstract: We will present findings of a recent CNIB research project aimed at learning more about barriers and pathways experienced by seniors of South Asian and Chinese backgrounds in trying to access vision rehabilitation services. The study was conducted in three Canadian cities: Toronto, Calgary and Vancouver. In each city, focus groups were held with seniors from each language group. Separate focus groups were held for seniors who had used CNIB services and those who had not. Focus groups were held in the language of seniors and moderated by trained research assistants proficient in these languages. A survey was also conducted with CNIB staff to inquire about their experience working with seniors from these communities. Focus group transcripts were analyzed using NVivo7 qualitative research software by QSR; survey findings were analyzed using Survey Monkey descriptive statistics. Partnerships were developed with community organizations serving Punjabi-speaking and Chinese speaking (Mandarin and Cantonese) seniors in each of the cities. Community partners helped us to refine the design of the study, to identify seniors in their communities who were living with vision loss and to interpret the meaning of our findings in order to recommend next steps in service and research. Analyses revealed that barriers to access to service included language, transportation, a preoccupation with the medical side with vision loss, and a lack of awareness and familiarity with CNIB. A number of suggestions were provided on how to address these barriers.



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R4: How Low Vision Research has Translated into Clinical Practice

Moderator: Don Fletcher, MD - Smith-Kettlewell Eye Research Institute, San Francisco, CA

4:00 pm - 6:00 pm, Madero

4:00 Techniques Used to Quantify for Research Can also be Valuable in Clinical Low Vision Practice

Don Fletcher, MD: Smith-Kettlewell Eye Research Institute, San Francisco, CA

Abstract: Research comparison of variables of interest is facilitated by isolation and careful measurement. The clinical practice of medicine traditionally has demanded less precision but certainly can be advanced by evidence-based support of the treatment in question. Beyond directing treatment options, quantifying performance can also directly serve rehabilitation purposes. Four recent research projects provide clinical techniques which are useful in everyday practice.

The SK Read test is useful for measuring reading accuracy when contextual clues are removed. This measurement technique helps educate patients about the interplay of macular scotomas with their PRL. Patient awareness assists in developing compensatory eye movements. Reducing the error rate is a motivation for patients to practice rehab techniques.

Dynamic visual field testing provides a measure of mean latency for response to stimuli in the central visual field. This test is highly correlated to reading performance and reflects the patient’s ability to move their PRL around central scotomas. Reducing latency scores is motivating for patients to focus on compensatory eye movement training.

TIADL scoring provides pre- and post-training measures of rehabilitation performance in real world activities. It is useful clinically for putting the verbal history provided in the context of whether the patient minimizes or maximizes problems. It can also be used to motivate.

Tactile analogue scales of emotional reaction to vision loss provide a great starting point for these discussions and provide a somewhat objective mechanism for comparisons.

These examples show how research can directly translate into clinical care methodology.

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4:15 The Effect of Altered Stimulus Luminance on the Size of Scotomas Mapped with the Fletcher Central Visual Field Test
Rebecca Kammer, OD: Southern California College of Optometry, Fullerton, CA

Abstract:

Purpose: To develop and evaluate two caps to control the luminance and diameter of the output of a standard laser pointer (stimulus) used in a manual central visual field test when administered to subjects with wet age-related macular degeneration (AMD).

Methods: The Fletcher Central Visual Field (FCVF) test was administered on one eye of 8 subjects using a laser pointer with two different caps which altered the luminance of the stimulus. The first administration utilized a cap with a 1mm opening (cap1) and the second administration utilized the same cap combined with a 0.3 log neutral density filter (cap 2). The resulting scotomas were plotted on an 8.5"x11" recording sheet held at 57cm according to test instructions. Each set of scotomas (isopters) was quantified in area (mm²) using Scion tracing software and then compared for statistical significance. Inclusion criteria included >20/60 visual acuity, wet AMD and a history of a central scotoma based on chart review.

Results: A wilcoxon signed rank test was performed to determine if isopter areas were different using the two caps (one bright and one dim/using ND filter). The scotomas plotted using the filtered stimulus (cap #2) were larger by 90115 mm² on average (increase of 195%) (P=0.007). Upon further analysis, 4 of the 8 subjects had an initial scotoma that increased in area by 132787 mm² (increase of 144%) (p=0.05) and the second scotoma was still contained within the testing/field plot sheet. The other four varied in results: three were without initial scotoma (cap 1) but then had either a very large scotoma with two of the borders extending to the test/field sheet edge or the stimulus (cap 2) could not be seen at all. One had a small scotoma and then could not see the second stimuli (cap 2).

Conclusion: Several levels of luminance and size of the laser emission can be used allowing more sensitivity in plotting relative scotomas that are not dense but are still clinically significant. Within a small sample, the customized stimulus caps were effective in identifying two isopters when using the modified tangent screen (Fletcher Central Visual Field Test). With the test performed at 57 cm, each cm corresponds to 1 degree and therefore the recording sheet can enable manual perimetry over approximately 28 degrees horizontally and 21.5 degrees vertically. With four of the subjects having variable results with cap 2, it seems that further testing and development of the caps (modifying the

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neutral density filter or the size of the opening) may improve upon this convenient clinical test.

4:30 Can Patients with a Central Scotoma Develop a Functional Trained Retinal Locus?
Kim Schoessow, OTD: Massachusetts Eye and Ear Infirmary, Boston, MA

Abstract: Much of the research available regarding scotomas and preferred retinal loci (PRL) among maculopathy patients explores the natural history of PRL development and use. Large-scale studies have shown that most patients with central scotomas develop one or two PRLs within six months of vision loss and patients are most likely to shift their eyes up or to the right to fixate with the PRL.

However, patients with a central scotoma do not always function optimally with reading and activities of daily living. Patients with ring scotoma patterns tend to fixate within their central island, even when trying to focus on a larger target such as a face or television monitor. Other patients may develop a PRL in a location that is less than ideal, such as in a narrow area between a scotoma and the optic nerve. Patients with scotomas to the left, right, or inferior of fixation may have more scotomatous interference when reading than those with a superior eccentric viewing position. Can these patients develop a trained retinal locus (TRL) in a more functional location to replace or supplement their natural PRL? Does a TRL offer functional benefits in patients' daily lives?

Research on trained retinal loci indicates that they may be effective in improving reading ability. However, there is limited clinical data demonstrating whether trained retinal loci affect patients' function in reading and activities of daily living. This presentation will include case studies of patients with age-related macular degeneration who were trained during occupational therapy to use a retinal position different from their natural PRL as evaluated by a scanning laser ophthalmoscope (SLO). Implications for clinical practice and future research directions will be included.

4:45 Impact of Lighting on Visual Function and Occupational Performance
Monica Perlmutter, OT: Washington University, St. Louis, MO

Abstract: As a person ages, additional lighting is required for near vision tasks due to changes in pupil size, reduction of amount of light that is transmitted by

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the lens and the impact of age-related eye conditions, such as macular degeneration and cataracts (Sadun & Libondi, 2000). Current research regarding the low vision population and lighting relates to visual function under home and clinic lighting conditions, and the impact of lighting on reading performance and mobility.

Early studies established that lighting levels are very low in homes and that lower home lighting levels resulted in reduced acuity levels (Cullinan, Gould, Silver and Irvine, 1979; Silver, Gould, Irvine & Cullinan, 1978). Additional work demonstrated that very high levels of illumination are required for persons with macular degeneration (Bowers, Meek & Stewart, 2001; Eldred, 1989, Haymes & Lee, 2006) and that increased illumination allowed study participants to read with less magnification (Sloan et al, 1973).

Brunnstrom, Sorensen, Alsterstad & Sjostrand (2004) found that higher lighting levels increased ability to perform daily tasks such as pouring a drink and slicing bread. Mobility performance of persons with macular degeneration was studied under high and low levels of illumination; results indicated that lighting had an impact on mobility safety (Kuyk & Elliot, 1999).

Given the evidence noted above and that older adults spend the vast majority of their day at home (Horgas, Wilms & Bates, 1998), it is clear that home lighting environments deserve close attention from low vision professionals. General lighting principles and guidelines are available in textbooks and the literature, along with residential and public space lighting standards, but evidence regarding proper methods of home lighting evaluation and intervention is limited. This presentation includes an overview of the reasons that older adults require additional lighting and the impact of low vision and lighting on visual function and occupational performance. Results of a study that compared visual function and task performance under clinic and home lighting in older adults with glaucoma and proposed guidelines for objectively evaluating lighting in the home will be shared. Lastly, plans for future research in this area will be discussed.

5:00 Low Vision Rehabilitation for AMD
Dawn DeCarlo, OD: School of Medicine Dept. of Ophthalmology, Birmingham, AL

Abstract: Age-related macular degeneration (AMD) is a common presenting diagnosis in low vision clinics since it has profound effects on daily activities. Our previous research showed that patients with AMD had substantially lower scores on the NEI-VFQ than groups with other eye conditions and than normal

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controls. We also learned that people with AMD tend to cease driving, but that those who do continue to drive often self-limit their driving to maintain safety. Our latest research focuses on predictors of successful optical rehabilitation in AMD. To date, we have enrolled 122 patients. The NEI-VFQ, Center for Epidemiological Studies Depression Screener, Short Portable Mental Status Questionnaire and the Reading Behavior Inventory are administered pre- and post-rehabilitation. Visual acuity, contrast sensitivity, trial frame refraction and SLO microperimetry were measured for each participant. Devices were prescribed by an optometrist specializing in vision rehabilitation. Occupational therapy services were prescribed when indicated. Preliminary results show that the vast majority of patients benefit from optical low vision devices. Eccentric viewing training is only rarely needed, as evidenced by microperimetry results. This change is likely due to the widespread use of anti-VEGF medications. Data will be presented regarding change in reading behavior and NEI-VFQ scores as well as duration of device use. The relationship between scotoma, contrast sensitivity and visual acuity will be discussed as well as their relationship to device use.

5:15 Rescuing the Lesser Eye
Ron Cole, MD: Sacramento, CA; **Marilee Walker, OT:** Sacramento, CA

Abstract: Patients with AMD that have presented with profound central vision loss in one eye of years' duration, often consider the eye "blind" or having no vision. This occurs even when central vision begins to fail in the other eye. A program of concentrated visual activity for this lesser eye by occluding the better eye for short time periods has resulted in dramatic subjective benefits and improved objective measurements within a short time frame. A small series is presented and initial findings encourage studying this phenomenon in more detail.



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→ Friday, September 11

R5: The Impact and Remediation of Visual Field Loss

Moderator: Eli Peli, OD: The Schepens Eye Research Institute, Harvard Medical School, New England College of Optometry, Tufts University School of Medicine, New England Medical Center Hospitals, Boston, MA
8:00 am - 10:00 am, Madero

8:00 Visual Search and Mobility in Persons with Low Vision
Thomas Kuyk, PhD: Northrop Grumman Corporation, San Antonio, TX

Abstract: Visual search is considered a fundamental aspect of seeing and of importance in mobility. Despite this, there has been little research on visual search in the context of visual impairment and mobility difficulties. The goals of this study were to determine the characteristics of feature search (FS) in visually impaired (VI) persons, if FS ability was associated with mobility performance and if training on FS tasks improved mobility performance. FS performance was measured in 49 VI subjects and 24 with normal vision (NV). The task was to search for a 2x2o target among varying numbers of 1x1o distracters, spread across three field sizes. Mobility was evaluated on indoor obstacle courses under high and low light conditions. VI subjects were able to perform features search with high accuracy and reaction times (RTs) were not affected by differences in the number of distracters. However, VI subjects' RTs were significantly longer (1440 vs 914 ms) and their search speed was more adversely affected by increases in search area than NV subjects. In addition, better search performance in VI subjects was associated with better mobility performance with 38-76% of the variance in mobility measurements being accounted for by search speed. Finally, like persons with NV, VI subjects' FS performance improved with training and VI subjects who received FS training made fewer obstacle contacts (87%) under low light conditions than those who received no training. Even though VI subjects searched more slowly than NV subjects, neither group's performance was affected by the number of distracters, which is consistent with a parallel search. In addition, FS RT is a good predictor of mobility performance and FS training may lead to improved mobility performance.

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8:20 Preferred Retinal Locus (PRL)-Hand Coordination in a Manual Tracing Task
George Timberlake, PhD
University of Kansas Medical Center, Prairie Village, KS
Evanthia Omoshsharka
Kansas City VA Medical Center, Kansas City, MO
Barbara Quaney
Kansas City VA Medical Center, Kansas City, MO
Joseph Maino
University of Kansas Medical Center, Prairie Village, KS

Abstract:
Purpose: Despite the importance of manual tasks for activities of everyday life, there has been little investigation of the effects of macular scotomas on manual task performance. Macular scotomas may affect manual tasks by obscuring the hand or objects being manipulated. Our purpose is to document and describe the interaction of the scotoma, Preferred Retinal Locus (PRL), hand and fingers during manual tasks.
Methods: A video camera images the subject's hand and an irregular line called a "maze" in the Scanning Laser Ophthalmoscope (SLO). The video image is seen in the SLO by the subject whose task is to trace the maze with his index finger. Recorded SLO video images show the subject's hand and maze on the retina while the subject traces the maze. Positions of the PRL (determined by fixation), scotoma, tracing finger and maze were measured from digitized SLO video images. Five subjects with bilateral macular scotomas due to AMD and five visually-normal, age-matched control subjects were tested. SLO retinal maps were made showing the PRL, scotoma, normal foveal position and retinal positions of the fingertip during maze tracing. PRL and fingertip variability was described by $p=0.68$ bivariate ellipses.
Results: Scotoma subjects' PRLs were $3.2^{\circ} - 9.8^{\circ}$ eccentricity. Mean fixational stability (bivariate ellipse area) for controls and scotoma subjects was 1,602 and 12,717 minarc² respectively. Fingertip retinal positions clustered around the PRL or fovea, but the scotoma subjects exhibited 3 times the variability of controls (fingertip bivariate ellipse areas: 50.2 vs. 16.5 deg²). For the scotoma subjects, the fingertip was within the scotoma an average of 37% of the time. The scotoma obscured part of the maze more than 50% of the time. Maze tracing error (the area between the fingertip and maze when the fingertip was off the maze) was eight times larger for scotoma subjects than controls (1,205 vs.

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144 mm²). Scotoma subjects' PRLs were off of the maze 55% of the time while controls' foveas were off 36%. Scotoma subjects took an average of 80% longer to trace the mazes than controls (23 sec vs. 13 sec).

Conclusions: In the maze tracing task, fingertip movement is coordinated with the fovea or fixational PRL as shown by the clustering of fingertip retinal position near the fovea or PRL. Thus, the PRL plays the same role as the fovea in eye-hand coordination for the tracing task. The coordination is less accurate for scotoma subjects who made greater tracing error and required more time to trace mazes than controls. This less accurate performance may be due to scotoma obscurations of the maze and the fingertip as well as the decreased fixational stability and visual capacity of the PRL.

8:40 The Impact and Treatment of Visual Field Loss on Gap Detection Ability

Duane Geruschat, PhD: Maryland School for the Blind, Baltimore, MD

Abstract:

Objective: The purpose of this study was to determine how two types of low vision (loss of central or peripheral visual field) affect the ability to detect crossable gaps in traffic.

Method: Fully and partially sighted subjects stood at the crosswalk of entry and exit lanes of a two-lane roundabout. Subjects held a trigger which they squeezed when they believed they had sufficient time to cross the street. The instructions were to depress the trigger when they could cross to the other side. They were further instructed to release the trigger when they could no longer initiate a crossing. Trials were 2 minutes in duration with each subject experiencing six 2-minute trials for the entry lane and six for the exit lane. Two of the six trials were completed with ear plugs and sound-deadening headphones to isolate the effects of vision and vision/audition.

Results: The study included 10 subjects with AMD, 16 with RP or glaucoma, and 14 with full vision. As expected the subjects with AMD had reduced visual acuity (Mean = 20/160) while the subjects with RP or glaucoma had reduced visual fields (Mean = 30.78). The analysis shows that in general there is no difference for correct decisions with all three groups making good decisions 88 - 92% of the time. There is also no effect for the condition of occluded hearing. There is an effect for lag (the delay in identifying a crossable gap) with the AMD subjects demonstrating a significant delay compared to the peripheral field loss or fully sighted subjects. The AMD subjects also show a very high percent of variability in safety margin, which is the amount of remaining time

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before the next vehicle arrives at the crosswalk. Specifically the AMD subjects had between 50% and 300% timing inaccuracies compared with the other groups.

Discussion: Low vision subjects self-report that crossing the street is a difficult task. Our findings suggest that subjects with central field loss from AMD have the ability to make accurate decisions; however, they take more time to identify crossable gaps, and they have difficulty perceiving the time/distance of traffic reliably (safety margin). In practical terms this means that subjects with AMD have less time to cross the street, and they make more judgment errors when compared to subjects with peripheral field loss or to the fully sighted.

9:00 Driving with Visual Field Loss: Evaluation in a Simulator

Eli Peli, OD: The Schepens Eye Research Institute, Boston, MA;
Alex Bowers; Robert Goldstein; Aaron Mandel;
Matthew Bronstad; Amanda Albu

Abstract: Visual field loss may be expected to affect a driver's ability to detect a potential collision or other driving-relevant objects. Driving with hemianopia (the loss of half the field of vision) is prohibited in half the states and discouraged in others; however, it is permitted in some countries in Europe. Recent studies of on-road driving with hemianopia suggest that many patients with hemianopia may drive safely (with or without field expanders). In these studies, the main reasons for failing seem to be related to vehicle-control (lane position, steering) difficulties rather than detection failures. Central field loss (CFL), associated with age-related macular degeneration (AMD) and many other conditions, is treated in most jurisdictions as merely a loss of visual acuity without direct consideration of the impact of the central scotoma (blind area), or more specifically the position of the scotoma relative to the preferred retinal locus (PRL). We have been studying driving with visual field loss in a simulator where the environment and scenarios are more easily controlled than in an on-road evaluation, and can be equally applied for all subjects. For patients with hemianopia we found a wide variability in the ability to detect pedestrians in hazardous positions, with only 1 out of 12 subjects having detection rates at a (safe) level similar to that of normal controls. Head scanning appeared to be an effective compensation at intersections (more head scanning was associated with better detection); however, there was wide variability in the amount of head scanning, with some subjects failing to scan to the blind side at 30% of intersections. While statistically significant differences in vehicle control (lane position) could be found even between left and right hemianopes, the magnitude of the shifts in lane position were generally small and may represent an

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increasing of the safety margin on the blind side. The patients with hemianopia also had a slightly more variable lane position and were out of lane more often than normally sighted drivers. For patients with CFL, we found increased reaction times to pedestrians in all locations; however, the greatest increases were at locations on the same side as the scotoma relative to the PRL. These findings indicate that the detection performance of patients with CFL is affected not only by the reduced acuity, but also by the position of the central scotoma; in particular, drivers with a scotoma to the right of the gaze point will have very long reaction times for pedestrians about to step off the nearside curb.

9:20 Measuring the Impact of Visual Field Loss on Quality of Life
Robert Massof, PhD: Johns Hopkins University, Baltimore, MD

Abstract: There is considerable evidence that the visual cortex is partitioned into two neural processing pathways: dorsal and ventral. The dorsal visual pathway is associated with the largely unconscious visual perception of spatial-temporal relationships of our body to the environment and with visually guiding action. The ventral visual pathway is associated with conscious object perception and with object identification. The ventral pathway is sometimes called the “what” system and the dorsal pathway is sometimes called the “where” system. Visual field loss primarily impacts the dorsal pathway. Because much of dorsal pathway visual perception occurs at an unconscious level, visual field loss often goes unnoticed until it is far advanced. Many of the functional limitations associated with visual field loss are attributed by the patient to inattention or clumsiness, rather than to loss of vision. These unconscious effects of visual field loss might be the reason that glaucoma is often called the “sneak-thief of sight.” Nevertheless, even moderate visual field loss causes disability and increases risk of injury to the patient. In this presentation, we will discuss the effects of visual field loss in retinitis pigmentosa, glaucoma and stroke on everyday functioning and show how quality of life measures made with visual function questionnaires provide evidence of differential and independent effects of the dorsal and ventral visual pathways on the patient’s ability to perform everyday activities.

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**R6: From the Laboratory to the Clinic:
Translating Low Vision Research and
Development into Practice**

Moderator: Robert Massof, PhD: Lions Vision Research and Rehabilitation Center, Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, MD
10:30 am - 12:30 pm, Madero

10:30 Sensory Substitution Using Tactile Stimulation of the Tongue
Bill Seiple, PhD: Lighthouse International, New York, NY

Abstract: Sensory substitution refers to the use of one sensory system to provide some of the information lacking due to the loss of another sensory system. For individuals with vision loss as a result of eye disease or trauma, there is a primary peripheral transduction and/or transmission loss. Sensory substitution assumes that, for these individuals, input to the areas of the brain that mediate visual perception can be provided through, for example, touch and/or hearing. A major route of input replacement has been tactile sensation, traditionally using Braille text. Recently, touch has been coupled with video input in an attempt to provide richer input about the spatial information in the visual environment. Various areas of the body, including the chest, brow, fingertip, abdomen, forehead and back, have been used for tactile input. The recent development of a device (BrainPort, Wicab, Inc.) that uses electro-tactile stimulation of the tongue has spurred a resurgence of interest in sensory substitution. The device uses a video camera whose output is converted to tactile images.

In the current work, we have trained functionally blind subjects to interpret the tactile input of the BrainPort. Training included identification of shapes, motion, and letters and practice using the tactile input to perform orientation and mobility tasks. Surprisingly, all subjects were able to identify and localize high-contrast objects within the first hour of use. Patients varied in their abilities to use the device and co-factors, such as duration of blindness, previous Braille experience, guide-dog or cane use, and life style. After training, most of the subjects were able to identify large printed letters and numbers. One subject acquired the ability to quickly and accurately read words composed of four-inch letters. Other subjects excelled at using the device to orient and to locate obstacles, doorways and posted signs. Given the rapid learning we have observed, the device has potential as an additional aid for people who are blind.

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10:45 High and Low Tech Solutions to Improving Night and Day Vision

Thomas Kuyk, PhD: Northrop Grumman Corporation,
San Antonio, TX

Abstract: Traveling at night and during the day presents different problems for persons with low vision. Also, the nature and severity of the problems can vary depending on the cause of vision loss. In this presentation, high and low technology approaches to improving travel at night for persons with night blindness will be discussed. The focus will be on the application of night vision technology and portable lighting systems. A similar discussion for low vision in general will focus on filters for improving travel during the day in bright environments where glare may be a factor. The use of various fixed filters, neutral and colored, in spectacle formats and the potential of emerging technologies that offer the capability of electronically switching a filter on or off will be discussed.

**11:00 Research and Development of an Electro-Optical
Low Vision Enhancement System**

Robert Massof, PhD: Johns Hopkins University, Baltimore, MD

Abstract: The ideal low vision assistive device would meet the following requirements: 1) portable, 2) head-mounted, 3) binocular, 4) full field of view, 5) automatic focus for any viewing distance, 6) comfortable and cosmetically attractive, 7) compensate for changing viewing and lighting conditions to eliminate glare and maintain constant image brightness, 8) allow user control of the part of the image that is magnified and the amount of magnification, 9) customize contrast enhancement to optimally compensate for user's loss of contrast sensitivity, 10) pre-distort image to compensate for distortions in user's vision, 11) stabilize magnified images, 12) enable user to see an "instant replay," freeze and save the image, 13) compensate for visual field loss by alerting the user to important information outside the person's field of view, and 14) overlay graphics on the view of the world to highlight important information. These requirements motivated the development of the original Low Vision Enhancement System (LVES) in 1990. Progress toward meeting these requirements has depended on the development of enabling electro-optical and computer technology including high-resolution micro-displays, high-resolution micro video cameras, high-speed image processing in a small low power-consuming package, lightweight and long-life batteries, and lightweight, small footprint optical elements. Only some of the requirements could be met in the 1990s, many more can be met with today's technology. This talk will review past research and development on electro-optical low vision enhancement systems, and examine current technology and the prospect of meeting the ideal requirements within the next few years.

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**11:15 Peripheral Prisms for Hemianopia:
The Long Way from Concept to Market**

Eli Peli, OD: The Schepens Eye Research Institute, Boston, MA

Abstract: In 1996, at an ARVO Special Sunday Symposium, I presented the challenge of treating patients with visual field loss. I asked the large audience for ideas to address this. I asked anyone with any idea to talk to me after the symposium. Not even one person came forward. On the flight back, frustrated, I came up with the idea of peripheral prism as part of the whole concept of vision multiplexing as an approach for visual aids for field loss. I started experimenting with press-on prisms with patients in my practice. By 1998, I knew it was working. I was able to get a large NEI Biomedical Engineering Research Partnership grant to work on the concept. In 2001, I published a first case series (n-12) explaining the principle of peripheral prisms and showing results. In 2001, I looked for a roommate for my two bedroom apartment at ARVO. Karen Keeney from Chadwick Optical could not get a hotel room and someone referred her to me. She came with a suitcase full of prisms. By the end of ARVO, we had a plan for a SBIR grant, and we got it soon after that. We progressed through a number of mechanical design concepts and ended with a useable cosmetically acceptable device. This enabled us to get a second SBIR grant and we were able to complete a multicenter clinical trial to develop a new concept for oblique prism and set in motion a second randomized controlled trial now in its final stages. We found that having a product that works is not sufficient to get a product that is being used. A significant effort of education and writing was needed to get awareness and attention. The clinical trials were helpful in developing an experienced cadre of colleagues that witnessed the affectivity first-hand and told their colleagues about it. We are continuing the educational effort with a series of hands-on fitting workshops while we also continue research work. It took more than 10 years to bring the product to market with unusually good funding success from NIH. We are still at the very early stages of the process of getting the product to market in terms of reaching any significant penetration into the needed population. The main lesson I have learned is that it takes a collaborating team of researchers, clinicians and industry to bring even a simple product to market, and it takes a long time and significant funding and efforts to be able to introduce a new low vision device.

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R7: General Research Session 2:
Current Topics in Low Vision and
Vision Rehabilitation

Moderators: George Timberlake, PhD: University of Kansas Medical Center, Kansas City VA Medical Center, Kansas City, KS; Michael Floyd, MD, MPH: University of Kansas Medical Center, Kansas City, KS
2:00 pm - 4:00 pm, Madero

2:00 Understanding Photopsias and Light Show Phenomena in Retinitis Pigmentosa
Ava Bittner, OD: Johns Hopkins Wilmer Eye Institute, Baltimore, MD

Abstract: It has been hypothesized that photopsias in retinitis pigmentosa (RP) may be manifestations of spontaneous activity in compromised retinal cells or in microneuromas, mediated by inner plexiform layer connections formed during remodeling, involving self-signaling and which occur following photoreceptor loss in the degenerating retina. We conducted an internet-based survey to characterize photopsias in RP and obtained complete responses from 127 self-reported RP patients, and of those, 118 or 93% reported experiencing photopsias. Photopsias were described as phosphenes (slow, localized dots or shapes) by 71%, flashes (all or most of the field at once) by 58%, static noise (like on a TV without reception) by 31%, and fluorescence (a background glow) by 20%. The most commonly indicated shapes were crescents, arcs or semi-circles in 60%, sparklers or fireworks in 39%, and spots in 38% of respondents. The factors that were most commonly reported to be associated with an increase in photopsias were bright light in 57%, fatigue in 56% and stress in 51%. Almost half (48%) of those who have photopsias reported experiencing them before they were diagnosed with RP. 60% of respondents first noticed photopsias before age 30. 59% experience photopsias daily, 26% experience photopsias constantly, and 61% typically experience photopsias for only a few seconds at a time. 69% indicated that photopsias interfere with their vision. The location of photopsias only or mostly in the periphery vs. at least some centrally appears to be related to residual photoreceptor function assessed by self-reported performance of daily living activities, including reading without magnification, driving currently, and navigating easily in unfamiliar areas. Clinicians and researchers should be aware of their occurrence in RP and elicit this information as part of the patient's history to reassure patients.

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2:15 The Impact of Wet vs. Dry AMD
Lylas Mogk, MD: Henry Ford Center for Vision Rehab and Research, Livonia, MI

Abstract:
Purpose: Wet macular degeneration is broadly cited as the real problem of AMD, often with reference to Ferris, Fine and Hyman's 1984 study finding 10% of wet AMD responsible for 90% of the legal blindness caused by AMD. Since then, the vast majority of clinical and research attention has focused on wet AMD. The observation of many in vision rehabilitation, however, is that dry AMD is at least as big a problem as wet, possibly in part because of treatments for wet since 1984 (even prior to anti-VEGFs) and definitely in part because legal blindness is not an index of functional deficit. This study was undertaken to elucidate the relative impact on vision, function and lives of dry vs. wet AMD.

Methods: Retrospective chart review of new patients with AMD presenting to the CVR2 between from 1999 to 2003. Exclusion criteria were ophthalmological, physical or cognitive co-morbidities causing additional functional deficits. Information from 467 charts included visual acuity; contrast sensitivity; scotoma and PRL parameters; depression score; functional complaints; hours of rehabilitation required; and referral source. Fisher's exact tests were used for all variable categories but visual acuity measures for which Kruskal-Wallis tests were applied.

Results: Among 467 subjects, 207 had wet AMD (44.2%), 260 dry (55.7%); wet 38% male, 61% female; dry 25% male, 74% female (p=0.0166). Statistically significant differences found in visual acuities, with wet responsible for 59.3% and dry 40.7% of the legal blindness. Severe contrast sensitivity loss: wet 54.1%, dry 42.3% (marginally significant p=0.0556). Difficulty reading cited by 99.5% with wet and 98.8% with dry. Rehabilitation training required by 79% with wet, 73% with dry: 27% with wet and 17% with dry required 7 to 9 hours of training and 45% with wet and 51% with dry required 1 to 6 hours. (p=0.0026). Geriatric Depression Scale scores representing depression/ probable depression were similar: wet 29%, dry 26%.

Conclusions: Slightly more patients had dry than wet AMD. Wet AMD was responsible for more legal blindness than dry, although less than previously reported: 59.3% to 40.7% vs. 90% to 10%. Almost 100% of both groups had difficulty reading, a basic daily activity. Similar numbers in each group required rehabilitation training, though fewer hours were required for dry than wet. Our results suggest that both wet and dry AMD significantly impact function and quality of life, that the patients' experiences of functioning with

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each are sufficiently similar and that dry AMD, as well as wet, deserves recognition as a real problem by clinicians and researchers.

2:30 Slab It or Not

Joseph Hallak, OD, PhD: Nassau University Medical Center Dept. of Ophthalmology, East Meadow, NY

Abstract: Low vision patients often present with significant anisometropia naturally occurring or induced. When bifocals, high add or unequal adds are considered, the issue of vertical imbalance comes up. Simple measurements in a small clinical study help predict the practicality and acceptance of bifocals.

2:45 A Mixed-Methods Approach to Why People Choose Not to Access Low Vision Rehabilitation Services

Walter Wittich, PhD Candidate: Dept. of Neurology & Neurosurgery – Neuroscience, McGill University, Montreal, QC

Abstract:

Purpose: Low vision rehabilitation has been shown to effectively improve the ability to cope with vision loss. Affected individuals can regain visual function, mobility skills as well as improve their psychological adjustment. However, some patients choose not to access these services. The present investigation aimed to determine how people who refuse to access low vision rehabilitation differ from those who avail themselves of these services.

Method: A mixed-method approach, using both quantitative and qualitative techniques, compared 50 participants who knew about rehabilitation but chose not to go with 227 individuals who underwent rehabilitation. The quantitative analysis focused on variables such as depression, visual functioning, coping quality, as well as demographic characteristics, such as living distance from the service agencies and age. The qualitative analysis employed a series of focus groups during which participants were discussing awareness and benefits of low vision rehabilitation.

Results: The two groups only differed on their measure of visual function (VF-14), whereby individuals who went through rehabilitation had significantly lower scores, $p < .001$, $\eta^2 = .07$. The qualitative findings indicated that the stigma of utilizing a service with the words “blind” or “Braille” in the title deterred numerous eligible patients, since they did not identify as being part of such a marginalized group.

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Conclusion: The difference in visual functioning indicates that persons who are still able to conduct themselves more effectively may not perceive rehabilitation as beneficial or necessary (yet). In addition, the perception of rehabilitation as a service for those who are severely impaired or blind forms an important psychosocial barrier towards access. Individuals who underwent rehabilitation described overcoming their pride in order to regain their social participation.

3:00 Short- and Long-Term Effects of Vision Rehabilitation: Implications for Clinical Practice

Joan Stelmack, OD: Hines VA Hospital Blind Center, Hines, IL

Abstract:

Purpose: This study compares the short- and long-term outcomes of inpatient and outpatient vision rehabilitation programs for legally blind veterans within the Department of Veterans Affairs.

Methods: The VA Low Vision Visual Functioning Questionnaire (VA LV VFQ-48) was administered by telephone to 95 patients who received inpatient services at a VA blind rehabilitation center pre-rehab, 3 months post-rehab and 1 year from baseline and to 44 patients who received outpatient VA low vision services pre-rehab, 2 months post-rehab and 1 year from baseline. Overall visual ability, calculated from the self-reported ratings of difficulty performing 48 activities on the VA LV VFQ-48, is the main outcome measure.

Results: The overall visual ability measured at 1 year (.682 + .485) was significantly less than overall visual ability measured at 3 months post-rehab (.981 + .482) paired 2-tailed t tests, $p < .001$ for patients receiving inpatient blind rehabilitation. The overall visual ability measured at 1 year (1.36 + .71) was also significantly less than the overall visual ability (1.62 +.66) measured 2 months post-rehab for the outpatient low vision programs, paired 2-tailed t tests , $p < .02$.

Conclusions: Although treatment effects decreased over the 12-month follow-up period, both groups of patients whose data were analyzed were still statistically and clinically significantly better at their 1-year- follow up than before beginning treatment. A return for clinical evaluation and additional services after one year is recommended to maintain outcomes achieved in the rehabilitation programs.

Support: VA Rehabilitation Research and Development Service

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→ Saturday, September 12

R8: Balance, Mobility and Falls:
Theory and Practice

Moderator: J. Vernon Odom, PhD: West Virginia Eye Institute,
West Virginia University, Morgantown, WV
8:00 am - 10:00 am, Madero

**8:00 Fall Risk, Dynamic Visual Acuity, and Balance in Visually
Impaired Individuals**
Courtney Hall, PhD: Atlanta VAMC, Decatur, GA

Abstract: I will discuss clinical assessment tools that have proven useful in identifying fall risk in older adults and whether their usefulness holds in individuals with impaired vision. Both the visual and vestibular systems are critical to the maintenance of gaze and postural stability. These two systems interact directly via the vestibular ocular reflex to maintain gaze stability during head movements. Visual acuity during head movement (dynamic visual acuity, DVA, a functional measure of gaze stability) predicts fall risk in patients with vestibular hypofunction. In individuals with vestibular loss, DVA may relate to the severity of vestibular loss and therefore be a good estimate of fall risk. However, this relationship does not appear to hold up in individuals with impaired vision. I will present findings of the relationship between dynamic visual acuity, fall risk and balance from our research in individuals with retinitis pigmentosa (RP). Visual changes due to RP include loss of night vision, poor spatial accuracy and increased threshold for motion discrimination. Although half of the participants in this study were considered at risk for falls as measured by gait assessment and 75% had actually fallen, there was little concordance between fall history and fall risk. Based on these preliminary data, standard tests of balance and gait utilized in physical therapy do not adequately identify fall risk in individuals with RP. We will discuss development of alternative methods of assessing fall risk in visually impaired individuals.

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8:20 Fall Risk, Mobility Outcomes, and Accountability
Christopher Ray, PhD: Dallas VAMC, University of Texas at
Arlington, Arlington, TX

Abstract: This symposium will discuss both lab-based and “real world” evidence related to physical functioning, fall risk and mobility in individuals with vision loss. The lab-based data will highlight physical factors that are modifiable and contribute to increased fall risk and reduced mobility. These differences and potential interventions that target reductions in the rate of physiological decline while preserving and potentially restoring independent functioning in adults with vision loss or transitioning towards visual impairment will be discussed. The “real world” focus will present data that quantifies mobility utilizing GPS and accelerometers to track participants before and after their rehabilitation program to document changes in travel and provide a measuring stick for future interventions that seek to improve current “best practice” for mobility outcomes in individuals with vision loss. These discussions will provide clinicians with support for physical interventions and monitoring techniques that can be used to document adherence and track mobility outcomes.

8:40 Balance, Mobility, and Falls
Duane Geruschat, PhD: Maryland School for the Blind,
Baltimore, MD

Abstract: This presentation will describe the opportunities and challenges that are provided by low vision in the context of orientation and mobility. The first part of the presentation will offer a theoretical perspective on mobility and highlight the findings of research that identify the major problems of travel with low vision. Visual mobility, blind mobility, and low vision mobility will be compared and contrasted. The analysis will propose that travel with low vision requires a broader range of travel skills than travel with either full vision or functional blindness. For example, walking the same route at noon and at 9 p.m. requires a very different set of travel skills for the person with low vision who can travel at noon with remaining vision but is functionally blind during the evening walk. The implications of this for safety (fear of falling) and the effect of O&M instruction will be discussed.

Low vision mobility will be described in terms of the three biggest challenges – specifically managing changes in illumination, changes in elevation, and crossing the street. The implications and management of low vision will be described in the context of these three challenges. For example, as the visual environment changes (illumination/contrast) this results in changes of visual

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ability. The enhancement of low vision through the use of multiple sunglasses, the selection of time of day, and other O&M strategies will be presented. Changes in elevation pose a major threat to safety, especially balance and falls. Strategies for reducing the risk of falls and the fear of falling will be presented. These include modifying the environment and the use of simple long cane techniques. Finally, crossing the street has become increasingly more difficult. Research will be presented that shows the visual behavior of pedestrians with low vision while crossing the street. Through the use of a portable eye tracker, we have evaluated the visual behavior of pedestrians with low vision as they cross the street. Our findings demonstrate that the subjects do not access the pedestrian signal to increase the safety of their crossing. We have also evaluated the time-to-contact judgments of subjects' central and peripheral field loss, finding that central field loss causes a delay in the identification of crossing opportunities and decreased safety. The implications for practice will be described, including the need for improving the street crossing environment to increase safety.

9:00 Are Pedestrians Able to Make Correct Street-Crossing Decisions Using Only Auditory Information?
Shirin Hassan, OD, PhD: Indiana University School of Optometry, Bloomington, IN

Abstract:
Purpose: This study aimed to determine the accuracy of normally-sighted, visually impaired and blind pedestrians at making correct street-crossing decisions using only auditory information.

Methods: Using a 5 point rating scale, safety ratings for vehicular gaps of different durations were measured along an unsignalized, two-lane street of one-way traffic. Safety ratings were collected from 12 normally sighted, 10 visually impaired and 10 blind subjects for 8 different gap times under the sensory test condition of hearing only. A subject's street-crossing decision was deemed "safe" when the subject's street-crossing time was less than the gap time. The converse was true for "unsafe" street-crossing decisions. The percentage of correct street-crossing decisions (i.e. Correctly identifying "safe" and "unsafe" trials) was determined for each subject group and gap time.

Results: We found that blind subjects made significantly more incorrect street crossing decisions for gap times that were between 2, 3 and 4 seconds shorter than the minimum time required for a safe crossing ($p<0.05$). For gap times that were up to 1 second shorter than the minimum crossing time, the

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performance of the normally sighted subjects dropped significantly from that of the visually impaired subjects ($p=0.01$) to a level similar to that of the blind subjects ($p=0.57$).

Conclusions: The reliability of using auditory information for making street-crossing decisions depends on how far away the approaching vehicle is from the pedestrian. It appears that blind pedestrians may benefit from training to improve their detection and/or interpretation of vehicular gap times.

This work was supported by NIH Grant R03EY014874-04.

9:20 Visual Perception Deficits: Relationship to Balance, Mobility and Falls in Patients
J. Vernon Odom, PhD: West Virginia University Eye Institute, Morgantown, WV

Abstract: Falls are a major health hazard. Impaired balance and gait are among the factors which lead to increased falls. Balance is controlled by multiple sensory and motor systems. However, one important system which aids in the stabilization of balance is the visual system. Ocular diseases limit the ability of vision to stabilize balance. This presentation will review data which indicate that vision loss is not limited to basic visual functions such as visual acuity and contrast sensitivity, but includes other higher order visual functions such as motion perception and texture perception which may be crucial to maintaining balance and controlling mobility. Data will be presented which indicates that some function appear to be more affected in age-related macular degeneration than in diabetic retinopathy.

R9: Accessibility of Small Visual Displays

Moderator: Ronald Schuchard, PhD: ASR® Device Study Group, Atlanta VA Rehabilitation R&D Center of Excellence, Emory University, Atlanta, GA
10:30 am - 11:30 am, Madero

10:30 Understanding the Barriers Posed by Small Visual Displays to People with Low Vision
Lee Huffman, BA: American Foundation for the Blind, Huntington, WV

Abstract: Small visual displays (SVDs) are commonplace, yet visually impaired people continue to report serious problems using them. Understanding which

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SVDs are the most problematic for people with low vision requires surveying people with visual impairments to determine the characteristics of the display that cause the most problem. This presentation discusses research being conducted by AFB TECH in its efforts to more fully understand the specific devices with small visual displays that present the most significant barriers to independent daily living for people with low vision.

Objectives:

- Determine how difficult it is for people with low vision to use devices with SVDs.
- Determine which devices with SVDs create the most significant problems for people with low vision.
- Determine how people with low vision access information presented on SVDs.
- Determine which specific characteristics of SVDs people with low vision would most like to see improved.
- Determine which products with SVDs are the most appropriate to acquire for AFB TECH's SVD database.

Methods: In phase one, two surveys, with identical questions, were posed to low vision readers of AFB's on-line magazine AccessWorld and mentors with low vision in AFB's CareerConnect program.

When answering questions, respondents were able to check all answers that applied to them, and they were given the opportunity to write in specific information about brands and model numbers of products causing difficulty.

In phase two, telephone interviews of the survey respondents will be conducted to gain additional information about their use of products with SVDs.

Results: In phase one, according to survey respondents, when using products with small visual displays, most indicated cell phones were the most problematic devices. Closely following cell phones were digital cameras, point of sale devices, self-service kiosks, and office equipment.

The majority of survey respondents indicated devices with small visual displays were "very difficult to use most of the time." When asked how they generally accessed information on small screen displays, the majority indicated they used their functional vision and held the device close. This choice was closely followed by those indicating they asked another person for assistance.

When asked what they thought would help them better use products with SVDs, most indicated larger fonts, followed by increased contrast between the letters and their backgrounds, and reducing glare on the display.

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Discussion: Products with SVDs are becoming more and more commonplace. While they can provide a product with a multitude of functionality, they are very difficult, if not impossible, to use for people with low vision.

Conclusion: SVDs embedded in today's electronic devices pose a barrier to total participation in society for the over 20 million Americans who report difficulty reading even with contacts or glasses.

Future Work: Based on the results of the surveys from phase one, we were able to identify patterns in the data which will provide valuable input into AFB TECH's product evaluation plans. Several respondents provided contact information and expressed interest in being contacted concerning their experiences using small visual displays and their willingness to assist with future research. In phase two of our project, we will use information from these volunteers as a means of selecting products to evaluate and incorporate into AFB's SVD product database.

10:45 Graceful Transformation: The Concept, Practice, and Implications for the Accessibility of Small Handheld Device Use
Shannon Riley, MA: Envision Low Vision Rehabilitation Center, Wichita, KS

Abstract: Over the past 5 to 7 years, the explosive growth of the number and variety of 1) small handheld devices used to access the internet and 2) applications designed to interact with the internet in new and different ways has resulted in significant challenges for both web content developers and end users with impairments, particularly in terms of accessibility. For web content developers, difficulties arise in creating web interfaces that are equivalent in terms of information and structure for both full size computer screens and the reduced screen size of handheld devices. For impaired end users, consistency of the interface, including information and structure, regardless of device or size of the screen, is of major importance. This presentation introduces the theme and practice of graceful transformation through application of the WCAG 2.0 guidelines and addresses the challenges of both web content developers and impaired end users. The benefits of increased efficiency and interface consistency will also be discussed.

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11:00 A Procedure for Measuring Image Quality in Small Visual Displays

Mark Uslan, MA, MS:

American Foundation for the Blind, Huntington, WV

Jack Smith, PhD:

Marshall University, Huntington WV

Ron Schuchard, PhD:

ASR® Device Study Group, Atlanta VA Rehabilitation R&D Center of Excellence, Emory University, Atlanta, GA

Abstract: Small visual displays (SVDs) are commonplace, yet visually impaired persons continue to report serious problems using them. Understanding why SVDs are problematic requires taking measures of the display and human vision, and then using a metric to successfully predict if the display is readable. Barten’s SQRI metric is used for predicting the quality of large displays. It is based on the individual’s contrast sensitivity function (CSF), which is the ability to discern between different levels of luminance in a static image, and the display’s modulation transfer function (MTF), which plots contrast as a function of spatial frequency. An MTF measurement can be achieved through a mathematical operation – a Fourier transform of a high-resolution digital image of the display.

Hypothesis: The MTF for a SVD can be combined with the CSF of a visually impaired individual to compute Barten’s SQRI metric and predict the readability of the SVD.

Objectives:

- Develop an optical system and procedure to measure an SVD’s MTF.
- Compare this MTF profile with an individual’s CSF profile, by computing Barten’s SQRI index as a measure of overlap, and predicting that individual’s ability to read the display.
- Compare such predictions with results for a group of visually impaired individuals with measured CSFs, using the same displays.

Methods: The apparatus is comprised mostly of commercial off-the-shelf (COTS) components, including a computer-controlled digital camera. The software for controlling the camera, capturing the images, and doing standard image analysis are also mostly COTS. The MTF and SQRI computations, including the Fourier transforms and statistical analysis, are done in MATLAB. The SQRI is based on Barten’s work and uses a standard or user-supplied CSF profile.

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The apparatus setup and analysis are driven by the same industry standards used for measuring contrast, MTF and other characteristics of larger displays where grid patterns are displayed at will. Special attention is paid to the field of view (solid angle), color temperature of the light, and camera settings that affect resolution, contrast and other image qualities. A designed set of experiments for all the variables was conducted to help calibrate and optimize the setup.

Results: Several SVDs that use LCDs and Amazon’s new Kindle “E Ink” display were characterized. A range of CSF profiles, representing different levels of visual acuity, have been used to generate corresponding SQRI metrics for these SVDs. Preliminary results of a study at the Atlanta VA Medical Center show a strong correlation between the predicted and measured degree of readability.

Discussion: Predicting the readability of SVDs can lead to significant developments including the ability to match a product to an individual, and SVD standards.

Conclusions: A viable means of measuring the readability of SVDs for visually impaired individuals has been developed and applied to a variety of devices with very positive preliminary findings.

Future Work:

- Measure the effects of viewing angle and glare.
- Develop standard procedure for handling back-lit and light-emitting displays.

11:15 Visual Display Reading Problems and Solutions

John Brabyn, PhD: Smith-Kettlewell Eye Research Institute, San Francisco, CA; **H. Shen; W. Gerrey; J. Coughlan; T. Fowle**

Abstract: The trend in modern instruments, appliances and devices of all kinds towards the incorporation of visual displays, whose output is essential to operation of the system, creates severe difficulties for blind and visually impaired consumers. For people with low vision, difficulties ensue from the fact that the displays are often small and of low contrast. For blind individuals, there is often no practical way of operating the device at all. In some cases (for example, that of a blind milling machine operator using CNC machines with digital readouts) it is possible to solve the user’s problem by engineering an alternative output system using sound or touch – naturally an expensive approach. In some cases, it is possible to achieve a work-around by such techniques as learning button-pressing sequences that achieve partial operation of the device without feedback from the display. A third approach is to use

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computer vision techniques to design an intelligent reader that can capture an image of the display and analyze it to extract the information being displayed. All of these techniques have a substantial history, and this presentation will discuss their pros and cons with examples from the authors' experience, including custom modifications of workplace instrumentation, the development of a "customer check list" to help blind and visually impaired consumers in the appliance shopping process, and progress on a new cell phone-based computer vision display reader with speech output.

R10: The Psychological Impact of Low Vision

Moderator: Shirin Hassan, OD, PhD: Indiana University School of Optometry, Bloomington, IN
2:00 pm - 4:00 pm, Madero

2:00 Fluctuations in Vision Associated with Sleepiness and Perceived Stress in Retinitis Pigmentosa
Ava Bittner, OD: Johns Hopkins Wilmer Eye Institute, Baltimore, MD

Abstract:

Purpose: Visual acuity (VA) and contrast sensitivity (CS) measures are 2-3 times more variable in legally blind retinitis pigmentosa (RP) patients with VA <20/40 than in normally sighted individuals. RP patients indicate that variations in vision are often related to stress or fatigue; however, these associations have not been formally tested previously.

Methods: Pilot data from 7 RP subjects were obtained with PC-based binocular VA, CS and visual field (VF) tests performed at home at randomized times, twice weekly for 8 weeks, for a total of 12-16 measures per subject. Subjects' VA ranged from 0.0 to 1.4 logMAR and all had a VF diameter <20° in the better eye. Prior to each vision test session, subjects indicated if their vision was the same as usual, or slightly better or worse than usual. Data regarding possible associations with perceived stress or sleepiness were obtained with PC-based administration of validated questionnaires after each vision test session.

Results: At times when subjects indicated that vision was slightly worse than usual, VA was on average lower by 0.10 logMAR (95% CI: -0.05, 0.25; p=0.18), while CS (average decrease of 0.03 logCS; 95% CI: -0.09, 0.03; p=0.30) and VF (average change of 11.2cm2; 95% CI: -4.4, 26.7; p=0.16) did not statistically

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significantly vary with the vision ratings. At the times when subjects reported slightly worse vision than usual, they never reported being wide awake.

We found a statistically significant relationship between sleepiness and reduced CS by 0.15 logCS on average (95% CI: 0.095, 0.20; p<0.001), but measured VA (average decrease of 0.005 logMAR; 95% CI: -0.07, 0.06; p=0.88) and VF (average decrease of 7.4cm2; 95% CI: 0.13, 14.6; p=0.046) were not statistically significantly associated with sleepiness. Smaller VF area was associated with increased subjective sleep disturbance. There was a statistically significant decrease in VA associated with increases in the perceived stress scale score in 3 of 7 subjects who had a wide range of stress levels, but CS and VF were not related to stress.

Conclusions: These preliminary data suggest that vision and psychosocial factors may be related to each other; in particular, associations of VA with stress, and sleepiness with CS are proposed. Further work is needed to establish a better scientific understanding of these relationships and create a profile of RP patients who are most susceptible to these fluctuations.

2:20 A Trend Towards Reduced Quality of Life Scores in Some Patients Recovering from Left Hemispatial Neglect
Kevin Houston, OD: Indiana University School of Optometry, Indianapolis, IN

Abstract: Hemispatial neglect affects over 65% of patients who have experienced an acute right hemispheric stroke. Patients with hemispatial neglect have a reduction in awareness of the sensory information (visual, auditory, kinesthetic) on the left side of the body, which can be total or partial. A hallmark of the condition is anosognosia, a term describing the patient's denial or lack of awareness of their physical or sensory impairments. Patients in acute rehabilitation facilities with severe neglect will often report having no visual problems, despite having left homonymous hemianopsias and inability to detect any visual stimuli to the left of their physical midline. Anosognosia occurs as a separate entity from dementia or other cognitive impairments of awareness and reasoning. In fact, even patients with very severe acute neglect are typically able to participate in conversation, follow commands necessary for examination, provide accurate history, and demonstrate reasoning ability. In a large percentage of patients with acute neglect, spontaneous resolution occurs. As anosognosia dissipates, it might be predicted that depression would increase as the patient becomes aware of their deficits. Nine patients with acute neglect were enrolled and administered the Stroke Specific Quality of Life

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(SSQOL) initially, then every 2 weeks for 8 weeks. Results found patients with severe anosognosia to have much higher SSQOL to neglect score ratio. The ratio of SSQOL to Function Independent Measure (FIM) scores was also measurably skewed in patients with severe anosognosia. Impact of anosognosia for visual impairments compared to physical impairments will be discussed.

2:40 Motivations and Barriers in Several Target American Populations

Wanda Hamilton, BA: AMD Alliance International, Toronto, ON

Abstract: In 2008, American-based members of AMD Alliance International collaborated in a research program designed to assess the main motivators and barriers to seeking eye examinations among different populations of interest. Other objectives of our research included gauging the levels of awareness and understanding of AMD among the different populations of interest, and determining the best channels of communications to target each population. This presentation will provide an overview of research methodology and findings, summarize best practice recommendations, and use the research program to illustrate key learnings and best practices in multi-agency collaboration.

3:00 Determinants of Resilience among Family Members of Persons in Low Vision Rehabilitation

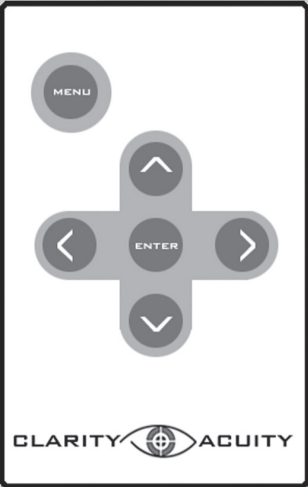
Laura Dreer, PhD: University of Alabama at Birmingham, Birmingham, AL

Abstract: Adjustment to low vision rehabilitation occurs within a social context. Family members assisting persons with low vision have been found to be at risk for problems with depression along with other negative health outcomes which may compromise their well-being and assistance they provide (e.g., Bambara, Wadley, Owsley, Martin, Porter, & Dreer, 2009). This research presentation is designed to present on resilience factors associated with adaptive family adjustment to low vision rehabilitation. This presentation will focus on family factors such as hope, gratitude, problem-solving and kindness and their relationship to positive outcomes among family members and patients in low vision rehabilitation. Understanding factors associated with successful adjustment will help to inform health promotion and intervention efforts to enhance outcomes in low vision rehabilitation.

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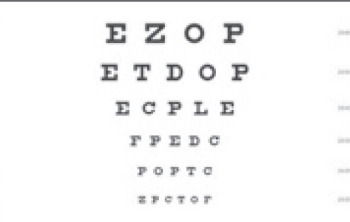
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Speakers

Speakers are listed alphabetically followed by the sessions they are presenting and their biography. If a session number is preceded with the letter S, see the Sessions section for a description. If preceded with a W, see the Workshops section.

Lori Adamek, OT, CLVT

S16: I Can't See Your Nose: The Essential Role and Benefit of Scotoma/PRL Training in Rehabilitating Individuals with Vision Loss

S27: Why Can't Grandma Shop? Assessing Safety and Accessibility in Communities and Getting Changes Made

Lori Adamek is a staff occupational therapist and certified low vision therapist for the Henry Ford Health System Center for Vision Rehabilitation and Research. She earned a Bachelor of Science degree in occupational therapy from Western Michigan University. Prior to joining the Center for Vision Rehabilitation in 2002, Lori gained clinical experience in psycho-social and physical rehabilitation. In addition to daily treatment of patients, she gives presentations to professional and local senior communities on vision rehabilitation. Lori is co-manager on a second community grant project that is focused on evaluating, training and educating local businesses and communities on environmental modifications to improve safety and services for low vision seniors. Lori is a strong advocate for increasing public awareness of low vision.

Gary Asano, OD

S30: Fields, Filters and Fitting the Prescribing Regimen to the Low Vision Patient

Dr. Gary Asano has been actively prescribing for low vision patients since 1980. He was in private practice for 26 years until 2006, and has been a staff optometrist with the Center for the Partially Sighted since 1981. He has been a Fellow of the American Academy of Optometry since 1987. Earlier this year, he formed a Low Vision Section in the California Optometric Association that comprises more than 60 members, and held a state LV meeting in late July for ODs and OTs at the new optometry college at the Western University of Health Sciences in Pomona, CA. He is an adjunct clinical faculty with the Southern California College of Optometry and a residency preceptor.

Annette Babinski, OT, CLVT

S11: The E Word: How Do We Get Grandma to Exercise?

S16: I Can't See Your Nose: The Essential Role and Benefit of Scotoma/PRL Training in Rehabilitating Individuals with Vision Loss

Annette Babinski is a staff occupational therapist and certified low vision therapist at the Henry Ford Health System Center for Vision Rehabilitation and Research

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Center. She had worked for 14 years in inpatient physical rehabilitation as well as in the home care setting. The adults she treated had diagnoses including: CVA, TBI, Parkinson's disease, diabetes, amputation, general orthopedic and cognitive impairments. She is a strong advocate for encouraging fitness and movement for her patients as a means of promoting physical and mental wellbeing.

Cynthia Bachofer, TVI, CLVT

S9: Maximum Speed: Increasing Computer Proficiency of Students with Low Vision

S26: Getting in Charge of Getting Around

Cynthia Bachofer is currently serving as an instructor in Special Programs at the Texas School for the Blind and Visually Impaired in Austin, TX. She previously served as a teacher of students with visual impairments with Project Providing Access to the Visual Environment (PAVE) at Vanderbilt University, Nashville, TN. She is continuing work on her PhD at Vanderbilt. Her proposed dissertation study is "The Psychosocial Impact of Long Term Optical Device Use by Young Adults with Low Vision." Ms. Bachofer previously served as a literacy project leader with VISTA (Volunteers in Service to America) in Nashville and as an English Instructor at both the secondary and post-secondary level in Kansas.

Joseph Bacotti, MD, FACS

S14: I See What You Are Saying

Dr. Joseph Bacotti is a board-certified ophthalmologist in private practice located in Mineola, NY. Dr. Bacotti graduated from Adelphi University, Garden City, New York, in 1973 and attended medical school in Monterrey, Mexico. He received his degree in Medicine and Surgery in 1978 and completed his internship at Winthrop University Hospital, Mineola, NY. Continuing his education, Dr. Bacotti completed his residency in Ophthalmology at the Nassau County Medical Center, East Meadow, NY, in 1982. Dr. Bacotti has been a member of the Mineola Lions club for the past 6 years. Dr. Bacotti lectures for the Lion's district on diabetes and glaucoma and is Lions co-chair for sight.

Janet Berthiaume, OT

S7: Bioptic Driving and Neuro-Optometric Rehabilitation

Janet Berthiaume received her degree in Occupational Therapy from Eastern Michigan University in 1990. She has worked in Vision and Driver Rehabilitation at William Beaumont Hospital in Royal Oak, MI, for the past 16 years and has lectured on vision rehabilitation and driving, low vision/telescopic driving and elderly driving.

She received the Advancement of Sciences Award from the Neuro-Optometric Rehabilitation Association (NORA) in 1997, the President's Award in 2005 and Fellowship in 2007. In 2006, she was

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named one of Therapy Times’ 25 Most Influential. Berthiaume served on the NORA Advisory Council from 2002 to 2004 and currently serves on the NORA Executive Board as Secretary/Treasurer as well as the Filippis Foundation Board.

Michelle Bianchi, OTR/L, CLVT

S46: A Review of Occupational Therapy Techniques for Treating Ring-Scotomas

Michelle Bianchi is an occupational therapist specializing in vision rehabilitation at the National Retina Institute (NRI). Since 2005, she has helped many patients with low vision maximize their safety and independence with their desired activities of daily living. Michelle earned a Bachelor of Science degree in both Psychology and Occupational Therapy & Occupational Science from Towson University. Currently, she is pursuing a combined certificate in low vision and Master’s degree in Occupational Therapy at the University of Alabama at Birmingham. Ms. Bianchi has completed internships at Maryland General Hospital’s Bryn Mawr Rehabilitation Traumatic Brain Injury Unit, Kennedy Krieger’s Inpatient Hospital, Greater Baltimore Medical Center’s Transitional Care Unit, and The Sheppard and Enoch Pratt Hospital’s Dual Diagnoses of Addiction and Affective Disorders Unit. She was the American Occupational Therapy Association’s recipient of the 2001 Henrietta Price Scholar Award. Michelle has over 10 years of occupational therapy experience, including working with patients recovering from traumatic brain injury and physical disabilities.

Michelle is a member of the American Occupational Therapy Association and the Maryland Occupational Therapy Association.

Julia Burgos

S34: Por Tu Familia (For Your Family): American Diabetes Association’s Latino Initiatives Health Campaign

Envision 09 Keynote: The Epidemic of Diabetes - Remediation through Professional Collaboration, Advocacy, Research and Education

Julia A. Burgos is the National Director, Latino Initiatives at the American Diabetes Association (ADA). Julia is responsible for the expansion and oversight of Por Tu Familia, ADA’s Latino Initiatives Program. She works to develop programs and train the Latino program staff throughout the country to broaden their reach in the Latino community about the seriousness and complications of diabetes.

Rebecca Coakley, TVI, CLVT

S29: A Practical Approach to Children’s Low Vision

Rebecca Coakley graduated from Marshall University with a Bachelor’s degree in Education, specializing in elementary and mentally impaired, and later received a Master’s degree in Leadership Studies/Administration from West Virginia Graduate College. In 1990, she received a Blind and Visually Impaired Certificate from the University of Virginia. Rebecca has

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worked in the field of visually impaired since 1989. She is currently an adjunct professor for Marshall University and West Virginia University. She is a certified low vision therapist.

Ronald Cole, MD

W3: Helping Patients Successfully Navigate Central Visual Field Loss: Testing and Training

Ronald Cole, MD, is a founding member of Medical Vision Technology and has been in private practice in Sacramento since 1976. During the first 20 years, his emphasis was on medical and surgical vitreoretinal disorders. Dr. Cole has served on many committees at Sutter Medical Center and had numerous positions in the Alta California Ophthalmological Society and the California Academy of Ophthalmology. Teaching has always been a high priority and he currently has an appointment as Clinical Professor in the UCD Department of Ophthalmology. For the last 10 years, Dr. Cole has devoted the greatest part of his time to developing a low vision rehabilitation center at MVT which provides a variety of services, including the assistance of an occupational therapist to patients with permanent vision loss. His involvement in this field has been at the local, state and national level. This includes ophthalmology representative to Joint Action Committee for the Blind and Visually Impaired in California and member of the American Academy of Ophthalmology Low Vision Rehabilitation Taskforce (Smartsight).

Michael Crossland, OD, PhD

S24: The MP1 Microperimeter as a Clinical and Rehabilitation Tool

Michael Crossland is a Research Fellow in Visual Neuroscience at the UCL Institute of Ophthalmology and a Specialist Optometrist at Moorfields Eye Hospital NHS Foundation Trust, London, UK. Dr. Crossland’s major research interest is in the assessment and rehabilitation of people with central vision loss caused by macular disease. His research focuses on the development and use of the preferred retinal locus. He has 20 publications in peer-reviewed literature and has been invited to speak in the UK, France and the US on this topic. Dr. Crossland also spends one day per week working as an optometrist in a busy hospital-based low vision clinic. He is a member of the College of Optometrists (UK) and a Fellow of the American Academy of Optometrists.

Mary Ellen Daniel, OT, CLVT

S11: The E Word: How Do We Get Grandma to Exercise?

S27: Why Can’t Grandma Shop? Assessing Safety and Accessibility in Communities and Getting Changes Made

Mary Ellen Daniel has been an occupational therapist and a certified low vision therapist for nine years with the Henry Ford Health System’s Center for Visual Rehabilitation. Her work experiences have included evaluation and treatment of adults, adolescents and seniors in inpatient, day treatment and home care/

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consultant positions in both mental health and physical disabilities. She has also worked with dialysis patients, traumatic brain injury, return to work programs, and dementia programs. She is a frequent speaker for both lay and professional audiences. Mary Ellen is co-program manager for a second grant focused on evaluating, training and educating local businesses and communities on environmental modifications to improve safety and services for low vision seniors.

Paul Davis, MD

S36: Diabetes Epidemic: Family Medicine and Visual Rehabilitation Working Together

Born in 1947 in Kolar, S. India, to missionary parents, **Dr. Paul Davis** returned to the US as a high school junior in Bethany, OK. Following that, he completed a BA in Pre-Med at Bethany Nazarene College and entered the University of Oklahoma Health Sciences Center, graduating with his Doctorate in Medicine in 1972. Following graduation, he completed his Family Practice Residency at Wesley Medical Center in Wichita, KS, and then served two years in the National Health Service Corps in Ringling, OK. After a brief time teaching in the Wesley Family residency program from 1977-1978, he entered private practice and is founder of Primary Care Associates, a 10-physician group of primary care physicians based in Wichita, KS. He is especially proud to have his oldest son, Jeff, joining him in his practice. Dr. Davis currently serves on the Medical

Advisory Committee of Preferred Health Systems, and is also the founder and board member of HopeNet, a local non-profit agency dealing with complex family issues such as domestic violence, sexual abuse and addictions. Dr. Davis and his group of physicians strongly support the concept of the Medical Home, whereby patients are encouraged to have a primary care physician coordinate and manage both chronic and acute diseases with a focus on prevention, early detection, and aggressive management of chronic conditions such as diabetes, hypertension, CHF, COPD and asthma. To that end, they have a certified Diabetes Instructor that sees every diabetic patient in concert with their physician and helps manage their medications as well as practice preventive care. The physicians also feel fortunate to have excellent referral resources for the diabetic patient such as Envision, which has its own unique expertise in dealing with low vision rehabilitation.

Cathy Deats, PhD

W7: Psychosocial Adjustment to Vision Loss

Dr. Cathy L. Deats is a clinical social worker with extensive experience in work with people with disabilities. She has been a consultant with the Adjustment to Vision Loss Project of the NJ State Commission for the Blind and Visually Impaired for twenty years, and a psychotherapist in private practice. She consults with groups on mental health issues for people with vision loss.

Speakers

Dawn DeCarlo, OD

S1: Fitting Bioptic Telescopes for Driving

S6: Retinitis Pigmentosa: New Treatments on the Horizon

Dr. Dawn DeCarlo attended St. Mary's College of Maryland for her undergraduate studies in biology. She graduated cum laude from their Honors Program. She entered the dual Doctor of Optometry and Master of Science in Physiological Optics program at University of Alabama at Birmingham in 1988 and graduated with both degrees in 1992. Dr. DeCarlo then completed residency training in Rehabilitative and Hospital Based Optometry at the Hines Central Blind Rehabilitation Center and the Chicago West Side Veterans Administration Medical Center. Dr. DeCarlo served on the faculty of the UAB School of Optometry for eight years, followed by four years on the faculty of Nova Southeastern University College of Optometry. During that time she earned Diplomate status in the Low Vision Section of the American Academy of Optometry, the highest clinical honor available in her field. She returned to UAB in 2005 as a faculty member in the Department of Ophthalmology and serves as Director of the UAB Center for Low Vision Rehabilitation. Dr. DeCarlo is nationally known for her expertise in low vision rehabilitation and serves on the Executive Council of the American Optometric Association's Low Vision Rehabilitation Section, the Diplomate Executive Committee of the Low Vision Section of the American Academy of Optometry, the journal review

board for Optometry, Journal of the AOA, and is the Chair of the National Board of Examiners in Optometry Patient Assessment and Management Exam Committee as well as a member of the Part III Exam Council. Dr. DeCarlo is the immediate past-chair of the Low Vision Research Group.

Gina di Grazia, OTR/L, MA, COMS, CLVT

S12: The Many Faces of Occupational Therapists in Low Vision Rehabilitation: Excellence through Collaboration

Gina di Grazia is a licensed and certified occupational therapist and a certified orientation and mobility specialist who has worked at Laguna Honda Hospital and Rehabilitation Center for 15 years. In 2005, she developed the Vision Rehabilitation Services Program, dedicated to providing optimal low vision and blindness education and rehabilitation services to the patients and interdisciplinary care teams in San Francisco's public health-care system. Gina also completed a low vision therapy internship and certification exam as required for national certification. She is a guest lecturer in San Jose State University's Occupational Therapy Department and a teaching assistant in San Francisco State University's Orientation and Mobility program.

Speakers

Kia Eldred, OD

S33: Prism Adaptation for Left Hemispatial Neglect after Stroke or Brain Injury

S40: Which Side Are We On? Right vs. Left Brain in Acquired Brain Injury Patients

S43: Visual Changes Following Blast Injuries

Dr. Kia Eldred received her optometry degree at the University of Houston College of Optometry and served on the faculty there for 20 years. She is currently employed as a staff optometrist at the Michael E. DeBakey VA Medical Center in the VISOR program. She is on the executive committee of the American Academy of Optometry Low Vision Diplomate program. She is affiliated as an adjunct professor at the University of Houston College of Optometry and works with children with multiple disabilities in the NOVA clinic. Dr. Eldred had been a consultant at the Institute for Rehabilitation and Research in the Texas Medical Center for 18 years. She serves as a Vision Rehabilitation consultant to Region III and Region IV Educational Service Centers in the state of Texas. Other interests in optometry include international mission trips with the Fellowship of Christian Optometrists at the University of Houston.

Jennifer Elgin, OT

S15: In-Clinic and Behind the Training of Bioptic Telescopes for Driving

Jennifer Elgin is the clinic coordinator of the UAB Driving Assessment Clinic at the

University of Alabama at Birmingham. Her research interests include low vision rehabilitation, vision, driving and mobility in older adults, and predictors of fitness to drive for aging drivers with neurological impairments and/or vision impairment. She obtained her BA degree at the University of Alabama in 1992 and her MSOT degree at UAB in 2002. She completed her certificate in low vision in 2004. Ms. Elgin has worked in vision and driving research with Cynthia Owsley, PhD, since 1995. In 2005 she worked in collaboration with Dr. Owsley, Rod Nowakowski, OD, and Barry Dabbs, MD, to write the promulgated rule for bioptic driving in Alabama.

Donald Fletcher, MD

R4: How Low Vision Research Has Translated into Clinical Practice

S44: Using Reading Tests to Evaluate Macular Function

Donald C. Fletcher, MD, is a clinician and researcher in the field of retinal diseases and low vision rehabilitation. He is a medical doctor and ophthalmologist who has completed fellowship training in both retinal diseases and in low vision rehabilitation. For the last 23 years he has focused on rehabilitation of the visually impaired, caring for more than 20,000 low vision patients, teaching many others how to perform this work and contributing with his research colleagues to create better understanding of rehabilitation.

Speakers

Sandra Fox, OD

W4: Identifying and Managing Vision Problems in Acquired Brain Injury Patients: A Multidisciplinary Approach

W8: Learning for Life: Utilizing a Multidisciplinary Approach to Ensure Academic Success for the Child with Visual Impairment

“Excellence through Collaboration” Symposium: Increasing the Evidence in Low Vision Rehabilitation – The Time is Now

Sandra Fox obtained her optometry degree from the University of Houston College of Optometry in 1986. She established a solo private practice in Corpus Christi, TX, and provided low vision services within a general optometry practice. She joined the University of Texas Health Science Center at San Antonio Department of Ophthalmology in 1992 to help develop a low vision service. The Lions Low Vision Center of Texas was established in 2003 and utilizes a multidisciplinary approach to low vision rehabilitation that includes ophthalmology, optometry and occupational therapy. She helped establish the San Antonio Low Vision Task Force to improve community awareness concerning low vision rehabilitation and is the chairperson of the Texas Optometric Association Low Vision Committee.

Marcela Frazier, OD, MPH

S39: Development of an Educational Intervention to Improve Access to Eye Care for Hispanic Children

Originally from Medellin, Colombia, **Dr. Marcela Frazier** is a faculty member at the University of Alabama at Birmingham, where she completed optometry school and a pediatric residency. She has a Master’s in Public Health in Epidemiology from the University of Alabama at Birmingham. Her interests include amblyopia treatment, vision screenings and vision care for Hispanic children. She is a board member and regular volunteer for Cahaba Valley Health care, a community-based organization that provides access to health care to Latinos in parts of Alabama. She is part of the group Volunteers of Optometry in Service to Humanity (VOSH), which provides care in the US and abroad. She has been on numerous mission trips with VOSH to Nicaragua, Peru, Costa Rica, Venezuela, Dominican Republic, Honduras and Colombia. Her research interests have focused on pediatric eye care, especially for Hispanic children.

Duane Geruschat, PhD

“Excellence through Collaboration” Symposium: Increasing the Evidence in Low Vision Rehabilitation – The Time is Now

Dr. Duane Geruschat received his undergraduate degree from Duquesne University with a major in music. He received a

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Master’s degree from Western Michigan University in orientation and mobility, and his PhD in special education with a minor in visual science from Temple University. He began his career as an orientation and mobility specialist teaching students with multiple disabilities. He worked in the Feinbloom Low Vision Center of the Pennsylvania College of Optometry from 1979 to 1987 as a low vision rehabilitation specialist while teaching in the graduate training program in low vision. In 1987 he accepted a position as Director of Research at the Maryland School for the Blind and a faculty appointment in the Lions Vision Research and Rehabilitation Center at the Wilmer Eye Institute of Johns Hopkins University School of Medicine as a Research Associate in Ophthalmology.

Leah Gilbert, OTR/L

S46: A Review of Occupational Therapy Techniques for Treating Ring-Scotomas
Leah Gilbert is an occupational therapist at the Vision Rehabilitation Center located at the Massachusetts Eye and Ear Infirmary, which is affiliated with Harvard University. She received an MS in occupational therapy from Tufts University, Boston School of Occupational Therapy, in December 1999. She has experience working in inpatient rehabilitation, outpatient rehabilitation, and pediatrics prior to her work in low vision. Leah worked with high school students at the Perkins School for the Blind in Watertown, MA prior to joining the Vision Rehabilitation Center at MEEI. Leah enjoys working with

adults and older adults with low vision to help them reach their functional goals and increase participation in daily activities.

Steve Gill, OD

S10: Low Vision for the Newbie: Who, What, When, How
Dr. Steve Gill is on staff of LSU Eye Center in New Orleans, where he specializes in visual impairment and rehabilitation as well as specialty contact lenses. Dr. Gill is a Fellow of the American Academy of Optometry.

Deborah Gold, PhD

S18: Client Satisfaction Measurement: A Useful Service Quality Tool
Deborah Gold joined Canadian National Institute for the Blind (CNIB) in 2000, and since 2002 she has been primarily responsible for the development of CNIB’s social research program. In this role, she has acquired funding for a number of key research projects and established valuable partnerships with other research agencies. Dr. Gold’s own research focuses on inclusion and quality of life issues for persons with disabilities. She has worked in the disability field as a researcher, academic lecturer, administrator, residential counselor and recreation therapist. She has published several books and articles, and has been the principal investigator on several of CNIB’s national research projects, including a study of barriers to service by seniors with ethnically diverse backgrounds. She has also overseen a

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research project on the vision-care needs of Aboriginal Canadians, and a social policy pilot project on access to low-vision services for seniors. CNIB service and program evaluation is a key component of the work overseen by Dr. Gold. In addition to her work at CNIB, Dr. Gold is also an Assistant Professor in the Department of Occupational Health Science and Occupational Therapy in the University of Toronto’s faculty of medicine.

Judith Goldstein, OD

“Excellence through Collaboration” Symposium: Increasing the Evidence in Low Vision Rehabilitation – The Time is Now
S45: Stroke and Vision Rehabilitation
Dr. Judith 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. A graduate of the State University of New York at Binghamton, Dr. Goldstein earned her doctorate in Optometry at the State University of New York College of Optometry in 1993 and completed her residency at the Baltimore Veterans Administration Medical Center in conjunction with Wilmer Eye Institute at The Johns Hopkins Hospital. Specially trained in low vision care and ocular diseases, Dr. Goldstein provided low vision care to patients at her private clinical practice for over a decade while directing the Low Vision Service at University of Maryland. A Fellow of the American Academy of

Optometry, Dr. Goldstein has lectured on the identification and treatment of retinal disorders at national and international conferences. Dr. Goldstein joined Wilmer Eye Institute in 2006 to lead the clinical care and teaching program, and in 2008, developed the Johns Hopkins-accredited Lions Fellowship Training Program. Her current major research activities include the development and management of a 30-site research network to perform ongoing clinical trials in vision rehabilitation.

Gregory Goodrich, PhD

S19: TBI-Related Vision Loss: From Research to Clinical Practice
Greg Goodrich has over 35 years’ experience in the field of low vision research and rehabilitation. Greg is the Supervisory Research Psychologist and Coordinator of the Optometric Research Fellowship program at the VA Palo Alto Health Care System in Palo Alto, CA. He has served as the president of AER and chaired the highly successful AER International Conference held in Chicago in July 2008. He also served as the first treasurer of the International Society for Low Vision Research and Rehabilitation, holding that office until last year. For the past six years he has been studying visual impairment and visual dysfunction following traumatic brain injury (TBI). His initial research in this area is credited with supporting the mandate that all VA Polytrauma Rehabilitation Centers conduct comprehensive vision screenings as part of their standard of care. Most recently his research has

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focused on combat-related TBI injuries and visual impairments and dysfunctions, visual dysfunctions in mild TBI, and dual sensory impairments (vision and hearing) in combat-injured patients in a polytrauma rehabilitation center. He is PI or investigator on numerous research projects, including a multi-site study headed by Ron Schuchard that is a controlled clinical trial of rehabilitation techniques designed to restore visual function in hemianopsia. He has received commendations and awards from the American Optometric Association, AER and the VA, among other organizations. When not conducting research, he enjoys wine collecting, photography, travel, and family and friends.

Joseph Hallak, OD, PhD

S14: I See What You Are Saying

S41: Low Vision 101 from Low Tech to High Tech – No Holds Barred

Dr. Joseph Hallak has been a New York state-certified low vision specialist since the mid-1980s. He is the Director of the Low Vision Clinic at the Nassau University Medical Center, Department of Ophthalmology, and is in private practice specializing in Low Vision and Contact Lenses. Dr. Hallak has been on the Clinical and Supervisory Staff at the Veterans Administration, general and low vision clinics since 1993. In recent years, Dr. Hallak has presented at the American Academy of Ophthalmology.

Tyler Hamilton, COMS

W6: Utilizing an Interdisciplinary Team Approach in the Visual Rehabilitation of Patients affected by a Neurological Etiology

S3: Conundrum...So Your Visually Compromised Patient Wants to Drive

Tyler C. Hamilton, COMS is a Certified Orientation and Mobility Specialist with the Envision Low Vision Rehabilitation Center. Tyler has a BS in Psychology from Stephen F. Austin State University, a BA in Sociology from the University of Arkansas Little Rock, and a Master's in Rehabilitation for the Blind from the University of Arkansas at Little Rock. Tyler is certified by the Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP).

Shirin Hassan, OD, PhD

W1: Eight Simple Steps to Prescribing Near Magnification for Reading

R10: The Psychological Impact of Low Vision

Dr. Shirin E. Hassan joined the Indiana University School of Optometry faculty at the end of November 2007. Originally from Australia, Dr. Hassan completed her optometry training in 1996 at the Queensland University of Technology (QUT), Brisbane, Australia and has practiced part-time both as a primary care and low vision optometrist where she specializes in the visual rehabilitation of visually impaired people. Dr. Hassan finished her PhD studies in optometry at QUT, Brisbane, Australia, in 2001,

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after which she undertook a post-doctoral research fellowship at the Lions Vision Research and Rehabilitation Center at the Wilmer Eye Institute, Johns Hopkins University, Baltimore, MD. Following her post-doc, Dr. Hassan served as Assistant Professor of Ophthalmology from 2003-2007 at Johns Hopkins University, Wilmer Eye Institute. Dr. Hassan was invited to join the IU School of Optometry faculty in 2007 as a tenured track faculty member, where she continues her successful and active funded research program as well as providing low vision patient care and didactic education to optometry students in the area of low vision.

Kevin Houston, OD

S33: Prism Adaptation for Left Hemispatial Neglect after Stroke or Brain Injury

Dr. Kevin Houston is a clinical professor of low vision rehabilitation for the Indiana University School of Optometry and staff Optometrist for the Rehabilitation Hospital of Indiana's early post-acute inpatient rehabilitation service. He is currently researching the impact of prism adaptation for patients with hemispatial neglect and has lectured both locally and nationally on the topic.

Mary Lou Jackson, MD, ABO

"Excellence through Collaboration" Symposium: Increasing the Evidence in Low Vision Rehabilitation – The Time is Now

S21: The Eye and the Brain: A Review of Charles Bonnet Hallucinations and Ring Scotomas for the Vision Rehab Clinician

S28: A Review of Central Field Assessment Techniques for the Vision Rehab Clinician

Dr. Mary Lou Jackson is currently Director of Vision Rehabilitation at the Massachusetts Eye and Ear Infirmary in the Harvard Department of Ophthalmology in Boston. She is also the current Chair of the American Academy of Ophthalmology Vision Rehabilitation Committee. Research interests include Charles Bonnet hallucinations, contrast sensitivity, outcomes of vision rehabilitation and the benefit of self-management programs for patients with vision loss. She is passionate about the potential for comprehensive vision rehabilitation to enhance the quality of life for patients with vision loss, particularly the growing cohort of elderly with partial vision loss.

Rebecca Kammer, OD

S8: Practical Optics and Prescribing Tips for Near Devices

Dr. Rebecca Kammer, OD, completed a Bachelor's degree in optical engineering and then received her OD from the Southern California College of Optometry in 1999. Just after graduation, she began teaching optics at the college and also practiced locally. After balancing private practice and teaching for four years, she decided to jump in full-time two years ago. She currently teaches the first-year geometric optics course and the third-year low vision course. This last year she became chief of the low vision rehabilitation department. She has many exciting

Speakers

ideas for improving the quality of care provided and for increasing awareness of these services to referring doctors.

Karen Kendrick, OTR/L, CLVT

W6: Utilizing an Interdisciplinary Team Approach in the Visual Rehabilitation of Patients affected by a Neurological Etiology

Karen Kendrick, OTR/L, CLVT is a practicing occupational therapist and certified low vision therapist at Envision Low Vision Rehabilitation Center, practicing outpatient low vision therapy with emphasis in neuro-visual deficits. Karen is currently active in a community-based research project on fall prevention with the Wichita State University's Regional Institute on Aging.

Christine Kent, MA, OTR/L

S12: The Many Faces of Occupational Therapists in Low Vision Rehabilitation: Excellence through Collaboration

Christine Kent serves as an occupational therapist with the Frank Stein and Paul S. May Center for Low Vision Rehabilitation at California Pacific Medical Center, San Francisco, CA. In this role, she helps assess patients' individual needs and devise a treatment plan that enables them to lead fuller, more productive lives. An occupational therapist for more than seven years, Christine received her Master's degree from the College of Saint Scholastica in 1996. Her experience also includes neurology re-education for physical dysfunction, cognitive rehabilitation and activities of daily living re-training.

Marlyn J. Lawrence, OT, CLVT

S20: "Where the \$%#& is That Thing?" Scanning Training for Clients with Low Vision

S22: The Big D: Driver Assessment and Pre-Road Training - A Protocol That Works

Marlyn J. Lawrence holds a Bachelor of Science degree in occupational therapy from Wayne State University and national certification as a low vision therapist. Her more than 25 years as a healthcare professional have included a wide range of experiences and activities. She has specialized in vision rehabilitation for six of those years. She was part of the team that developed the bioptic driving program Henry Ford VRRC is currently using. Marlyn also holds an Associate's degree from Macomb Community Hospital in Respiratory Therapy.

David Lewerenz, OD

W2: Hands-On Devices Training and Applied Optics Workshop

S17: In the Middle: Helping Visually Impaired Patients with their Mid-Range Needs

S38: Determining Legal Blindness and Visual Disability

Dr. David Lewerenz received his Doctor of Optometry degree from the University of Alabama at Birmingham School of Optometry. He completed a residency in low vision rehabilitation at the Veterans Administration Medical Center affiliated with UAB and is a Clinical Diplomate in

Speakers

Low Vision in the American Academy of Optometry. Following 30 years of private practice, Dr. Lewerenz joined the faculty of the Northeastern State University Oklahoma College of Optometry in January 2008.

Linda Mangun, OT

S31: Thinking Outside the Box: How to Grow Occupational Therapy in Your Low Vision Practice

Linda Mangun graduated from the University of South Alabama with a Bachelor of Science degree in occupational therapy in 2001. Since graduation, Linda has worked in several practice areas including: inpatient and outpatient rehabilitation, home health, skilled nursing, school-based and early intervention, and low vision. Linda developed a low vision occupational therapy program at The Eye Center of North Florida in Panama City in 2005. The program has continued to grow, and Linda provides services to over 10 counties in the Florida panhandle.

Robert Massof, PhD

R6: From the Laboratory to the Clinic: Translating Low Vision Research and Development into Practice

"Excellence through Collaboration" Symposium: Increasing the Evidence in Low Vision Rehabilitation – The Time is Now

Robert W. Massof, PhD, is founder and Director of the Lions Vision Research and Rehabilitation Center, a division of the Johns Hopkins Wilmer Eye Institute. He

also serves as Professor of Ophthalmology and Professor of Neuroscience at the Johns Hopkins University School of Medicine, and has joint appointments in Computer Science at the Johns Hopkins University Whiting School of Engineering and at the Johns Hopkins University Applied Physics Laboratory. He received his PhD in Physiological Optics from Indiana University in 1975. Dr. Massof's research interests include clinical and basic vision psychophysics, physiological optics, sensory engineering, and psychometrics. His work has been supported by grants from the National Eye Institute, the National Institute on Aging, the National Science Foundation, the National Aeronautics and Space Administration, the VA Rehabilitation Research and Development Service, the Multiple District 22 Lions Vision Research Foundation, and several different corporations and private foundations. Dr. Massof is a Fellow of the Optical Society of America and has served on the Society's Board of Directors. He also is a Fellow of the American Academy of Optometry and a member of several other professional societies. He has authored more than 160 published scientific papers and book chapters, edited a book on low vision policy and service delivery issues, and holds five patents and three software copyrights on instruments that he developed. He and his long-time collaborator Dr. Joan Stelmack at the Hines VA Blind Rehabilitation Center recently completed the first multicenter randomized controlled clinical trial on low vision rehabilitation, the VA Low Vision Intervention Trial (LOVIT).

Speakers

Bradley Meltzer, OD

S14: I See What You Are Saying

Dr. Bradley Meltzer is the lead optometrist for Northport’s Center of Balance. This is a multidisciplinary team of physical therapy, audiology and optometry at the VA center for evaluating patients with vestibular problems. Dr. Meltzer is also responsible for educating the residents at the Veterans Administration Medical Center, Northport, NY, on neuro-optometric rehabilitation of patients with acquired brain injuries or vestibular problems. He presented “Optometry’s Role in the Center of Balance” in September 2008 in Boston, MA, and in February 2008 a SECO Poster entitled “Tackling the Hidden Symptoms: The Oculo-Vestibular Dimension” as co-author with Dr. J. Hallak.

Tina Menck, COA

S31: Thinking Outside the Box: How to Grow Occupational Therapy in Your Low Vision Practice

Tina Menck is a certified ophthalmic assistant who received certification in 2002. Tina has worked in eye care for more than 14 years and has been employed by The Eye Center of North Florida for 12 years. During her time at The Eye Center, Tina has practiced in the following areas: low vision, specialty and standard contact lens fittings, on-site testing using fluorescein angiography, retinal photography, visual fields (MP1, Humphrey’s, Goldmann, and tangent), GDX, OCT, and topography.

Tonya Mennem, OT, CLVT, SCLV

S40: Which Side Are We On? Right vs. Left Brain in Acquired Brain Injury Patients

S43: Visual Changes Following Blast Injuries

Tonya Mennem has been an occupational therapist for 16 years and has specialized in neurological injuries and vision loss. Currently she practices as a low vision therapist at the Michael E. DeBakey Veterans Affairs Medical Center in Houston, TX. In addition, she serves as the low vision consultant for Project Victory, a program that offers services for military service members who have served in OEF or OIF and who have screened positively for or have been diagnosed with mild traumatic brain injury or post-concussive symptoms while in combat or stateside. In 2008, she earned her Specialty Certification in Low Vision (SCLV) from the American Occupational Therapy Association (AOTA) and became a certified low vision therapist (CLVT) through the Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP). Previously, her professional experiences included the development of a low vision program at the Memorial Hermann TIRR Challenge Program, a community re-entry program for patients following acquired brain injuries. She has lectured locally and nationally regarding vision loss as a result of neurological injuries and serves as a guest lecturer for the low vision elective at Texas Woman’s University.

Speakers

Lylas Mogk, MD

S4: Help! Grandma Just Swallowed Her Hearing Aid: Home Visit Humor, Hubris, Head Trips and Heartstrings

S13: “It ain’t what we don’t know that gets us into trouble; it’s what we know for sure that just ain’t so”

Lylas Mogk is an ophthalmologist and-director of the Center for Vision Rehabilitation and Research, a comprehensive program of the Henry Ford Health System in Michigan that includes seven OT/CLVTs plus an O&M. She is past chair of the American Academy of Ophthalmology, an editorial board member of the Journal of Visual Impairment and Blindness, active in issues pertaining to Medicare reimbursement for vision rehabilitation and co-author of the award-winning book, “Macular Degeneration: The Complete Guide to Saving and Maximizing Your Sight.”

Marcelle Morcos, MD

S41: Low Vision 101 from Low Tech to High Tech – No Holds Barred

Dr. Marcelle Morcos is the Chairman of the Department of Ophthalmology at Nassau University Medical Center and Director of the Residency Program. She is also the past Director of Ophthalmology Clinics and serves as a member of the Research to Prevent Blindness. In recent years, Dr. Morcos has lectured on low vision a few years in a row at the American Academy of Ophthalmology.

Thuy-Tien (Terri) Nguyen, OTR/L

S12: The Many Faces of Occupational Therapists in Low Vision Rehabilitation: Excellence through Collaboration

Terri Nguyen is an occupational therapist specializing in low vision. She started her occupational therapy career working with patients suffering from neurological issues, such as stroke, closed head injury, traumatic brain injury, and various brain diseases. She was especially interested in the visual problems these patients experienced. Terri got an opportunity to train for nearly a year with eye doctors and retinal specialists at the Retina Group of Washington. She then dedicated four years as a clinical coordinator and low vision occupational therapist at Inova Hazel E.R. Widner Low Vision Center in Northern Virginia. At the low vision center, Terri collaborated with a low vision optometrist and learned how to use the Microperimeter-1 (MP1) to train low vision patients to use visual compensatory strategies including eccentric viewing skills. She discovered that knowledge gained from using the MP1 was also helpful with visual difficulties caused by neurological issues. Terri now dedicates her occupational therapy skills to helping low vision patients (in the traditional sense and in the neuro-vision sense) learn how to adapt and to cope with vision loss. Her goal is to help those with vision loss in the community with the broadest approach by being accessible in the hospital, in a skilled nursing facility, in free eye-clinics, and in people’s homes.

Speakers

James Nolan, PhD

R3: General Research Session 1: Implications for Education, Economics, and Low Vision Rehabilitation

James Nolan, PhD, is Director of Research and Special Projects at the Envision Low Vision Rehabilitation Center in Wichita, KS. He received Bachelor's degrees in Business Administration and Psychology from Washburn University in Topeka, KS and his Master's and PhD in Experimental Psychology from the University of Nevada, Reno, with an emphasis in Visual Neuroscience under the direction of Dr. Michael Webster and Dr. Michael Crognale. Dr. Nolan's particular areas of research interest include topics in visual and cognitive neuroscience as well as applied vision and visual rehabilitation. Dr. Nolan has held professorships at Dakota Wesleyan University, Western Iowa Tech, and Southwestern College, where he is currently an adjunct professor in the Department of Psychology. Dr. Nolan has taught over 60 university-level courses covering topics in experimental psychology and has numerous research publications as well as over 30 presentations at recognized national level research conferences. Dr. Nolan serves as a member of several national organizations including The Association for Research in Vision and Ophthalmology (ARVO), Optical Society of America (OSA), Vision Sciences Society (VSS), The National Association for Parents of Children with Visual Impairments (NAPVI), Rocky Mountain Psychological Association (RMPA), and the Midwestern Psychological Association (MPA).

Colleen O'Donnell, OT, CLVT

S20: "Where the \$%#& is that Thing?" Scanning Training for Clients with Low Vision

S35: What Else is Wrong? How to Make it Right

Colleen O'Donnell is an occupational therapist and certified low vision therapist working at the Henry Ford Health System Visual Rehabilitation and Research Center of Southeast Michigan. Colleen has worked with older adults in a variety of settings in direct care, managerial and consultant positions for over 30 years. She has specialized in vision rehabilitation for 11 of those years. She has presented at numerous conferences on aging and vision including: American Academy of Ophthalmology, AOTA, AER, Envision, and the Vision 2008 International Conference on Low Vision. She is a frequent lecturer to occupational therapy students and community groups. Colleen has published articles in OT Practice and the Journal of Visual Impairment and Blindness and has contributed to the American Foundation for the Blind website, Senior Site. She graduated from Wayne State University with a Bachelor's degree in occupational therapy and from Central Michigan University with a Master's degree in health services administration.

Speakers

William Park, OD, FAAO

W6: Utilizing an Interdisciplinary Team Approach in the Visual Rehabilitation of Patients affected by a Neurological Etiology

S3: Conundrum...So Your Visually Compromised Patient Wants to Drive

S36: Diabetes Epidemic: Family Medicine and Visual Rehabilitation Working Together

William L. Park, OD, FAAO, is in private practice in Wichita, KS. Dr. Park is committed to outreach efforts in stemming the epidemic of diabetes. He works exclusively with patients referred for low vision evaluation, low vision rehabilitation and neurological vision loss. He is a past Director of Low Vision Services, Lions Research & Rehabilitation Center, Wilmer Eye Institute-Johns Hopkins University.

Craig Parman, MD

S36: Diabetes Epidemic: Family Medicine and Visual Rehabilitation Working Together

Dr. Craig Parman is a 1984 graduate of the Kansas University Medical School and is board certified in Family Practice, Geriatric Medicine and Sports Medicine. He performed his residency at St. Francis Hospital, Wichita, KS, in family practice from 1984 to 1987. Dr. Parman has special interest in management of chronic illnesses in the role of preventive medicine by using electronic health records to help identify high-risk individuals for more intensive intervention. Dr. Parman serves

as Secretary of Family MedCenters, P.A. He is a member of the American College of Sports Medicine, the Sedgwick County Medical Society, the Kansas Medical Society and past Physician Director of Marketing for Physician Medical Association.

Eli Peli, OD

W5: Peripheral Prisms for Hemianopia: Hands-On Fitting Workshop

R5: The Impact and Remediation of Visual Field Loss

Dr. Eli Peli is Senior Scientist and the Moakley Scholar in Aging Eye Research at The Schepens Eye Research Institute, and Professor of Ophthalmology at Harvard Medical School. He also serves on the faculties of the New England College of Optometry (Adjunct Professor of Optometry and Visual Sciences), Tufts University School of Medicine (Adjunct Professor of Ophthalmology), and University of York, UK (Honorary Visiting Professor in the Department of Electronics). Since 1983 he has been caring for visually impaired patients as the director of the Vision Rehabilitation Service at the New England Medical Center Hospitals in Boston. Dr. Peli is a Fellow of the American Academy of Optometry, a Fellow of the Optical Society of America, a Fellow of the SID (Society for Information Display), and a Fellow of the SPIE (The International Society of Optical Engineering). He was presented the 2001 Glenn A. Fry Lecture Award by the American Academy of Optometry, the 2004 Alfred W. Bressler Prize in Vision

Speakers

Science (shared with Dr. R. Massof) by the Jewish Guild for the Blind, the 2006 Pisart Vision Award by the Lighthouse International, and the 2009 Alcon Research Institute award (shared with Dr. R. Massof). He was awarded an Honorary Degree of Master in Medicine by Harvard Medical School in 2002 and an Honorary Doctor of Science degree from the State University of New York (SUNY) in 2006. Dr. Peli’s principal research interests are image processing in relation to visual function and clinical psychophysics in low vision rehabilitation, image understanding and evaluation of display-vision interaction. He also maintains an interest in oculomotor control and binocular vision. Dr. Peli is a consultant to many companies in the ophthalmic instrumentation and devices area and to manufacturers of head-mounted displays (HMD). He serves as a consultant on many national committees, advising the National Institutes of Health, NASA AOS (Aviation Operations Systems) advisory committee, the US Department of Transportation - Federal Motor Carrier Safety Administration, and the National Highway Safety Administration - Physician Guide to Assessing and Counseling Older Drivers. Dr. Peli has published more than 140 scientific papers and has been awarded eight US Patents. He edited a book entitled “Visual Models for Target Detection” with special emphasis on military applications and coauthored a book entitled “Driving with Confidence: A Practical Guide to Driving with Low Vision” (coauthored with Doron Peli).

Melva Pérez Andrews, MBA, OTR, CLVT

W4: Identifying and Managing Vision Problems in Acquired Brain Injury Patients: A Multidisciplinary Approach

S12: The Many Faces of Occupational Therapists in Low Vision Rehabilitation: Excellence through Collaboration

Melva Pérez Andrews graduated with her Bachelor of Science in Occupational Therapy from Texas Woman’s University in Denton, TX in 1989 and her MBA from Our Lady of the Lake University in San Antonio, TX in 2001. She has 20 years clinical experience assessing and treating individuals with neurological impairments. Melva is an occupational therapist and a certified low vision therapist working in collaboration with a low vision optometrist at the Lions Low Vision Center of Texas located on the Greehey Academic and Research Campus of UTHSCSA. Her teaching focus is in the area of low vision and vision rehabilitation.

Chrystyna Rakoczy, OD

S14: I See What You Are Saying

Dr. Chrystyna Rakoczy is a staff TBI Optometrist with the James A. Haley Veterans Hospital in Tampa, FL. Dr. Rakoczy is a current member of the National Association of Veterans Affairs Optometrists (NAVAO).

Speakers

Stuart Richer, OD, PhD, FAAO

S23: The Brighter Side of Sunlight

S25: Diagnosis and Treatment of Atrophic AMD

Stuart Richer, OD, PhD, FAAO, has served as Chief of Optometry at DVA North Chicago since 1983. Dr. Richer earned his OD, MS (physiologic optics) from UC Berkeley in 1981, a residency certificate in 1982, and a PhD in human physiology and biophysics in 1996 from Chicago Medical School. He’s an associate professor of Family and Preventative Medicine at Chicago Medical School and Clinical Optometry at ICO and UMSL. Actively involved in primary care optometry and clinical antioxidant research, Dr. Richer has special interests in aging, prescribing nutrients in the intervention of age related macular degeneration, low-tension glaucoma, prevention of cataracts and dry eye.

Kimberly Schoessow, OTD

S46: A Review of Occupational Therapy Techniques for Treating Ring-Scotomas

Kim Schoessow is an occupational therapist at the Vision Rehabilitation Center at the Massachusetts Eye and Ear Infirmary. After receiving a doctorate in occupational therapy from Washington University in St. Louis, she completed a fellowship at the Smith-Kettlewell Eye Research Institute in San Francisco. At Mass. Eye and Ear, she works with adults and older adults with low vision – usually due to macular degeneration, glaucoma and diabetic retinopathy – using adaptive techniques and

devices to help them participate in their everyday activities. Kim is also involved with research to investigate the efficacy of low vision rehabilitation.

Herb Simon, CDRI

S3: Conundrum...So Your Visually Compromised Patient Wants to Drive

Herb Simon has over 40 years of experience as a driver education instructor. A former physical education teacher in public and private schools, he began his career in driver education in 1966 and owned and operated Nice and Easy Driving School from 1978 to 2000. He was selected as a consultant for Virginia’s State Driver Education Annual Conference. In 1999, he was approved as a Trainer-of-Teachers for the National Driver Education Teacher Preparation and Recognition Program by the American Driver and Traffic Safety Education Association. In 2003, Mr. Simon was certified by the Maryland Motor Vehicle Administration as a Rehabilitative Driving Instructor of Refresher Skills Training, as well as a Rehabilitative Driving Instructor for Low Vision Driver Training. He has worked with special needs drivers referred by both the Medical Advisory Board and hospital-based driver rehabilitation programs throughout the state. Specifically, Mr. Simon has trained a number of visually impaired clients referred from the Medical Advisory Board’s Modified Vision Program. In 2001, speaking about compensatory techniques that could be used by low vision drivers, he was a guest lecturer

Speakers

at the Ophthalmologist Academy in Philadelphia. In 2002 and 2003, he was hired by the Maryland MVA to teach driving instructors compensatory techniques that low vision drivers and drivers with special needs could use to become a safer driver. After the Maryland Curriculum was formulated, he was hired by the MVA to cover the points of emphasis of the program. At the present time, he is writing a manual called “Is Your Life Worth a Half of a Second,” an informative text concerned with preventing collisions for all drivers.

Wanda Smith, OT, CLVT

S22: The Big D: Driver Assessment and Pre-Road Training, a Protocol that Works

S35: What Else is Wrong? How to Make it Right

Wanda Smith is an occupational therapist at Henry Ford Visual Research Center. She has been part of the Henry Ford Health System for 10 years in a variety of rehabilitation settings, with vision rehabilitation truly being the most inspiring in her career endeavors. She holds a Master’s degree in education from Wayne State University and Low Vision Certification from the Academy for Certification of Vision Rehabilitation and Education Professionals.

Janet Sunness, MD, ABO

S2: Stargardt’s Disease (Macular Degeneration in Young People)

Dr. Janet Sunness is a leading international expert in macular degeneration and in methods of measuring macular function, with particular emphasis on dry age-related macular degeneration and Stargardt’s disease. She is an ophthalmologist, with specialties in medical retinal disease and low vision. She has pioneered the use of the scanning laser ophthalmoscope to learn more about macular disease and how patients use their peripheral retina when they have a central scotoma. She is the Medical Director of the Richard E. Hoover Rehabilitation Services for Low Vision and Blindness at the Greater Baltimore Medical Center. She has published 53 peer-reviewed papers, and was first author for 33 of these. She has published eight papers on Stargardt’s disease. She is a member of the Foundation Fighting Blindness working committee on Stargardt’s disease.

Nilima Tanna, OTR/L, CLVT

S12: The Many Faces of Occupational Therapists in Low Vision Rehabilitation: Excellence through Collaboration

Nilima Tanna is an experienced occupational therapist, having worked in various areas and settings of practice. She is currently working in her private practice, which is solely aimed at providing low vision rehabilitation. She is also working part-time as adjunct faculty at Southern California College of Optometry in their low vision clinic.

Speakers

Deborah Thompson, TVI, COMS

W8: Learning for Life: Utilizing a Multidisciplinary Approach to Ensure Academic Success for the Child with Visual Impairment

Deborah Thompson has many years of experience in working with children with visual impairment from birth to age 22. In addition to providing direct student services, she was responsible for developing regional services and setting up a cluster program to provide VI services to children in rural areas surrounding San Antonio, where resources are limited. She was instrumental in coordinating a collaborative effort to establish an annual theater arts camp for children with vision impairment and serves as an advocate for children with visual impairment as a board member of the San Antonio Low Vision Coalition.

Marilee Walker, OTR/L

W3: Helping Patients Successfully Navigate Central Visual Field Loss: Testing and Training

Marilee Walker, OTR/L has been working in low vision rehabilitation since 1998. She has had a diverse career, working with pediatric and geriatric patients during the first 20 years of her career. For the past 10 years, Marilee has devoted her time to low vision rehabilitation, working with ophthalmologist Dr. Ronald Cole at Medical Vision Technology, a private practice in Sacramento, CA. She developed a unique guide card method, which helps patients learn how to effectively

use their eccentric viewing position. She was a speaker for the American Academy of Ophthalmology Vision Rehabilitation Education Day in 2003, 2004 and 2005, speaking on scotoma/EVP training, and how to set up a low vision rehab practice. She also spoke at the American Geriatrics Society’s Annual Scientific Meeting on occupational therapy’s role in low vision rehabilitation. Most recently she spoke at the 8th International Congress of Ophthalmology and Optometry Conference in China on “Eccentric Viewing Training for Central Field Disruption: A Case Study of an AMD Patient” as well as at the 9th International Low Vision conference in Montreal in July 2008. Over the last three years, she has been active in training occupational therapists in eccentric viewing techniques.

Susan Waltrip, TVI, COMS

W8: Learning for Life: Utilizing a Multidisciplinary Approach to Ensure Academic Success for the Child with Visual Impairment

Susan Waltrip has served children with visual impairment in South Texas since 1989. She began as a teacher for students with visual impairment and then obtained her certification as an orientation and mobility specialist in 1994. She is currently the lead teacher for the Northeast Independent School District for teachers in the VI and O & M Program.

Speakers

James Warnke, LCSW

W7: *Psychosocial Adjustment to Vision Loss*

S5: *Pediatric Adjustment to Vision Loss*

James Warnke is a clinical social worker in private practice and Mental Health Consultant to the Adjustment to Vision Loss Project. His practice includes Clinical Hypnosis. Publications include “Men and Visual Impairment,” in Milian and Erin’s “Diversity and Visual Impairment.” Jim is a sought-after speaker for conferences of organizations which serve people with blindness and visual impairment.

Orli Weisser-Pike, OT, CLVT, SCLV

S32: *PRL ID & EVT x OT*

S37: *Untangling the Jungle of Low Vision Credentials*

S42: *A Toolbox for Interventions in the Homes of Patients with Low Vision*

Orli Weisser-Pike is the Assistant Director of the Low Vision Service at the Hamilton Eye Institute, Department of Ophthalmology, University of Tennessee Health Science Center (UTHSC). Alongside her clinical appointment, she instructs ophthalmology residents and occupational therapy students. In 2004, she became the first certified low vision therapist (CLVT) in the greater Memphis area and

was the first occupational therapist (OT) in the region to achieve specialty certification in low vision (SCLV) from the American Occupational Therapy Association (AOTA) in 2006. To date, she is one of 14 OTs nationally to achieve SCLV since its inception. Ms. Pike currently serves on AOTA’s Low Vision Specialty Certification panel as a reviewer for applicants seeking the SCLV. She previously served on the same panel to develop certification requirements for OT practitioners in low vision rehabilitation. Additionally, she serves on the Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP) Low Vision Certification Committee and was a previous member of ACVREP’s item development committee for the new certification examination in low vision therapy. She is an instructor on low vision rehabilitation for national and international audiences and is co-owner of a business specializing in training of rehabilitation professionals in low vision rehabilitation. Ms. Pike is deeply committed to the advancement of low vision rehabilitation through the professions of occupational therapy, low vision therapy, and ophthalmology and is devoted to a full-time career in low vision rehabilitation.

Speakers

Susan Zekert, OT, CLVT

S12: *The Many Faces of Occupational Therapists in Low Vision Rehabilitation: Excellence through Collaboration*

Susan Zekert studied occupational therapy at the University of Kansas in 1988. She worked at Mapleton Center for Rehabilitation in Boulder, CO for eight years until 1994 when she attended the “Low Vision Rehabilitation: A New Frontier for Occupational Therapists” course at the Eye Foundation of University of Missouri,

Kansas City, by Dr. Donald Fletcher, MD, Mary Warren, OTR, MS, and their team of occupational therapists. Susan travels to patients’ homes to provide services. She has written to Congress to request intervention at a time when she faced denial of payment and the intervention overturned the insurance company’s decision. She lives in Boulder, CO, and enjoys walking her adopted and foster greyhounds, knitting and reading a good historical novel.



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→ Exhibitors

The following companies are exhibiting at Envision 09. Companies are listed alphabetically. All exhibits are in Navarro. See the Exhibit Hall floor plan on page 136 for booth locations.



Exhibit Hours: Thursday, 7:00 am - 8:00 pm, and Friday, 7:00 am - 4:30 pm

Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP)

www.acvrep.org

Booth 10

The Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP) offers professional certification for vision rehabilitation and education professionals in order to improve service delivery to persons with vision impairments. ACVREP is committed to quality certification programs that meet rigorous recognized standards. Programs are designed to offer certificants the means to demonstrate professional knowledge and skills that promote the provision of quality service and ethical practice. ACVREP offers certification in three disciplines: Low Vision Therapy, Orientation & Mobility, and Vision Rehabilitation Therapy (formerly Rehabilitation Teaching). Individuals who possess ACVREP certification demonstrate a level of quality and care that is unmatched in the field.

AER - Association for Education and Rehabilitation of the Blind and Visually Impaired

www.aerbvi.org

Booth 7

The mission of AER is to support professionals who provide education and rehabilitation services to people with visual impairments, offering professional development opportunities, publications, and public advocacy.

American Foundation for the Blind

www.afb.org

Booth 13

The American Foundation for the Blind (AFB) is a national nonprofit that expands possibilities for people with vision loss. AFB's priorities include broadening access to technology; elevating the quality of information and tools for the professionals who serve people with vision loss; and promoting independent and healthy living for people with vision loss.

Exhibitors

American Printing House for the Blind
www.aph.org

Booth 19

APH is the world's largest company devoted solely to making products for people who are visually impaired, and is the official supplier of educational materials for blind students in the U.S. Visit our website or call one of our friendly customer service representatives at 800-223-1839 for more information.

Beecher Research Company

Booth 4

Beecher Research Company has been manufacturing low vision aids for 25 years. We specialize in manufacturing head-borne telescopic aids for the visually impaired.

Chadwick Optical, Inc.

chadwickoptical.com

Booth 8

Featuring the new Peli Lens with 30 degree expansion for HH, requiring little patient training. Clinical trials report a 74% patient acceptance rate. A wide array of unique products for visual field loss and low vision: prescription medical filters, prescription prisms and custom designed lenses available nowhere else on earth.

Clarity Optometric Technologies

www.clarityoptometric.com/acuity

Booth 18

We are practicing optometrists and software experts dedicated to delivering reliable software for optometric and ophthalmic professionals.

Emerald Education Systems, a division of Emerald Events

www.emeraldevents.net

Booth 15

Emerald Education Systems is a publisher of online textbooks for the health care community. Principles and Practice of Low Vision Rehabilitation (PPLVR) is our first "living textbook." Each chapter is designed as an affordable online CE course with the same depth of knowledge that is offered in academic curriculum. Available 24/7/365.

Enhanced Vision

www.enhancedvision.com

Booth 3

Enhanced Vision is the leading developer of assistive technology for the visually impaired including individuals with macular degeneration. We have the most comprehensive line of high quality and affordable products in a variety of screen sizes and magnification levels. We are proud to have helped thousands regain their visual independence.

Envision Industries

www.envisionus.com

Booth 20

Envision is the largest employer of individuals who are blind or low vision in a six-state region. Some of the more than 90 products made at Envision by individuals who are blind or low vision are used across the globe. We also operate retail stores on 15 military bases.

Exhibitors

Envision Low Vision Rehabilitation Center

www.envisionrehab.com

Booth 21

Envision Low Vision Rehabilitation Center is a low vision rehabilitation clinic with one goal – helping our patients realize their best possible functional vision. We achieve this by combining a comprehensive, multi-disciplinary low vision rehabilitation program with adaptive aids, training and resources.

Eschenbach Optik of America

www.eschenbach.com

Booth 25

Eschenbach manufactures and distributes a complete line of magnifiers, telescopes, filters, and video magnifiers for those who have vision impairment due to macular degeneration and other eye conditions. Our Complete Low Vision Program includes in-office staff training, a comprehensive diagnostic system of low vision aids, and marketing and practice management support materials designed to ensure that the Low Vision Care that you provide is beneficial to your patients and profitable to your practice.

Franklin Electronic Publishers

www.franklin.com

Booth 12

Electronic speaking dictionary for blind or visually impaired and currency bill reader for US money.

Freedom Scientific

www.freedomscientific.com

Booth 14

Freedom Scientific provides leading-edge assistive technology products for those that are blind or low vision, or are learning disabled. Products include the TOPAZ™, ONYX™, OPAL™, SAPPHIRE™, and RUBY video magnifiers, JAWS® screen reading software, MAGic® screen magnification software, SARA™ scanning and reading appliance, Braille displays, and PAC Mate accessible Pocket PC.

Fresnel Prism & Lens Co.

www.fresnel-prism.com

Booth 16

The Fresnel Prism & Lens Co. offers products used to treat and diagnose Strabismus, Amblyopia and Diplopia. Familiar products are 3M Press-On™ Optics, Bangerter Occlusion Foils and MYI Occlusion Eye patches. New items are the Fresnel lens cleaning kit, light-weight Trial Frames sets and new Fixation Sticks & “Transparent” Occluder.

Good-Lite

www.good-lite.com

Booth 9

Manufacturer of the Lea Test System including Lea Symbols and Lea Numbers. Complete range of vision testing products including the new self-calibrating ETDRS Standardized Viewer. Cortical Vision Assessment, high and low contrast, color vision, preferential looking tests will be on display at Envision 2009 Conference.

Exhibitors

HBI Technologies

hbitech.com

Booth 6

HBI specializes in at-home and business scales. We are excited to introduce our talking scales to the Envision Conference.

HumanWare

www.humanware.com

Booth 5

HumanWare provides innovative solutions, empowering people who are blind, visually impaired or learning disabled. Products include BrailleNote range of notetakers; portable and desktop video magnifiers; myReader, a low vision auto reader; digital talking books and music players; GPS, Braille displays; accessible PDAs; and ViewPlus print, Braille and graphic embossers.

Mutual of America

www.mutualofamerica.com

Booth 1

Mutual of America Life Insurance Company provides retirement plan products and services to employees of nonprofit organizations and the for-profit sector, applying a service and support structure developed over 60 years. With headquarters in New York, a National Training and Telecommunications Center in Florida and 36 regional offices throughout the United States, Mutual of America is well positioned to offer employee benefit plans and services to corporations and nonprofit organizations as well as retirement and insurance products and services to individuals.

Neuro Vision Technology (NVT)

www.neurovisiontech.com.au

Booth 17

The NVT Vision Rehabilitation System has been developed by clinicians for clinicians and will enable you to take a new direction in neuro-vision rehabilitation and improve patient outcomes by: Giving you an assessment, training and research tool in one package; establishing a robust patient management and tracking system; providing comprehensive professional training for your staff; using a standardized and validated therapy to enhance functional vision; allowing patients to develop skills for greater independence and safer mobility.

Nidek, Inc.

www.usa.nidek.com

Booth 11

NIDEK is a global leader in eye care products for Ophthalmology and Optometry. With diversified clinical research and continual development, an array of Laser and Optical Scanning products are offered that lead the way for improved diagnosis and treatments. The relentless commitment to customer satisfaction means NIDEK will do whatever it takes to continually exceed expectations. ***Come see our newest products at booth 11.***

Exhibitors

ClearView+

Setting The Standard In Low Vision



Optelec US

866-999-9188 www.Optelec.com

Optelec

Tieman Group

Optelec
www.optelec.com
Booths 22, 23

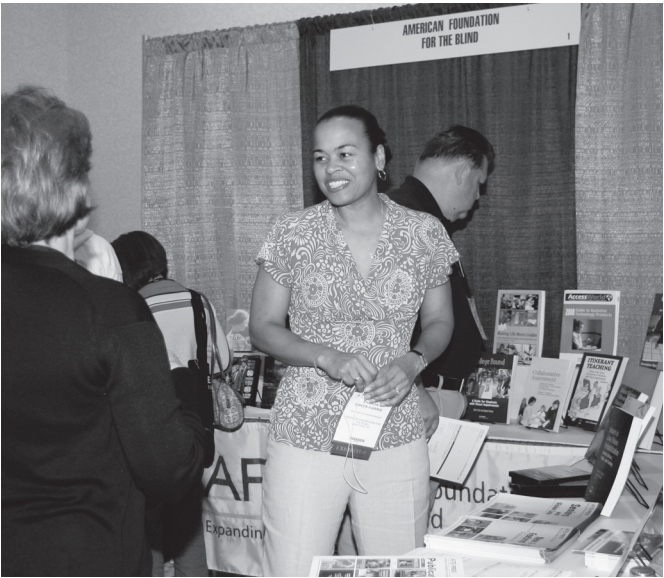
Optelec was founded in 1985 and is recognized as the worldwide market leader in providing innovative solutions for the blind, visually impaired and learning disabled. In January 2007, Tieman U.S., Holding Company to Optelec US Inc., spun off Shop-LowVision.com and LowVision.com as sister companies, providing the one-stop-shop for optical, non-optical and daily living aids, products, solutions and education for eye care professionals and consumers.

Precision Vision
www.precision-vision.com
Booth 24

We specialize in custom designed charts used in research • Computerized Visual Acuity Testing - PVVAT™ • ETDRS Illuminator Cabinets and Charts • Mixed Contrast Eye Charts • Visual Acuity Eye Charts • Low Vision Eye Charts • Visual Field Eye Test • Fixation and Occluders • Color Vision Tests • Stereo Vision Tests • Projector Slides • Non-Memorization Eye Charts

US Army Medical Department
www.armymedicine.army.mil
Booth 2

We recruit for the Healthcare Profession Scholarship which allows students to go to school for free. Each student receives a stipend of \$1,907.00 per month, which is paid directly to them. We also recruit for full time and part time positions for optometrists as well as other various healthcare professions.



▶ WHY CHOOSE MUTUAL OF AMERICA?

We've been providing retirement plans and services for companies and nonprofit organizations of all sizes since 1945.



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- ✓ Roth 401(k) and 403(b) Plans
- ✓ SIMPLE Plans
- ✓ Simplified Employee Pension (SEP) Plans
- ✓ 401(a) Defined Contribution Plans
- ✓ Defined Benefit Plans
- ✓ Section 457 Deferred Comp. Plans
- ✓ Tax-Deferred Annuities (TDAs)
- ✓ Traditional, Roth and Rollover IRAs
- ✓ Flexible Premium Annuities (FPAs)

All Plans Offer Well-known Investment Choices

MUTUAL OF AMERICA CAPITAL MANAGEMENT



What our plans offer you and your employees:

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- ◆ A competitive fee structure for our variable accumulation annuities that is easy to understand
- ◆ No plan start-up fees, no conversion fees, and no withdrawal or surrender charges*
- ◆ A variety of no-load investment alternatives including “target-date” Retirement Funds and a Retirement Income Fund
- ◆ An Interest Accumulation Account
- ◆ Automatic Enrollment, to help increase plan participation
- ◆ No transaction charges for allocation changes and transfers among the interest and investment alternatives
- ◆ 24/7 participant account access and resources at our Web site, mutualofamerica.com
- ◆ Toll-free Telephone Service Representatives
- ◆ Hotline Plus, our Internet-based plan administration system
- ◆ Mutual of America is currently rated A+ (Superior) by A.M. Best, and AA- (Very Strong) by Fitch and Standard & Poor's, for its financial strength and operating performance**

*There are no withdrawal charges imposed by Mutual of America, however, withdrawals prior to age 59½ are subject to a 10% IRS tax penalty and current income tax.
**These ratings do not apply to the safety or investment performance of the Separate Account alternatives. They do reflect upon Mutual of America's ability to fulfill its General Account and annuity purchase rate guarantees. These guarantees are based on the financial strength and claims-paying ability of Mutual of America Life Insurance Company.

For complete information on our variable accumulation annuity products, please refer to the Separate Account prospectus, as well as the Underlying Funds prospectuses, and read them carefully before investing. They contain information on investment objectives, risks, charges and expenses (a contract fee, Separate Account expenses and Underlying Funds expenses) and other information, which should be considered carefully before investing. To request a prospectus, call 800-468-3785. Variable annuities are suitable for long-term investing, particularly retirement. Variable annuities fluctuate in value. At redemption, amounts placed in a variable annuity's Separate Account may be greater or lesser than the principal amount invested. A Mutual of America annuity contract provides no additional income tax deferral advantages beyond those provided by a tax-qualified plan. You should consider the other features of Mutual of America's annuity contract before making a decision.

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→ Continuing Education

The Envision Low Vision Rehabilitation Center is an American Occupational Therapy Association (OTA) Approved Provider. The assignment of OTA CEUs does not imply endorsement of specific course content, products or clinical procedures by OTA.

Continuing education accrediting agencies:

- Council on Optometric Practitioner Education (COPE), Association of Regulatory Boards of Optometry (ARBO) Partial COPE Approval
- Accreditation Council for Continuing Medical Education (ACCME)
- American Nurses Credentialing Center Commission on Accreditation (ANCC)
- Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP)
- The Commission on Rehabilitation Counselor Certification (CRCC)

Physicians: This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the KU Medical Center Office of Continuing Medical Education and Envision. The KU Medical Center Office of Continuing Education is accredited by the ACCME to provide continuing medical education for physicians.

The KU Medical Center Office of Continuing Medical Education designates this educational activity for a maximum of 29 AMA PRA Category 1 Credits™.

Physicians should only claim credit commensurate with the extent of their participation in the activity.

Nurses: Up to 29.5 contact hours will be awarded to all individuals based on documentation of actual attendance requirements specific to the activity, and payment in full.

University of Kansas School of Nursing is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

Accredited status does not imply endorsement by the provider or ANCC of any commercial products displayed in conjunction with this activity.



Continuing Education

Envision Conference Continuing Education Committee:

- **Brenda Chezek**, Senior Program Manager, Continuing Education, University of Kansas Medical Center
- **Bonnie Cochran, CPOA, CLVT**, Envision Low Vision Rehabilitation Center
- **Michael Epp, MS**, Director of Outreach & Continuing Education, Envision Low Vision Rehabilitation Center
- **Mary Gambino, RN, PhD**, Assistant Dean for Community Affairs, Director of Nursing Education, University of Kansas School of Nursing, Kansas City, KS
- **Karen Kendrick, OTR/L, CLVT**, Envision Low Vision Rehabilitation Center
- **Lylas Mogk, MD**, Henry Ford Center for Vision Rehabilitation & Research, Livonia, MI
- **Lori Morton**, Manager of Outreach & Hispanic Relations, Envision Low Vision Rehabilitation Center
- **James Nolan, PhD**, Director of Research, Envision Low Vision Rehabilitation Center
- **William Park, OD, FAAO**, William Park, OD, FAAO, LLC, Wichita, KS
- **Anne Riddering, OTR/L, CLVT, COMS**, Henry Ford Center for Vision Rehabilitation & Research, Livonia, MI

Objectives:

Attendance at Envision 09 sessions should enable participants to:

- Describe the most current clinical practices in low vision rehabilitation
- Recommend appropriate patients who could benefit from low vision rehabilitation
- Recognize the multi-disciplinary nature of professionals involved in the continuum of care of patients
- Assess the potential of patients for maximizing functional vision through low vision rehabilitation
- Select appropriate resources and adaptive strategies for patients with permanent vision loss
- Recognize practice gaps in current standards of care

All participants are required to have their badge scanned in each session attended each day. Continuing education credit will be prorated according to documented attendance.

➔ Continuing Education CEUs

WEDNESDAY WORKSHOPS

NUMBER	ACCME	ACVREP	ANCC	AOTA	COPE	CRCC
W1	2.75	3		3	3	3
W2	2.75	3	2.7	3	3	3
W3	2.75	3	2.7	3	3	3
W4	2.75	3	2.7	3	3	3
W5	2.75	3			3	3
W6	3	3		3	3	3
W7	2.75	3	2.7	3		3
W8	2.75	3	2.7	3	3	3

THURSDAY SESSIONS

NUMBER	ACCME	ACVREP	ANCC	AOTA	COPE	CRCC
S1	1	1		1	1	1
S2	1	1	1	1	1	1
S3	2	2		2	2	2
S4	1	1	1	1	1	1
S5		1		1		1
S6	2	2	2	2	2	2
S7		1		1		1
S8	2	2	2		2	2
S9		1		1		1
S10	2	2	2	2	2	2
S11		1	1	1		1
S12		2		2		2
S13	1	1	1	1	1	1
S14	2	2	2	2	2	2
S15		1		1		1
S16		1		1		1
S17	1	1	1	1	1	1
S18	1	1	1	1	1	1
R1		2		2		2
R2		2		2		2
R3		2		2		2
R4		2		2		2

FRIDAY SESSIONS

NUMBER	ACCME	ACVREP	ANCC	AOTA	COPE	CRCC
S19	2	2	2	2	2	2
S20		1		1		1
S21	1	1		1	1	1
S22		1		1		1
S23	1	1	1	1	1	1
S24	1				1	
S25	2	2		2	2	2
S26		1	1	1		1
S27		1	1	1		1
S28	1	1	1	1	1	1
S29		1		1		1
S30	2	2		2	2	2
S31		2		2		2
S32		2		2		2
R5		2				2
R6		2		2		2
R7		2		2		2
SYMP.	2	2	2	2	2	2

SATURDAY SESSIONS

NUMBER	ACCME	ACVREP	ANCC	AOTA	COPE	CRCC
S33	1				1	
S34		1		1		1
S35		2	2	2		2
S36	1	1	1	1	1	1
S37		1		1		1
S38	1	1		1	1	1
S39		1		1	1	1
S40	1	1	1	1	1	1
KEYNOTE	1	1	1	1	PEND.	1
S41	2	2	2	2	2	2
S42		2	2	2		2
S43	2	2	2	2	2	2
S44	1	1		1	1	1
S45	1	1	1	1	1	1
S46		1	1	1		1
R8		2		2	2	2
R9		1		1		1
R10		2				2

Envision

An Extensive Source
of Products for
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Fun Designer
Eye Patches

- Non-toxic, • Latex Free, • Hypo-Allergenic
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- Blackout layer provides for total occlusion
- Thinner occlusion is gentle on eye lashes.

3M Press-On™
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Ultra-thin 3M Press-On Optics - prisms and spheres
- measure only 1mm thick.

Prisms may be cut to fit most frame sizes and shapes
and adhere to existing lenses with only water.

Aspheric Lenses – plus and minus and as D-segments.

Diplopia (3rd, 4th and 6th nerve palsies, following
cataract surgery, myasthenia gravis, MS Graves Disease).

Phorias (symptomatic or decompensated phorias).

7 Ring
Trial Set

- Allow accurate testing of large oculomotor imbalances in the trial frame.
- Fits all standard trial frames & offers excellent optical qualities.
- Made of thin optical quality acrylic and are lightweight.
- Each set includes a display box.
- Available as two sets providing a full range of prisms.

Fresnel trial sets are indispensable as a tool for the proper evaluation of ocular motility disturbances.

These acrylic prisms allow for a more accurate evaluation of large-angle deviations.

Bangerter
Occlusion Foils
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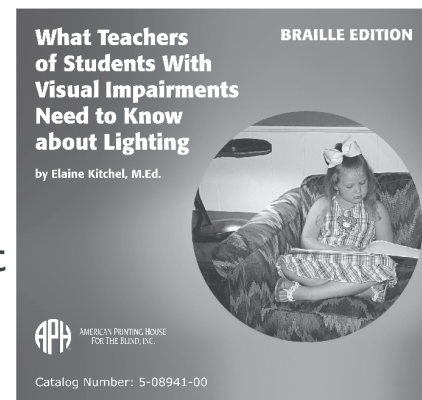
www.fresnel-prism.com

THE FRESNEL PRISM AND LENS CO.

6824 Washington Ave.S • Eden Prairie, MN 55344

New! Lighting Guide Kit

What Teachers of Students with Visual Impairments Need to Know about Lighting is a booklet that gives teachers, administrators, parents, and practitioners information about lighting to help make their student or child as productive as possible.



The Better Vision Lamp was specially developed to provide the best light possible for students with visual impairments. This energy-saving lamp gives off light that doesn't cause photo stress in most people with retinal, corneal, or lens disease/injury, or cortical visual impairment.

The lamp and the book together make up the Lighting Guide Kit. The lamp is not sold separately.

Find out more information and order on our NEW shopping site!
<http://shop.aph.org>



American Printing House for the Blind, Inc.
800.223.1839 • info@aph.org • www.aph.org

Attendee Resources

Registration Desk

The **Envision 09** Registration Desk, located in the Navarro Prefunction, is open during the following hours:

Tuesday: 3:30 pm - 7:00 pm
Wednesday: 7:00 am - 8:00 pm
Thursday: 7:00 am - 6:00 pm
Friday: 7:00 am - 6:30 pm
Saturday: 7:00 am - 6:00 pm

Internet Access

Wireless internet is free of charge in many public areas including the restaurant, main lobby and lounge.

The business center offers internet for a charge of \$5.95 for 15 minutes. Internet is also available in all guest rooms for a fee.

ATM

An ATM is located in the main lobby.

Baggage Check

For those staying at the Westin Riverwalk, bags can be checked with the Bellhop in the main lobby.

Business Center

The Westin business center is open 24 hours a day.

Complimentary Food and Beverage

Complimentary continental breakfast is served Thursday - Friday from 7:00 am - 8:00 am in Navarro, and Saturday from 7:00 am to 8:00 am in Navarro Prefunction.

On Friday, a buffet luncheon is provided from 12:30 pm - 2:00 pm in Navarro. Lunch ticket required.

Complimentary coffee and tea will be served during morning breaks and complimentary coffee and soda will be served during afternoon breaks.

Dining Options at the Westin Riverwalk Hotel

Cafecito

Coffee Bar

Open daily 6:30 am - 10:30 pm

Zocca Cuisine d'Italia

Italian Cuisine

Open daily;

Breakfast: 6:30 am - 11:00 am

Lunch: 11:00 am - 2:00 pm

Dinner: 5:00 pm - 10:00 pm

Guest Registration

Guest registration is for a family member or guest of an attendee over the age of 17. Guest registration includes entrance to the exhibit hall and social events, except for the Friday buffet luncheon. Registered guests may purchase tickets separately for the Friday buffet luncheon for \$45. Guest registration does not include admission to sessions. The guest must be registered at the same time as the attendee. Individuals under the age of 17 will not be permitted to attend the conference without adult supervision.



Attendee Resources

How to Contact Us

If you need to reach Envision or meeting personnel while at the meeting, call extension 6212 from inside the hotel, or 210-444-6212 from outside the hotel.

Lost and Found

Lost and found is located at the Conference Registration Desk in the Navarro Prefunction.

Message Center

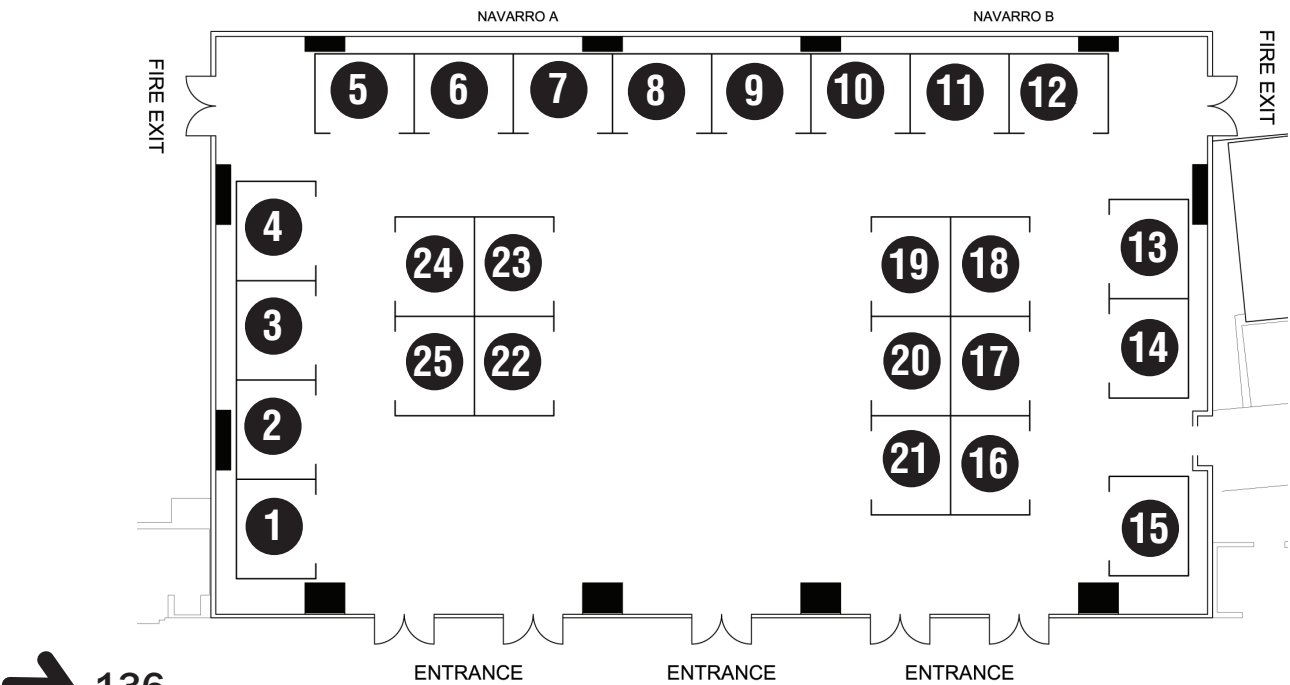
Messages for attendees can be left and retrieved at the **Envision 09** Registration Desk.

Parking Information

Self parking is available across the street at the Market Street Garage. Parking is \$15/day; hourly rates are available. No in and out privileges. Valet parking is available at the hotel for \$30/day with in and

Exhibitor Booth Map

- | | | |
|---|--|--|
| 1 Mutual of America | 11 Nidek, Inc. | 20 Envision Industries |
| 2 US Army Medical Department | 12 Franklin Electronic Publishers | 21 Envision Low Vision Rehabilitation Center |
| 3 Enhanced Vision | 13 American Foundation for the Blind | 22, 23 Optelec |
| 4 Beecher Research Company | 14 Freedom Scientific | 24 Precision Vision |
| 5 HumanWare | 15 Emerald Education Systems | 25 Eschenbach Optik of America |
| 6 HBI Technologies | 16 Fresnel Prism & Lens Co. | |
| 7 AER | 17 Neuro Vision Technology (NVT) | |
| 8 Chadwick Optical, Inc. | 18 Clarity Optometric Technologies | |
| 9 Good-Lite | 19 American Printing House for the Blind | |
| 10 Academy for Certification of Vision Rehabilitation | | |



Attendee Resources

out privileges. Overflow parking is available at the River Bend Garage (two blocks past the hotel on Market Street).

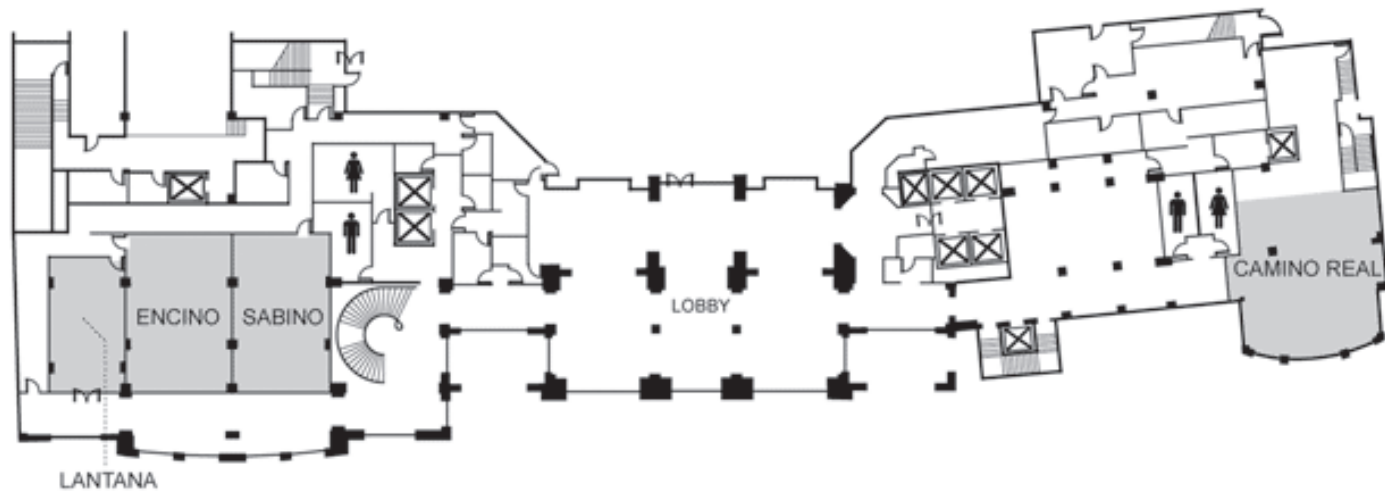
Presenters

All presenters must check in with the registration desk staff upon arrival at the hotel. Your “presenter’s packet” will contain information about your specific presentation including time and location, setup instructions, and audio-visual.

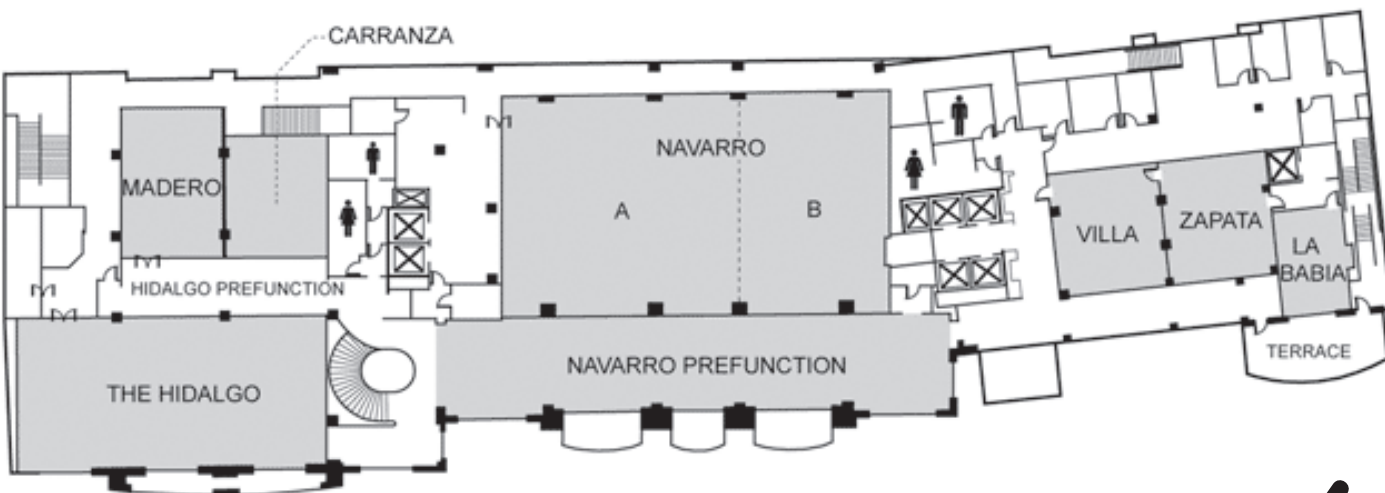
A **Speaker-Ready Room** is available in the Zapata Room. Hours for the Speaker-Ready Room are:

- | | |
|------------|-------------------|
| Tuesday: | 3:30 pm - 7:00 pm |
| Wednesday: | 7:00 am - 5:00 pm |
| Thursday: | 7:00 am - 6:00 pm |
| Friday: | 7:00 am - 6:00 pm |
| Saturday: | 7:00 am - 5:00 pm |

Westin Riverwalk Hotel – Level II (Lobby Level)



Westin Riverwalk Hotel – Level III (Ballroom Level)



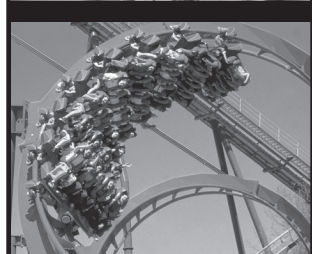




San Antonio – Relax on the River Walk

There are plenty of ways to enjoy your evenings in San Antonio, and many ways to relax on the River Walk. If you have trouble deciding, ask the concierge on the lobby level of the Westin Riverwalk Hotel.

Arts & Culture

San Antonio Children’s Museum	⇒ 0.4 km/0.3 miles
Buckhorn Hall of Horns/Hall of Texas History Museum	⇒ 0.5 km/0.3 miles
San Antonio Museum of Art	⇒ 3.2 km/2.0 miles
The Witte Museum	⇒ 24.1 km/15.0 miles

Local Attractions	
	River Walk ⇒ 0.0 km/0.0 miles
	Alamo Visitor Center ⇒ 0.2 km/0.1 miles
	La Villita ⇒ 0.3 km/0.2 miles
	Institute of Mexican Cultures ⇒ 0.4 km/0.3 miles
	Yanaguana Riverboat Cruises & Tours ⇒ 0.4 km/0.3 miles
	The Alamo ⇒ 0.5 km/0.3 miles
	The Texas Adventure ⇒ 0.5 km/0.3 miles
	Lone Star Brewery ⇒ 0.5 km/0.3 miles
	Tower of the Americas ⇒ 0.5 km/0.3 miles
	King Williams District ⇒ 0.6 km/0.4 miles
	Southwest Craft Center ⇒ 0.7 km/0.4 miles
	Institute of Texas Cultures ⇒ 1.6 km/1.0 miles
	Spanish Governor’s Palace ⇒ 3.2 km/2.0 miles
	Brackenridge Park Municipal Golf ⇒ 8.1 km/5.0 miles
	Botanical Gardens ⇒ 12.9 km/8.0 miles
	Running “R” Dude Ranch ⇒ 40.2 km/25.0 miles
	Mayan Dude Ranch ⇒ 40.2 km/25.0 miles
	Twin Elm Dude Ranch ⇒ 40.2 km/25.0 miles
	Hyatt Hill Country Resort ⇒ 40.2 km/25.0 miles
	Natural Bridge Caverns ⇒ 64.4 km/40.0 miles
	Natural Bridge Wildlife Ranch ⇒ 64.4 km/40.0 miles



Recreation

San Antonio Zoo/Sunken Gardens	⇒ 6.4 km/4.0 miles
Splashtown	⇒ 16.1 km/10.0 miles
Sea World	⇒ 29.0 km/18.0 miles
Six Flags Fiesta Texas	⇒ 32.2 km/20.0 miles
Schlitterbahn Water Park	⇒ 56.3 km/35.0 miles

Shopping

Gift Shop	⇒ 0.0 km/0.0 miles
Rivercenter Mall	⇒ 0.4 km/0.3 miles
El Mercado (Market Square)	⇒ 0.6 km/0.4 miles
Central Market	⇒ 12.9 km/8.0 miles
San Marcos (Outlet Shopping)	⇒ 96.6 km/60.0 miles

Entertainment

Alamodome	⇒ 0.3 km/0.2 miles
IMAX Theater	⇒ 0.4 km/0.3 miles
Theatre of Wax and Ripley’s	
Believe It or Not!	⇒ 0.4 km/0.3 miles
San Antonio Symphony	⇒ 0.4 km/0.3 miles
AT&T Center - Home of the San Antonio Spurs	⇒ 6.4 km/4.0 miles





Envision

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Westin Riverwalk Hotel • San Antonio, Texas