



STATE BOARD OF OPTOMETRY
 2450 DEL PASO ROAD, SUITE 105, SACRAMENTO, CA 95834
 P (916) 575-7170 F (916) 575-7292 www.optometry .ca.gov



Continuing Education Course
 Approval Checklist

Title:

Provider Name:

- Completed Application
 - Open to all Optometrists? Yes No
 - Maintain Record Agreement? Yes No
- Correct Application Fee
- Detailed Course Summary
- Detailed Course Outline
- PowerPoint and/or other Presentation Materials
- Advertising (optional)
- CV for EACH Course Instructor
- License Verification for Each Course Instructor
 - Disciplinary History? Yes No



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OPTOMETRY BOARD OF OPTOMETRY

2017 **CONTINUING EDUCATION COURSE APPROVAL**

For Board Use Only

\$50 Mandatory Fee

APPLICATION

Receipt #	Payor ID	Beneficiary ID	Amount
1-353854/4455		4485383	\$0

Pursuant to California Code of Regulations (CCR) § 1536, the Board will approve continuing education (CE) courses after receiving the applicable fee, the requested information below and it has been determined that the course meets criteria specified in CCR § 1536(g).

In addition to the information requested below, please attach a copy of the course schedule, a detailed course outline and presentation materials (e.g., PowerPoint presentation). Applications must be submitted 45 days prior to the course presentation date.

Please type or print clearly.

Course Title Prism Management for Hemianopsias	Course Presentation Date 05/21/2017
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Course Provider Contact Information

Provider Name John Lee (First) (Last) (Middle)		
Provider Mailing Address Street 2575 Yorba Linda Blyr City Fullerton State CA Zip 92831		
Provider Email Address jlee@ketchum.edu		
Will the proposed course be open to all California licensed optometrists?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
Do you agree to maintain and furnish to the Board and/or attending licensee such records of course content and attendance as the Board requires, for a period of at least three years from the date of course presentation?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	

Course Instructor Information

Please provide the information below and attach the curriculum vitae for each instructor or lecturer involved in the course. If there are more instructors in the course, please provide the requested information on a separate sheet of paper.

Instructor Name Valerie Quan (First) (Last) (Middle)		
License Number 14069	License Type Optometrist	
Phone Number (909) 469-8754	Email Address valeriequan@westernu.edu	

I declare under penalty of perjury under the laws of the State of California that all the information submitted on this form and on any accompanying attachments submitted is true and correct.

Signature of Course Provider

03/30/2017

Date



ASIAN AMERICAN OPTOMETRIC SOCIETY
PRESENTS

2016 May Honors Symposium

Sunday, May 21, 2017

FEATURING 5 HOURS OF CONTINUING EDUCATION

Agenda:

- | | |
|--|---|
| 9:00am – 9:05am | Welcome
Andy Kongsakul, O.D.
President, AAOS |
| 9:05am – 9:55am
(1 Hour CE) | Prism Management for Hemianopsias
Valerie Quan, O.D.
Western University of Health Sciences |
| 9:55am – 10:20am
(25 min) | <i>Break</i> |
| 10:20am – 12:00pm
(2 Hours CE) | Disease Masquerading as Visual Dysfunction Requiring Vision Therapy
John Tassinari, O.D.
Western University of Health Sciences |
| 12:00pm – 1:00pm
(1 hour) | <i>Lunch Break – buffet style</i> |
| 1:00pm – 2:40pm
(2 Hours CE) | Glaucoma Case Management Decisions
George Comer, O.D., M.B.A.
Marshall B. Ketchum University |

When: **Sunday, May 21, 2017**
Time: **9AM-3PM**
Registration starts at 8:30am
Where: **Dave and Buster's, the Outlets of Orange**
Building G, 20 City Blvd W #1
Orange, CA 92868

Free parking is available. Lunch Buffet will be served

The cost is **ZERO** as a benefit for our members. Cost is \$100 for non-members.
Our space is limited so please sign up soon! **Deadline is May 15, 2017**
Registration is through www.aaosociety.org

Topic: Prism Management for Hemianopsias

Author:

Valerie L. Quan, OD, FAAO
Associate Professor
Western University of Health Sciences, College of Optometry

Abstract:

Visual field loss is a common devastating vision problem resulting from stroke. These patients are at increased risk of injury and harm from bumping into objects, being struck by approaching objects, and falls. This grand rounds presentation will give an overview of prism treatment modalities for visual field expansion and increased visual spatial awareness. Case examples will be included to illustrate the concepts discussed.

Learning Objectives:

Participants will be able to:

1. Describe categories of hemifield defects, neglect and extinction.
2. Describe the basic protocols to evaluate field loss and neglect.
3. Calculate and prescribe yoked prisms.
4. Describe the Peli fitting system and Fresnel sector prisms.
5. Discuss vision rehabilitation options for ambulation, driving, and ADLs.

1. Introduction

- a. Vision problems from brain injury and stroke
 - i. Etiology of hemianopsias
 - ii. Prognosis
 - iii. Cerebrovasculature system

2. Hemianopsia categories

- a. Categories 1 to 4
- b. Neglect (Unilateral spatial inattention)
- c. Extinction versus neglect

3. Patient assessment

- a. Patient complaints
- b. Safety concerns
- c. Basic protocol
- d. Behavioral assessment

4. Patient management

- a. Compensatory and adaptive treatment
- b. Prisms
 - i. Yoked prisms
 - ii. Sector prisms
 - iii. Peli prisms
 - iv. Spotting prisms
- 5. Clinical cases to illustrate fitting concepts
 - a. Case 1 (Arteriovenous malformation rupture)
 - b. Case 2 (Right middle cerebral artery territory stroke)
 - c. Case 3 (Occipital stroke)
- 6. Visual field testing
 - a. Humphrey 30-2 Sita Std
 - b. Facial Amsler
 - c. SSA Kinetic
- 7. Charles Bonnet Syndrome and hemianopsias
- 8. Summary/Conclusion

AAOS
American Academy of Optometric Education

Prism Management for Homonymous Hemianopsias

Western University
College of Optometry


Clara L. Quinn, OD, FFAO
Associate Professor
Western University of Health Sciences
Casa Colina Centers for Rehabilitation

Objectives

- Describe categories of hemifield defects: neglect and extinction
- Describe the basic protocols to evaluate field loss and neglect
- Calculate and prescribe yoked prisms
- Describe the Pelu fitting system and Fresnel sector prisms
- Discuss vision rehabilitation options for ambulation, driving, and ADLs

THREE MOST DEVASTATING AND INTOLERABLE VISUAL PROBLEMS RESULTING FROM BRAIN INJURY AND STROKE

1. Visual field loss
2. Intractable double vision
3. Visual / balance disorders



Etiology of Hemianopsias

ADULTS

- 42-89% cerebral infarction or intracranial hemorrhage
- More common middle and posterior cerebral artery territory strokes
- Less common brain tumor, trauma, surgical, other CNS

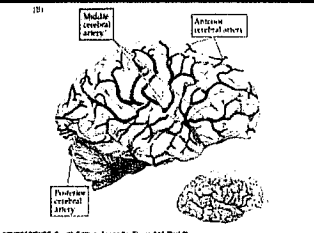
CHILDREN

- 30% neoplasms
- 26% cerebrovascular
- 19% trauma

Prognosis

- Spontaneous improvement varies greatly (8-67%)
- 46% improved in 1 week from ischemic event (Tiel et al.)
- 46% improved in 1 month from stroke (Gray CS et al.)
- Spontaneous improvement unlikely after 6 months from infarct (Kevin et al, Barbara et al., Zhang et al)

Blood Supply



ANTHROSCIENCE, Fourth Edition, Appendix, Figure A11.1 Part 2

Redundancy on the Right

Extinction similar to neglect?

Incidence of visual extinction after left versus right hemisphere stroke

- The incidence of visual extinction and of spatial neglect was not significantly different, neither after left hemisphere (2.4% neglect, 4.9% extinction) nor after right hemisphere (26.2% neglect, 24.3% extinction) stroke.
- Visual extinction seems to be asymmetrically associated with the human right hemisphere's spatial neglect.

Patient complaints

- Blurred vision in eye same side as field loss
- Some patients are unaware of deficits and continue to drive or want to drive
- Difficulty reading
- Reduced ADLs: dressing, eating, cosmesis
- Ambulation on one side more than the other
- Seeing only parts, not the whole
- Social concerns

Safety Concerns

- Increased falls risk
- Poor path planning
- Bumping into obstacles
- Driving
- Potentially being struck by a motor vehicle when crossing the street
- Strike one's head on a cupboard door
- Shaving resulting in cuts

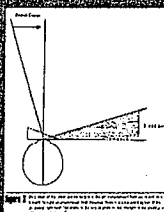
Basic Protocol

Inpatient setting	Outpatient setting
<ul style="list-style-type: none"> Confrontations: Single and Simultaneous; Facial, Amster Red cap comparison Observe eye movements, R/L gaze preference, head turn, neglect behaviors Grid draw, line bisection Visual perceptual midline pointing drill Blink to threat, Wemicke's pupill Yes/No 	<ul style="list-style-type: none"> Confrontations: Single and Simultaneous; Amster Grid Observe eye movements, R/L gaze preference, head turn, neglect behaviors Humphrey Sita-Fast 30-2 Gait observation (DGI)

Behavioral assessment

Compensatory and Adaptive Treatment

- Compensation (use intact function):
 - scanning strategies (ODs and OTs)
 - computerized training (e.g. D'Nevoision)
 - head turn towards field loss / tactile / visual anchors
- field expansion lenses:
 - with inattention
 - wywicki prism
 - mirrors (ambulation)
 - without inattention:
 - Wolfe / Zylberbaum
 - spotting prisms / in-wave prism




Yoked prisms (for neglect) - Ground In

- 1 degree shift is achieved with approximately 2 prism diopters
- base is towards field loss (e.g. left for left hemianopsia)
- Chromatic aberration and non uniform magnification
 - 10 to 20 prism diopters for each eye is a good starting point (up to 10) bases written relative to the patient, use 'In/Out' to avoid lab errors
- Reserve larger prism amounts for therapy or sitting task, also heavy
- Gait testing / caution with ambulation until habituation
- Add 40% grey/brown tint to reduce reflection related symptoms

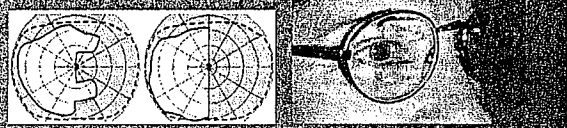
Sector (Fresnel or Chadwick) Prism

- Sector prisms are typically 12Δ (6°)
- patient needs to scan into prism
- Not ideal for neglect
- Diplopia when scanning, should be brief
- Once object is spotted, pt turns head




Peli Prism System (mounted or clip-on)

- improve patient reported detection and mobility
- 2 year, multicenter, placebo controlled trial
- pellicular prism segments (400 to 570, oblique or horizontal) fit above and below the line of sight expand the blind field 20° to 30° in all horizontal positions of gaze



Spotting (Gottlieb) prism

- Small ground wave or base out prism on the blind side of the visual field loss
- shift the image into the patient's still functional field as the patient makes natural scanning movements
- Gottlieb VFAS are 18-5Δ (10°)
- amplifying the effects of scanning to the blind field




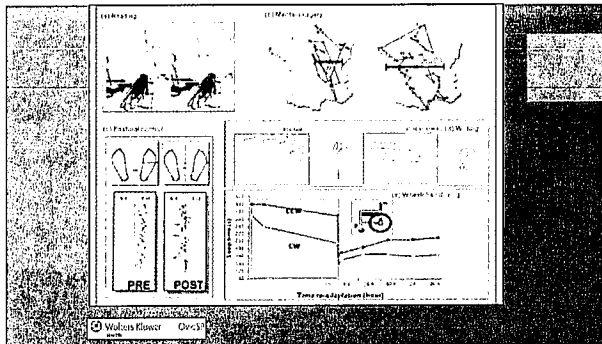
Patient fit with a Gottlieb VFAS on the right lens to treat a right homonymous hemianopsia

Yoked prism adaptation for neglect

Prism adaptation can be considered the most promising rehabilitation method for unilateral neglect to date especially in light of the fact that spontaneous recovery from neglect is very limited.

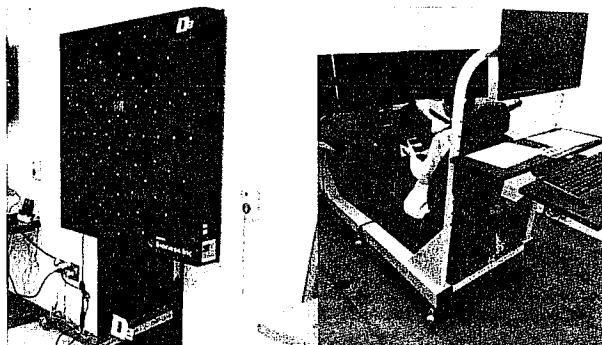
Wolfe, et al., 2006. Prism adaptation in the rehabilitation of patients with unilateral neglect. *Journal of Clinical Neurology*.





Driving (OT/CDRS)

- Some patients are unaware and continue to drive
- DL requirements vary by state
 - Binoocular field of at least 120° horizontal and 40° vertical is suggested (ICO)
- Refer for driving eval (CDRS)
- Patient will need report to reinstate license
- Binoocular visual fields



Various restrictions could be imposed...

1. Limitation to daylight driving
2. Restriction to a radius of miles from home
3. Restriction to familiar areas
4. Speed limitation
5. No highway driving
6. Requirement of more frequent testing, based on the prognosis of the condition

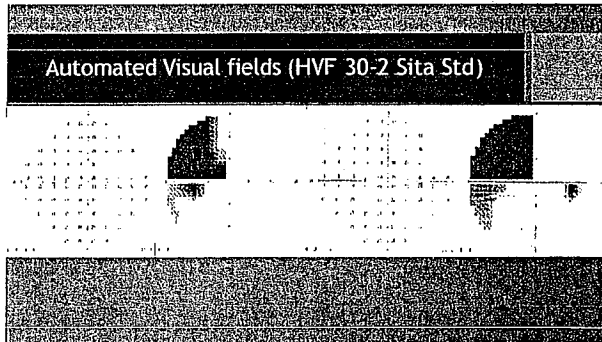
Cases

Case 1 - History

- 23 yo HM/AM rupture temporal lobe with hematoma s/p evacuation 1/8/15, R frontal lobe craniotomy 2/27/15, subacute infarction of the R internal capsule and L thalamus with L hemiparesis
- CC: Blurry vision OS > OD
- HPI: Left parieto-occipital hemorrhagic stroke 10/13, Treated at Keck USC Med Ctr
- OH/WH: Seizures, dysphagia, L-sided weakness
- Medx: Clonaz, Keppra
- All: NKDA

Case 1 - Pertinent Findings

- DVA cc 20/20 right eye 20/40 left eye
- OD plano
- OS -2.25 -3.25 X 172
- No ophthalmoplegia
- Eye movements were jerky and dysmetric on L-gaze
- Superior left quadrantsia
- Low left facial weakness



Case 1 - Yoked prism trial (6° Base In OD, 6° Base Out OS)

6° prism base left
Shifts vision 3 degrees

The image shows a patient wearing yoked prisms while walking in a hallway. The text indicates that the 6-degree prism base left shifts the patient's vision by 3 degrees.

Case 1 - Sector Prism trial (15° Base Left OS)

1-line VA loss per 5° Prism Diopters

The image shows a patient wearing sector prisms and a close-up of the prism. The text indicates that there is a 1-line VA loss per 5-degree prism diopters.

Observe ambulation

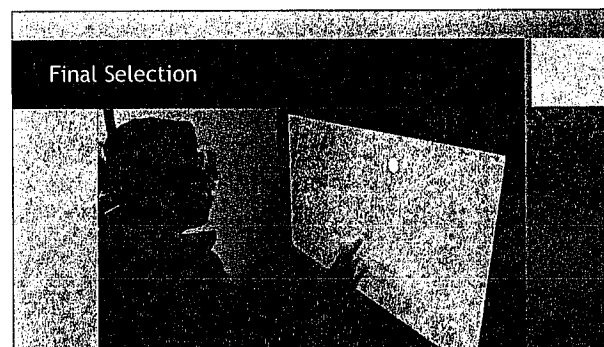
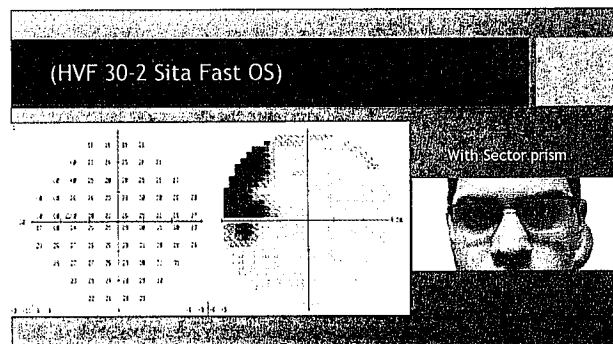
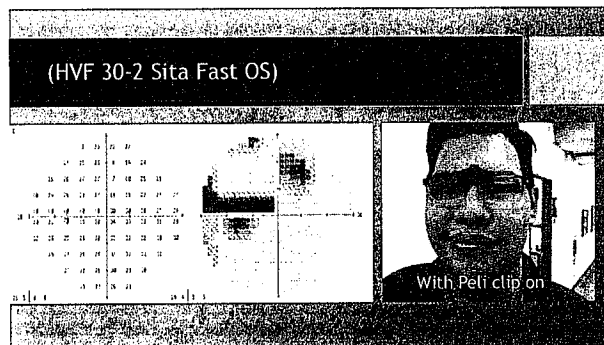
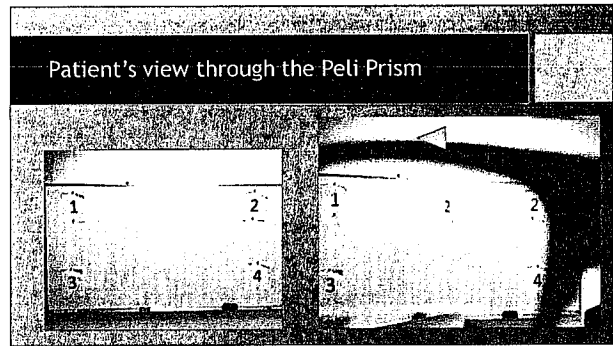
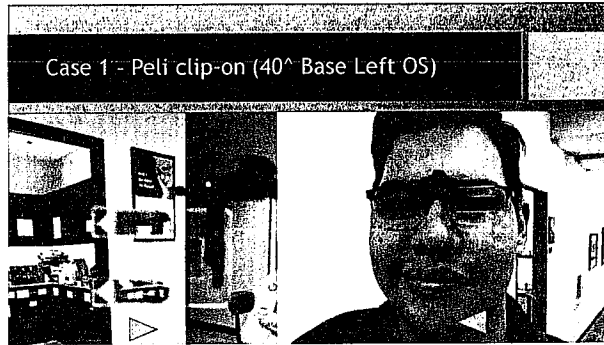
- Dynamic Gait Index (DGI)
- Validated tool to assess fall risk
- Abbreviated version is 4 items:
 1. Walk 20 feet
 2. Change speed
 3. Walk with H head turns
 4. Walk with V head turns

Case 1 - Peli style Fresnel prisms (25° Base Left OD)

Applied to the top portion only because he could not tolerate walking with the bottom portion

The patient preferred the spotting prism over his dominant eye (OD)

The image shows a patient wearing Peli style Fresnel prisms. The text indicates that the prisms were applied to the top portion only because the patient could not tolerate walking with the bottom portion, and that the patient preferred the spotting prism over his dominant eye (OD).



Case 2 - History

- 79 yo, WF Previous R occipital stroke 10/15 and recent R MCA territory infarct 2/16 with L hemianopsia and L hemiparesis,
- CC: Eyes strain, intermittent diplopia and dizziness
- COH/MH/POAG, Pseudophakia, HTN, T2DM, Hypertlipidemia, Parkinsonism
- Medx ASA 81mg, Atenolol, Cozaar, Glipizide, Levodopa, Losartan, Risperidone
- Allerg Codeine

Case 2 - Pertinent Assessments

1. Left homonymous hemianopsia with macular sparing
2. Primary open-angle glaucoma OU
3. Type 2 diabetes without retinopathy OU
4. Pseudophakia OU
5. Intermittent double vision due to convergence palsy
6. Parkinsonism with intact supraversion and saccadic eye movements

Automated Visual fields (HVF 30-2 Sita Fast)

Homonymous Left Hemianopsia without neglect

Prism trial protocol

1. Yoked prisms (6-8°) better for neglect and perceptual shifts
2. Sector prisms (Fresnel) not good for neglect
3. Peli Prisms (Fresnel or clip-on) nonspecific

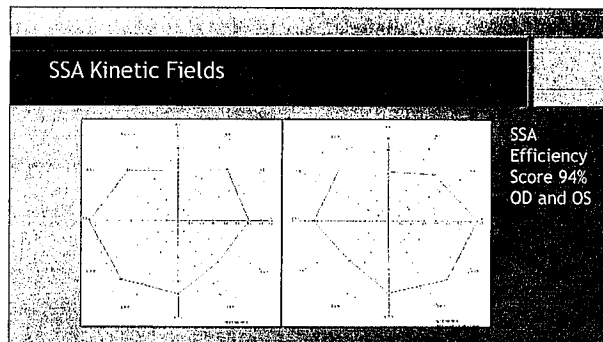
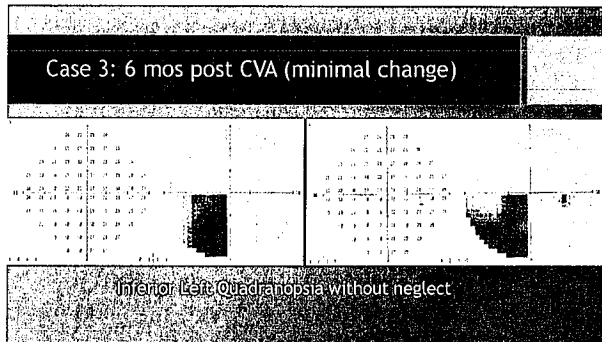
40° Peli

15° Sector

(HVF 30-2 Sita Fast OS)

Case 3: Background

- 71yo WF w/ HTN and hyperlipidemia
- Occipital infarction 8/2015
- treated with tPA within 1 hour with inferior quadrantanopia and 1-sided numbness



Charles Bonnet Syndrome (CBS) and hemianopsias

- One study found 16 of 120 patients had complex visual hallucinations in the hemianopic field (Kolmel et al.)
- Can be static, moving, formed
- Usually not associated with auditory
- Diagnosis or exclusion, in absence of psychoses

Summary

- Categorized hemi-defects with neglect and extinction
- Reviewed protocols to evaluate field loss and neglect
- Calculated prism magnitude and direction
- Fitting systems: Yoked, Sector, Fresnel and Pelt
- Rehabilitation options for safety and function

THANK YOU

Valerie L. Quan, OD, FAO
Chief of Neuro-Rehab Services

(909) 469-8754 Dr. Quan
(909) 706-3399 Clinic

Valerie L. Quan, OD, FAAO

Western University of Health Sciences
309 East Second Street
Pomona, California 91766-1854
(909)469-8754
Valeriequan@westernu.edu

OPTOMETRIC LICENSURES

- 8/2010 - Present **California.** Certification in diagnostic and therapeutic topical and oral pharmaceutical agents, including glaucoma.
- 10/2008 - 2011 **Arizona.** Certification in diagnostic and therapeutic topical and oral pharmaceutical agents.
- 7/1999 - 2010 **New York.** Certification in diagnostic and therapeutic topical pharmaceutical agents.

EDUCATION

- 6/2000 **Residency in Primary Care Optometry**
State University of New York, State College of Optometry, New York, NY 10036
- 5/1999 **Doctor of Optometry (O.D.)**
State University of New York, State College of Optometry, New York, NY 10036
- 3/1993 **Bachelor of Science (B.S.), Zoology and Chemistry**
University of Vermont, Burlington, VT 05405

PROFESSIONAL EXPERIENCE

Associate Professor, Western University of Health Sciences, College of Optometry

- 9/2013 – Present **Attending - Casa Colina Hospital for Rehabilitative Medicine**
Hospital appointment, inpatient and outpatient privileges. Evaluates and manages patients with vision complaints secondary to neurologic change in the inpatient, transitional living center and outpatient departments. Consults with physiatrists, neurologists, and occupational and physical therapists on a daily basis. Participates actively in the optometrist's role in interprofessional management during case conferences, in-service presentations, and shared model for rehabilitation. Contributes regularly to the Clinic Director's meeting, patient education, and provider development. Provides clinical supervision of 2nd year interns and 4th year externs.
- 8/2010 - Present **Chief of Neuro-Optometric Rehabilitation**
Directly responsible for unit development and operations in the area of acquired brain injury, including optometric training for the profession program, outreach, marketing and interdisciplinary management for this patient base. Provides annual continuing education in neuro-rehabilitative care. Students and residents are cross-trained in vision rehabilitation, neuro-optometry and multidisciplinary management of acquired brain injury. Provides clinical supervision of 3rd year interns and 4th year externs. Supervised MSMS students. Provides case conferences for the didactic portion of the 4th year externship program.

5/2011 – Present **Attending – Western Diabetes Institute**
Provides optometric care and management for ophthalmic manifestations related to diabetes, alongside interprofessional team of providers to provide a new model of synchronous clinical care planning.

8/2010 – Present **Attending – Primary Eye Care Service**
Clinical supervision of 2nd and 3rd optometric interns in a group practice setting. Provides majority of support for clinical faculty in billing, coding, and managed care issues. Experience with 4 electronic health records implementations in multi-provider setting.

Staff Optometrist, CIGNA Medical Group of Arizona

1/2009 – 7/2010 **Attending – Department of Optometry**
Comprehensive optometric care in a multidisciplinary outpatient medical setting. Cataract co-management, glaucoma treatment, well-versed in ordering lab work, imaging, consultation referrals, as well as billing, coding and implementation of electronic medical records.

Assistant Clinical Professor, SUNY State College of Optometry, June 2000 to Dec 2008.

11/2003 – 12/2008 **Founding Residency Program Supervisor in Head Trauma Vision Rehabilitation**
Developed novel residency program in managing acquired brain injury. Residents were cross-trained in vision therapy, neuro-optometry and multidisciplinary management of acquired brain injury. Attained ACOE accreditation for program in 3 years.

12/2006 – 12/2008 **Faculty – Neuro-Ocular Service / Ocular Disease and Special Testing**
Specialization in evaluation and management of neuro-ocular patients; multiple sclerosis, myasthenia gravis, thyroid orbitopathy, tumor and stroke. Proficient in performing, interpreting, and teaching advanced testing such as fundus photography, visual fields, HRT, GDx, OCT, B Scan and Orb Scan.

7/2000 – 12/2008 **Faculty – Head Trauma Vision Rehabilitation Unit**
Specialization in evaluation and management of head trauma patients in a multidisciplinary modality. Experience with vision rehabilitation and perceptual therapy, yoked prisms, visual field neglect and diplopia management in patients with history of head trauma or stroke. Sub-specialization in treatment of vision related vestibular issues.

7/2000 – 12/2008 **Attending – Primary Eye Care Service**
Clinical supervision of 3rd and 4th year optometric interns in a group practice setting. Proficient in electronic medical records, billing, coding, and managed care issues.

6/2008 – 12/2008 **Attending – International Center for the Disabled, New York, NY**
Full scope optometric care in an outpatient rehabilitation setting. Experience in multidisciplinary referrals, billing and coding. Collaboration with Physiatry Department and other rehabilitation team members.

6/2001 – 6/2006 **Attending – South Beach Psychiatric Center, Staten Island, NY**
Primary Optometric Care for inpatients and outpatients with a multitude of medical and psychiatric conditions.

- 1/2001 – 6/2006 **Attending – East New York Diagnostic and Treatment Center
Kings County Hospital, Brooklyn, NY**
Clinical supervision of 4th year interns and residents. Primary optometric care in a busy inner-city clinic; many patients with advanced disease. Co-management with glaucoma specialists and internists.
- 1/2001 – 6/2003 **Attending – Belvis Diagnostic and Treatment Center
Metropolitan Hospital, Bronx, NY**
Clinical supervision of 4th year interns and residents in a multidisciplinary setting. Primary optometric care and co-management with glaucoma specialists and internists.
- 7/1999 – 6/2000 **Resident – Primary Care Optometry**
Intensive broad based clinical training with management of pediatrics, contact lenses, binocular anomalies, glaucoma, retinal disease, and emergency care needs. Expanded knowledge and pursued interests in vision therapy, head trauma rehabilitation, clinical research, and neuro-optometry.

ACADEMIC TEACHING

- 1/2016 **Lecturer – NBEO Optometry Review Course**
Provided review of neuro-ophthalmic pathways in an active learning format.
- 6/2015 **Lecturer – Neuro-Ophthalmic Disease Course**
Created and delivered neuroimaging lecture using Articulate platform
- 3/2014 **Instructor – Principles and Practices of Optometric Procedures**
Guest lecturer on Neuro-Optometric Rehabilitation for 1st year students
- 5/2012 – 5/2013 **Instructor – Problem Based Learning**
Provided classroom instruction and small group discussions to achieve integration of basic sciences and evidence based practices in clinical practice.
- 10/2011-Present **Instructor of Record – Neuro-Optometric Rehabilitation: Patients with Neurological Damage**
Trained 3rd year students in the clinical application of vision rehabilitation in patients with acquired and congenital neurological deficits, emphasizing understanding of the neural basis and neurophysiology as well as integrated systems and multidisciplinary management of this patient base. Authored this course and created student learning objectives.
- 10/2011-Present **Instructor – Interprofessional Education in 3rd Year Curriculum**
Integral member of development team for interprofessional practices in clinical education. Pioneered clinical programs targeted to develop interprofessional management skills with team-based skill sets in the clinical environment, working with Medicine, Dentistry, Podiatry, Physical Therapy, Nursing and Pharmacy. Piloted programs include grand rounds programs, hospital based activities and synchronous care models.
- 1/2011-Present
1/2013-4/2012 **Instructor - Interprofessional Education in 2rd Year Curriculum
Interim Instructor of Record - Interprofessional Education in 2rd Year Curriculum**
Helped formulate materials for Team-based Objective Structured Clinical Evaluations (TOSCE) targeted for the College of Optometry students. Trained interprofessional rater for TOSCE events. Participated in rubric development to

capture evidence of interprofessional skill set. Major contributor to standardized case development for the College of Optometry.

- 3/2011-5/2012 **Course Liaison - Neuroscience**
Trained 1st year students in the mastery of neuroanatomy utilizing visual aids, hands on models, interactive teaching and Socratic method. Prepared syllabus, test items, and bi-serial correlations.
- 3/2011-5/2011 **Instructor – Behavioral Optometry**
Trained 2st year students in optometric diagnostic theory and procedures for behavioral-based optometric evaluations.
- 10/2010-11/2010 **Course Liaison – Head and Neck Anatomy**
Trained 1st year students in the mastery of anatomical structures utilizing visual aids, hands on models, interactive teaching and Socratic method.
- 9/2010-Present
11/2012-3/2012 **Instructor - Interprofessional Education in 1st Year Curriculum**
Interim Instructor of Record - Interprofessional Education in 1st Year Curriculum
Facilitated group discussions with students from various disciplines to foster improved interprofessional communications among 5 or more professions.
- 9/2010-12/2010 **Instructor – Principles and Practices of Optometric Procedures**
Trained 1st year students in optometric diagnostic theory and procedures, emphasizing psychomotor skills.
- 9/2008 –12/2008 **Instructor – Integrative Seminar**
Led discussion groups and seminars integrating basic science courses with clinical experiences for 1st year students.
- 9/2008 –12/2008 **Instructor – Optometric Methods I**
Trained 1st year students in optometric diagnostic theory and procedures.
- 6/2006 –12/2008 **Instructor of Record – Acquired Brain Injury Mini-Course**
Trained residents in optometric management of a specialized population.
- 6/2003 – 6/2007 **Instructor of Record – Advanced Clinical Procedures**
Led workshops in advanced clinical optometric procedures for residents.
- 1/2001 –12/2008 **Instructor – Visual Fields Course**
Lectured and trained 2nd year optometry students in visual field testing and interpretation.
- 9/1999 –12/2008 **Instructor – Optometric Methods II**
Lectured and trained 2nd year students in optometric diagnostic procedures. Consistent high rating on student feedback scores.

OTHER CLINICAL EXPERIENCE

- 7/2000 –12/2008 **Laser One – New York, NY**
Preoperative and postoperative management of lasik patients
Co-management with refractive surgeons

- 9/2006 - 8/2007 **VistaSite – New York, NY**
Comprehensive eye care in a private practice setting. Heavy ocular disease population; glaucoma, diabetic retinopathy, cataract co-management. Experience with managed care and medical billing.
- 9/1993 – 8/1997 **Clinical Research Assistant**
Memorial Sloan-Kettering Cancer Center - New York, NY
Performed clinical research with extensive patient interaction and collaborated with various members of an Oncology/Immunology multidisciplinary team. Experience with research protocols, data validation and statistical analysis.

SCHOLARLY ACTIVITIES

Papers (related to Optometry)

Manuscript submitted to Archives of Physical Medicine and Rehabilitation. Systematic Review of Quality of Life after Rehabilitation in Patients with Traumatic Brain Injury, April 2016.

Jasmine W. Yumori, OD, FAAO, David N. Dickter, PhD, Kierstyn Napier-Dovorany, OD, FAAO, **Valerie Q. Wren, OD, FAAO**, John H. Tegzes, MA, VMD, Dipl. ABVT, Sorrel Stielstra, PhD. "Optometry Students' Knowledge-Based Performance within Interprofessional Education Courses". *Optometric Education*: Volume 40 Number 3.

Wren V. "Traumatic brain injury update: ODs instrumental in fall prevention". *California Optometry*. 2012 Mar-Apr (39) 24-25.

Wren V. "Ocular and Visual Side Effects of Systemic Drugs – Clinically Relevant Toxicology and Patient Management." *Journal of Behavioral Optometry*, Volume 11 / 2000 / No. 6, pp 149-156.
REPRINTED in the Canadian Journal of Optometry

Other Papers

"A phase II study of topotecan administered five times daily in patients with advanced gastric cancer." American Journal of Clinical Oncology, 12/1997.

"A phase I trial of a modified, dose intensive FAMTX regimen with oral uridine rescue." Cancer, 11/1996.

"Neoadjuvant therapy of high-risk gastric cancer: a phase II trial of preoperative FAMTX and postoperative intraperitoneal fluorouracil-cisplatin plus intravenous fluorouracil." Journal of Clinical Oncology, 06/1996.

Posters and Scientific Papers

- 11/2016 **Wren V.** Atypical Charles Bonnet Syndrome post-ischemic cerebral infarction. Poster presented at American Academy of Optometry Annual Meeting.
- 9/2016 Landin S, **Wren V**, Liu C. Interprofessional Referral Patterns for Traumatic Brain Injury and Stroke Patients with Visual Dysfunctions: A Retrospective Study. Poster presented at Neuro-Optometric Rehabilitation Association Annual Meeting.
- 11/2014 **Amniotic membrane therapy in neurotrophic persistent corneal epithelial defect secondary to acoustic neuroma unresponsive to conventional treatment**
Poster Presentation, American Academy of Optometry Annual Meeting

- 10/2008 **Restrictive extraocular motility as an initial sign of metastatic breast cancer**
Poster Presentation, American Academy of Optometry Annual Meeting
- 12/2004 **Uncovering the Diagnosis in a Case of Cadasil Versus Multiple Sclerosis**
Poster Presentation, American Academy of Optometry Annual Meeting
- 12/2003 **A Sytematic Approach to Prism Management of a Noncomitant Vertical Deviation**
Poster Presentation, American Academy of Optometry Annual Meeting
- 12/2000 **Neuro-Ophthalmic Complications of Hydrocephalus: A Case Report**
Poster Presentation, American Academy of Optometry Annual Meeting
- 12/2000 **The Effectiveness of Cycloplegia and Pupillary Dilation with Cyclopentolate, Tropicamide and Phenylephrine in a Single Combination Solution**
Scientific Lecture, American Academy of Optometry Annual Meeting

Lectures

- 4/2016 **Prism Management of Hemianopsias**
Invited speaker, Loma Linda University Eye Institute, Grand Rounds Series
- 4/2016 **Online CE – Western University of Health Science’s Continuing Education Series**
COPE 48806-PD, Hospital-based Grand Rounds
 • Webinar format with post-CE assessment
- 3/2016 **Neuro-Optometric Rehabilitation in a Hospital Setting**
Invited Speaker, Neuropsychology Department, Casa Colina Centers for Rehabilitation
- 3/2016 **Neuro-Optometric Care and Rehabilitation**
Speaker, California Department of Rehabilitation Educational Event
Western University of Health Sciences, Pomona, CA
- 10/2015 **Founder’s Day Continuing Education, Western University of Health Sciences**
Invited lecture, Neuro-Optometry Grand Rounds
- 10/2015 **STAPLE Presbyopic Workshop**
Preceptor for several groups, advising during hands-on activity
- 9/2015 **STAPLE Toric Workshop**
Preceptor for several groups, advising during hands-on activity
- 11/2014 **Sports Concussions and Neuro-Optometric Management**
Ellerbrock Course, American Academy of Optometry Annual Meeting
- 10/2014 **Sports Concussions and Neuro-Optometric Management**
Invited lecture, Inland Empire Optometric Society
- 9/2014 **Public Health Perspectives for TBI Care**
Co-Presenter at the 7th International Congress of Behavioural Optometry
Birmingham, United Kingdom
- 8/2014 **Impact of Rehabilitation on TBI and Public Health Issues**
Co-Presenter, Western University-wide presentation
- 6/2014 **Neuro-Optometry Grand Rounds**
Invited lecture, Los Angeles County Optometric Society

- 2/2014 **Neuro-Optometric Rehabilitation**
Invited lecture to patients, Casa Colina Hospital for Rehabilitative Medicine, Pomona, CA
- 2/2014 **Neuro-Optometry Grand Rounds – All Day Workshop and AM series**
Invited lecture to medical staff and therapists, Casa Colina Hospital for Rehabilitative Medicine, Pomona, CA
- 2/2014 **Online CE – Western University of Health Science's Continuing Education Series**
COPE Pending - NO Neuro-Optometry Grand Rounds
- Webinar format with post- CE assessment
- 11/2015 **Glaucoma Grand Round Program at Western University**
3/2015 Continuing Education Program is to assist California optometrists in becoming glaucoma
11/2013 certified pursuant to CCR section 1571. 16-hour Grand Rounds Program equivalent to
4/2013 prospectively treating 15 individual patients for 12 consecutive months. The 16-hour
5/2012 Grand Rounds Program counts for part of the 25 patient Case Management
3/2012 requirement. Directly contributed 8 hours of teaching per session.
11/2012
- 9/2013 **3rd Annual Neuro-Optometric Rehabilitation Seminar**
Hays-Haine Symposium, Planning Committee Chair
Western University of Health Sciences, College of Optometry, Pomona, CA
- COPE Course 38949-FV Sports Concussion and Interprofessional Management
- 8/2013 **West LA Veteran's Administration – Grand Rounds**
8/2012 Invited Lecture, Los Angeles, CA
- Neuro-Optometric Management of Acquired Brain Injury
 - Neuroscience for the Clinician
 - Programming Neuro-Vision Rehabilitation
- 5/2013 **IPAD and Interactive Technology in the Classroom**
Invited Presentation and Hands-on Workshop for the Association of Optometric Contact Lens Educators Annual Meeting
- 2/2013 **Billing and Coding Update**
Faculty Presentation, calibration based presentation for improved efficiency and standardization amongst clinic providers using interactive responders
- 1/20/13 **Online CE – Western University of Health Science's Continuing Education Series**
COPE Course 36460-NO Programming Neuro-Vision Rehabilitation
- Online video format which includes 10 questions to assess course attendee
- 12/2012 **Visual Evoked Potentials**
Faculty Presentation, Hands-on in service training at the Eye Care Center at Western University of Health Sciences, Pomona, CA
- 8/2016 **IKEN Orthoptics Program**
10/2013 International attendees from Japan, Western University of Health Sciences, Pomona,
10/2012 CA in collaboration with California State University, Northridge Campus, Physical Therapy Department
- Discussion: Optometric Practice in the US; an international comparison
 - Hands-on workshop: Advanced Imaging and Vision Therapy Techniques
- 10/2012 **American Academy of Optometry Annual Meeting**

- Ellerbrock Course, Phoenix, AZ
COPE Course 35380-PM OD's Instrumental in Fall Prevention
- 9/2012 **2nd Annual Neuro-Optometric Rehabilitation Seminar**
Western University of Health Sciences, College of Optometry, Pomona, CA
- COPE Course 35505-NO Neuroscience for the Clinician
 - COPE Course 35506-NO Programming Neuro-Vision Rehabilitation
 - COPE Course 35505-NO Visual Evoked Potentials: Cases and Live Patient Demo
- 6/2012 **Kaiser Low Vision Annual Regional Meeting**
Invited Lecture, Pomona, CA
Neuro-Optometric Management for the Primary Care OD
- 5/2012 **Neuro-Optometric Management and Referrals**
Faculty Lecture, Western University of Health Sciences, Pomona, CA
- 4/2012 **Department of Defense and Veterans Administration TBI Vision Rehabilitation Symposium**
Invited Lecture, Naval Medical Center, San Diego, CA
COPE Course 34415-NO Vision Therapy Sequencing – Models to Enhance Neuroplasticity
- 3/2012 **Problem Based Learning in the Clinical Environment**
Faculty Lecture, Western University of Health Sciences, Pomona, CA
- 3/2012 **IPAD: Using Technology to Enhance Clinical Education**
Faculty Lecture, Western University of Health Sciences, Pomona, CA
- 3/2012-
Present **Optometric Residency Programs**
Invited by Dean of Student Affairs, Campus Lectures, 3 hours mini-series, Western University of Health Sciences. Lectured and facilitated Panel Discussion to educate students and faculty regarding the benefits and logistics of Optometric Residency Programs (**given annually**)
- 1/2012 **Meditrek – Faculty Calibration of Clinic Grading**
Faculty Presentation, Innovation with real-time based calibration using video segments and interactive responders
- 10/2010 **Recent Advances in Vision Rehabilitation**
COPE Course 29553-LV, Western University of Health Sciences, College of Optometry
- 9/2009 **Grand Rounds – Neuro Ophthalmic Cases**
COPE Course 26280-NO, CIGNA Medical Group Vision Department Meeting, AZ
- 5/2007 **Optometric Management of Visual Consequences Following Acquired Brain Injury**
Invited Lecture, Helen Hayes Hospital, Traumatic Brain Injury Symposia, Upstate NY
- 6/2005 **Ask the Experts: Vision Disturbances after Brain Injury**
Invited Lecture, Brain Injury Association of New York State 23rd Annual Conference, Albany, NY
- 2005-2008 **Typical Vision Problems Following Stroke or Traumatic Brain Injury**
Continuing Education Series, SUNY College of Optometry (given annually)

- 2005-2008 **Eye Movement Problems Following Stroke or Traumatic Brain Injury**
Continuing Education Series, SUNY College of Optometry (given annually)
- 2003-2008 **Anterior Segment Grand Rounds**
Continuing Education Series, SUNY College of Optometry (given annually)
- 2002-2008 **Vision Rehabilitation of the Brain-Injured Patient**
Continuing Education Series, SUNY College of Optometry (given annually)
- 2/1999 **Ocular Manifestations of Systemic Medications**
Lecture Presentation, SUNY College of Optometry
- 11/1999 **Ophthalmic Management of Hydrocephalus**
Lecture Presentation, SUNY College of Optometry

IRB Research Activity

- 6/2013 **GE/NFL Head Health Challenge Grant Submission: Assessing spatial localization as a predictor of mild traumatic brain injury.**
Not funded.
- 2010-Present **Effectiveness of Osteopathic Manipulative Treatment (OMT) and Vestibular Rehabilitation Therapy (VRT) Alone or in Combination on Balance and Visual Function in Patients with Vertigo and Somatic Dysfunction.**
Protocol 11/IRB/033
Grant # 11-13-647
Amount: \$100K
With Dr. Marcel Fraix and Dr. Donna Redman-Bentley
- 1999-2001 **Effectiveness of Cycloplegia and Pupillary Dilation with Cyclopentolate, Tropicamide and Phenylephrine in a Single Combination Solution: Phase II.**
With Dr. David Krumholz.

HONORS AND AWARDS

Third Year Clinical Education Preceptor of the Year, 2013-2013.
Morton L. Kimmelman Memorial Award for leadership within organized optometry, 1999.
Wesley Jessen Award for outstanding proficiency in contact lenses, 1999.
Dean's List – SUNY College of Optometry. Spring 1999.
Gold Key International Optometric Honor Society. Member 1998-1999.
Nomination, Alumnus of the Year, 2014, SUNY State College of Optometry
Resident Alumnus Award, 2016, SUNY State College of Optometry

PROFESSIONAL ORGANIZATIONS and non-University SERVICE

Mentor: ASCO Summer Institute for Faculty Development (SIFD) (2015-Present)
Podcast guest speaker: Optometry and Interprofessional Education, ASCO's Podcast Series (2015)
SpiRe grant reviewer: Department of Defense, Rehabilitation section (2014-Present)
Exhibitor: Brain Injury of California Regional Meeting (2015)
Corporate Member and Liaison: California Brain Injury Association (2013-Present)
Planning Committee: Annual Walk for Brain Injury, Los Angeles, CA (September 2014)
Faculty Advisor: Neuro-Optometric Rehabilitation Association (NORA) Student Club (2012-Present)
Peer-reviewer: California Optometric Association Publication (2010-Present)
Committee Member: Health Net Duals Advisory Committee (2012-Present)
Chair: ASCO SIG Neuro-Optometric Rehabilitation Educators (2015-2017)
Chair-elect: ASCO SIG Neuro-Optometric Rehabilitation Educators (2012-2014)
Fellow: American Academy of Optometry, since 2002.
Member: Neuro-Optometric Rehabilitation Association (NORA)

Member: College of Optometrists in Vision Development (COVD)
Member: American Academy of Optometry (AAO)
Member: American Optometric Association (AOA)
Member: New York State Optometric Association (NYSOA)
Member: California Optometric Association (COA), Inland Empire Local Society
Faculty Liaison: Faculty Relations Committee, American Academy of Optometry (2004-2008)
Committee Member: Strategic Planning Committee, NYSOA (2006-2008)
Board Member: Local Society of the American Optometric Association (2001-2007)
Trustee: American Optometric Student Association (1996-1998) won bid for annual conference.
Presenter: Career Day, Optometric Profession, El Roble Middle School (2015)

UNIVERSITY SERVICE

Participant: ASCO's Interprofessional Education and Collaborative Practice Summit (2016)
Presenter: Award's Day Presenter, College of Optometry (2015)
Member: IPE Design Team (2012-Present)
Contributor: Created NBEO-style items as a content expert in neuro-ophthalmic disease (2015)
Supervisor: Annual Performance Reviews and Mentorship, for Optometric Faculty (2012-2015)
Committee Member: Integrative Practice Planning Committee (2015)
Elected Position: Faculty Chair, College of Optometry (2015-Present)
Chair: Executive Committee, College of Optometry (2015-Present)
Chair: University Faculty Awards Committee, College of Optometry (2015-Present)
Member: Cross College Communications Group, College of Optometry (2015-Present)
Invited Member: University-wide Promotion and Tenure Task Force (2015)
Invited Member: Inter-Professional Practice Task Force (2015)
Research Advisor: Western University of Health Sciences Student Work Study Program (2012-2013)
Chair: Billing and Coding Committee (2012-Present)
Elected Member: Promotion and Tenure Committee (2011-2014)(2015-Present)
File Reviewer: Admissions Committee (2010-2015)
Member: House of Galileo, Faculty-Student group (2010-Present)
Track Leader, Rehabilitation Science Curriculum, College of Optometry (2016-Present)

COMMUNITY OUTREACH

1/2015 Voice of America – Guest for 1 hour radio show, helped procur speakers for the show, featured in AOA publication
<http://www.voiceamerica.com/episode/82690/sports-concussions-what-every-parent-should-know-and-look-out-for>

9/2013 Mission Home Health – Health care team
Invited Talk
Neuro-Optometric Rehabilitation

9/2013 Atria Del Rey Senior Living – Stroke Group
Invited Talk
Vision and Balance

9/2012 Palomares Senior Center – Stroke Group
Invited Talk
Post-Stroke Vision Changes

9/2012 Arcadia Community Center
Invited Talk and Vision/Balance Screening
Vision and Fall Prevention for Seniors

8/2012 Palomares Senior Center
Invited Talk

- 6/2012 Vision and Fall Prevention
Ontario Senior Center
Invited Talk and Vision Screening
Vision and Fall Prevention
- 5/2011 Upland Rotary Club
Invited Talk, Upland, CA
The Discipline of Learning and the Art of Caring

INDUSTRY DISCLOSURES

Goodlite Products, Inc. Nature of relationship is as advisor without monetary or interest gains for development of tools and kits to be used for Neuro-Optometric assessments.

MEDIA

- 5/2015 Optometry and Interprofessional Education, Invited guest speaker
ASCO's Podcast Series
<http://www.opted.org/4693-2/>
- 1/2015 Voice of America – Guest for 1 hour radio show, helped procur speakers for the show, featured in AOA publication
<http://www.voiceamerica.com/episode/82690/sports-concussions-what-every-parent-should-know-and-look-out-for>
- 1/2013 Optometry on interprofessional care
Public Relations video contribution aired on KCOW, Southern California's PBS station.
www.discoverhealth.tv

BIO

Dr. Wren joined Western University from the State University of New York College of Optometry where she was involved in multispecialty clinical education, research, and residency education for 10 years. Additionally, she brings experience from hospital-based, rehabilitation, psychiatric, VA medical center, private practice, and outpatient surgical settings. As the Chief of the Neuro-Optometric Rehabilitation Service, her focus lies in evaluation, treatment, and inter-professional management of patients with acquired brain injury. She provides state-of-the-art diagnostic, therapeutic, and rehabilitative assessments to enhance her patient's visual capabilities, daily activities, and quality of life. She is actively involved in clinical research and continuing professional education in the area of Neuro-Optometric Rehabilitation. Additionally, she teaches a course in the clinical application of vision rehabilitation in patients with acquired and congenital neurological deficits, emphasizing understanding of the neural basis and neurophysiology as well as integrated systems and multidisciplinary management of this patient base to future optometrists.