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: Glaucomatous Nerve & Imaging

Provider Name: Coastal Vision Medical Group c/o Ms. Gina Valdemar

☑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

Cashiering and Board Use Only			
Receipt #	Payor ID	Beneficiary ID	Amount
1-3995	5394304	4487043	50

BUSINESS, CONSUMER SERVICES, AND HOUSING AGENCY

GOVERNOR EDMUND G. BROWN JR.

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CALIFORNIA STATE BOARD OF OPTOMETRY

2017 MAY 17 PM 12:40

CONTINUING EDUCATION COURSE APPROVAL APPLICATION

$50 Mandatory

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 and topical outline of the subject matter. Applications must be submitted 45 days prior to the course presentation date.

Please type or print clearly.

Course Title	Course Presentation Date
Glaucomatous nerve + imaging	05/22/2017

Course Provider Contact Information

Provider Name: Coastal Vision Medical Group

Gina (First) Valdemar (Last) _____ (Middle)

Provider Mailing Address

Street 243 S. Main St. #100 City Orange State CA Zip 92868

Provider Email Address: gina valdemar@coastal-vision.com

Will the proposed course be open to all California licensed optometrists?	☒ YES ☐ 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?	☒ YES ☐ 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

Pinakin (First) Davey (Last) _____ (Middle)

License Number 14334	License Type PhD, OD, FAAO
Phone Number (714) 746-4679	Email Address gina valdemar@coastal-vision.com

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

Dan Tran, MD Medical Director

5-5-17
Date

Form CE-01, Rev. 2/16

Glaucomatous nerve and imaging

Pinakin Davey PhD, OD, FAAO

1 hour

Course description

This course deals with visual examination of the optic nerve and the advantages and additional information obtained using the Optical Coherence Tomography in evaluation of eyes with glaucoma and glaucoma suspects.

Course outline

See slides PDF

See outline attached

Course learning objectives

At the completion of the course participants will be able to

1) Recall the various signs of glaucomatous nerve visible on visual examination
2) Understand various considerations, errors when evaluating an eye using Optical Coherence Tomography (OCT)
3) Recall various techniques of analysis and output from OCT devices
4) Recall screening techniques available in OCT
5) Recall macula analysis and its place in glaucoma management
6) Recall various advances in OCT

Glaucomatous nerve and imaging

Glaucoma

Definitions

- "Ocular tissue damage at least partially related to intraocular pressure"
- A chronic, bilateral, often asymmetrical disease in adults, featuring acquired loss of optic nerve fibers and abnormality of visual field with an open anterior chamber angle.

Goals

- Document status of optic nerve structure and function
- Target pressure- so damage is unlikely to happen
- Maintain IOP below target pressure
- Monitor status of the optic nerve and reset target pressure if deterioration occurs.
- Minimize side effects of management and impact on vision and general health and quality of life.
- Educate and engage the patient in management

Imaging and glaucoma

- No longer colorful imaging technology!
- Several sophisticated imaging techniques are at different stages of development.
    - Most technology are changing rapidly

Gold standard

- Simultaneous stereo photography!
    - Problems?

Glaucomatous nerve

- 1. Observe the scleral ring to identify the limits of the optic disc and evaluate its size.

Measure Disc Size

- Observe the scleral ring to identify the limits of the optic disc and evaluate its size.
  - 66D 1 X magnification
- Cup size is associated with disc size
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Disc size

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- Medium > 1.5 but <2.5 mm^2
- Large > 2.5 mm^2

Neuroretinal rim characteristics

- Color of rim- pale rims not good
- Width of rim in all sectors
- ISNT rule
- ISNT rule is accurate about 70% of times

RNFL

- Healthy eye has striations
- A certain amount of NFL is required for visibility
- RNFL loss can be diffuse, localized or mixed

RNFL cont…

- Diffuse – reduction in RNFL brightness
- Localized – wedge shaped defect
- Localized RNFL defects should traced back the disc

Peripapillary atrophy

- Where
- How large

- *1/8, ¼, ½ , ¾, 1, > 1 DD*

Optic disc hemorrhages

- Transient
- Inferior temporal or superior temporal regions mainly

- Record present or absent
- If present where

Retinal vessels
CD ratio

- Vertical

- Horizontal

- Largest

- CD ratio of imaging devices will not match your findings!

Focal atrophy of neural rim
AKA Notch

Optic disc hemorrhages-3
Barring of circumlinear vessels
Laminar dot sign
Bayonetting

- Double angulation of blood vessel.

Nerve fiber bundle defect

- Rim changes also produces RNFL defects.
- Dark stripes or wedge shapes defect paralleling the normal striations.

- Common after disc hemorrhages

Optical Coherence tomography

Optical coherence tomography

- It has become the mainstay of all the imaging
- It is indeed at a great point now
    - Prior devices were changing rapidly
    - Did not have good software
    - Many imaging errors
    - Numerous unknowns on how to use technology

Comparison of Time versus Fourier domain

Image registration issues

Interpretation of OCT

Screening methods - IOP

- IOP poor screening tool
    - Sensitivity 47.1% specificity 92.4%
    - Most people with high pressures do not have or never develops POAG

Screening methods

- Screening can be made more effective by including ONH and RNFL assessment.
- Standard visual field is time consuming.
- Frequency doubling technology shows promise as a screening tool

Screening cont…

- Screening can be more efficient if
    - Targeted to specific groups
        - Older population
        - African Americans
        - Relatives of glaucoma patients

Ganglion Cell Complex (GCC)

Other devices

- Zeiss Ganglion Cell analysis- GCL+ IPL
- Topcon Maestro gives both
  - NFL+ GCL+ IPL
  - GCL+IPL
- Spectralis gives individual layers.

How is GCC measured

GCC Change

Case

NFL Change Maps

Can GCC be used as an independent parameter to diagnose glaucoma?

Progression and glaucoma

Progression

- Consensus is limited
- Visual fields tend to fluctuate in early glaucoma
- Reliable and repeatable structural measurements is very valuable
  - Fourier domain OCT 5 microns accuracy.

CASE MR.X

- DOB 1951
- Asian Male
- Medical unremarkable
- Family medical Brother Glaucoma
- Tmax – 23 OU
- On PGA IOPs 15-18 OU

- Overall quite regular in care and compliance

During follow-up

- One year had changed to generics PGA
- Seen by 4 different doctors in practice….

- Charts …. And observations

OD

OS

Whats new Glaucoma

Macular Pigment and glaucoma

- We know the advantages of multivitamins and AMD
  - Prevents oxidative damage
  - Quenches any free radical
  - Prevents photoreceptor death
  - Absorbs stray light

- Oxidative damage can also occur in glaucoma

Where is the evidence?

- Aqueous humor has lot of vitamin-C
- Macular pigment optical density is lower in glaucoma patients than individuals without glaucoma

Summary

- Measure Macular pigment in glaucoma patients
- Measure Ganglion Cell Complex/ Analysis
- Recommend multivitamin intake with good amount of Lutein and Zeaxanthin- **Dosage matters**!
- Helps all age related diseases.

Whats new with OCT

OCT Angiography: A New Approach to Protecting Vision

- **Non-invasive** visualization of **individual layers of** retinal vasculature
- Pathology **not obscured** by fluorescein staining or pooling

- Image acquisition requires **less time** than a dye-based procedure
- Reduced patient burden allows more frequent imaging to **better follow disease progression and treatment response**

How Does AngioVue Work?

Principles of AngioVue OCTA

- Uses motion contrast to detect blood flow
- Rapidly acquire multiple cross-sectional images from a single location on the retina
- Flow is the difference between two sequential scans
    - Flow = Frame #1 – Frame #2

SSADA: Split Spectrum Amplitude Decorrelation Angiography

AngioVue vs. FA & ICGA

Structure + Function: Retina

Structure + Function: Optic Nerve

See The Vessels Like You've Never Seen Them Before!

- Segment retinal vasculature into individual layers
- Eliminate effects of dye-based blurring and pooling
- Isolate areas of interest
- View 3x3mm and 6x6mm scans

Non-Invasive, Dye-Free & Fast

- No injection, no fluorescein
- Order test as needed to more closely monitor disease progression and treatment response
- Image acquisition in less than three seconds
- Total time in room approximately 10 minutes

Motion Correction Technology (MCT™): Minimizes Saccadic Motion to Enhance Image Intensity

Glaucoma

Summary

- Look at the nerve carefully
- Always perform scans and make sure you are satisfied- Quality of scan
- Look at individual parameters-5 microns change
- Perform change analysis

- Always perform Disc, RNFL and GCC
  - One may show changes first compared to other
- IOP still very important- measure it accurately and consistently
- Fundus photographs and visual fields still a must!!!

Glaucomatous nerve and imaging

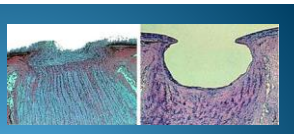
Pinakin Davey OD, PhD, FAAO
Professor and Director of Research

Western University of Health Sciences
College of Optometry

Disclosures

- Principal investigator for iVue OCT trial
- Principal investigator Topcon FDA trials for Maestro and OCT 2000
- Consultant for Topcon
- Speakers bureau Sanofi- Genzyme, Allergan

Glaucoma



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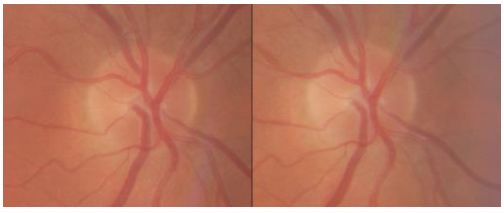

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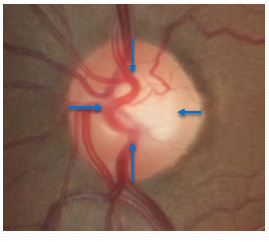

RNFL

- Healthy eye has striations
- A certain amount of NFL is required for visibility
- RNFL loss can be diffuse, localized or mixed

RNFL cont…

- Diffuse – reduction in RNFL brightness
- Localized – wedge shaped defect
- Localized RNFL defects should traced back the disc

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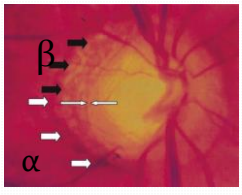
- Where
- How large
- *1/8, ¼, ½ , ¾, 1, > 1 DD*



Optic disc hemorrhages

- Transient
- Inferior temporal or superior temporal regions mainly
- Record present or absent
- If present where

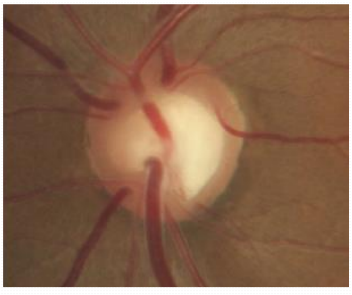
Retinal vessels

Look for this in patients that you suspect NTG

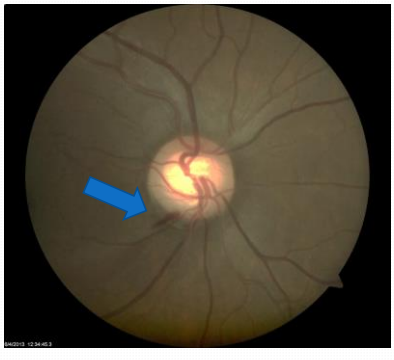
CD ratio

- Vertical
- Horizontal
- Largest
- CD ratio of imaging devices will not match your findings!

Focal atrophy of neural rim AKA Notch

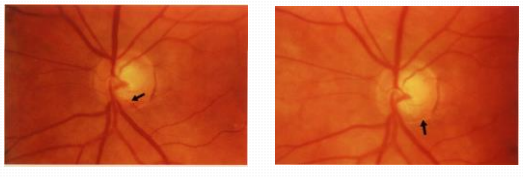


Optic disc hemorrhages

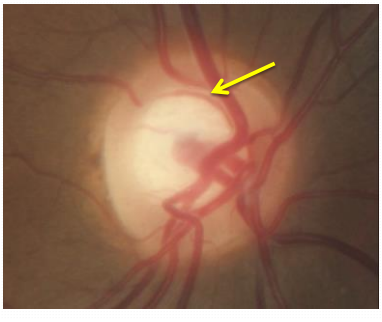


Optic disc hemorrhages-3

3 years later

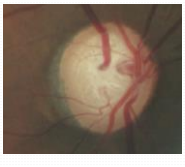


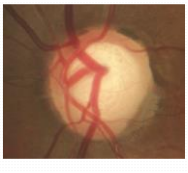
Barring of circumlinear vessels



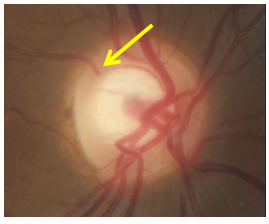
- Vessels that runs along margin between cup and neural rim.
- Found supero and infero temporally

Laminar dot sign



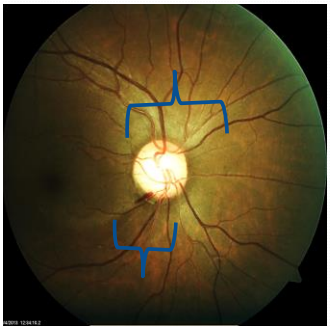


Bayonetting

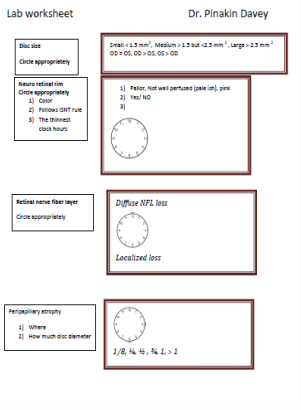


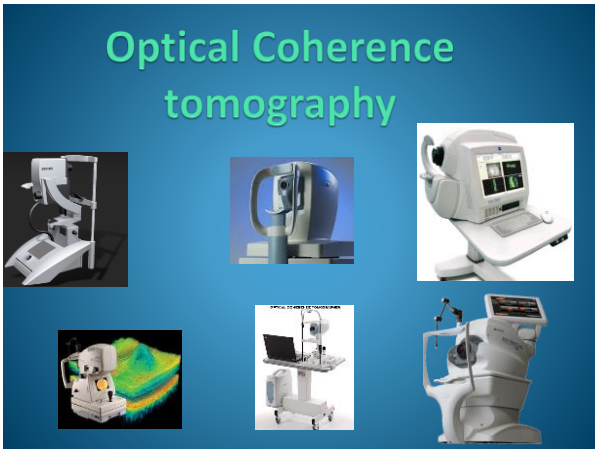
- Double angulation of blood vessel.

Nerve fiber bundle defect



- Rim changes also produces RNFL defects.
- Dark stripes or wedge shapes defect paralleling the normal striations.
- Common after disc hemorrhages





Optical coherence tomography

- It has become the mainstay of all the imaging
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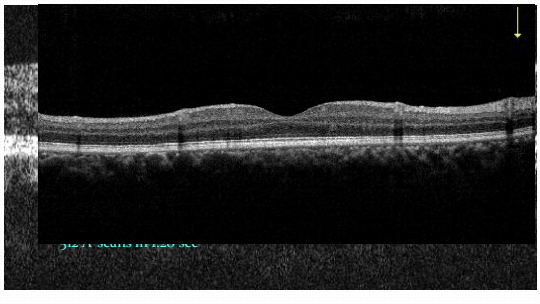
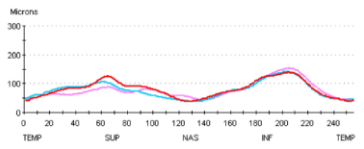
Comparison of Time versus Fourier domain

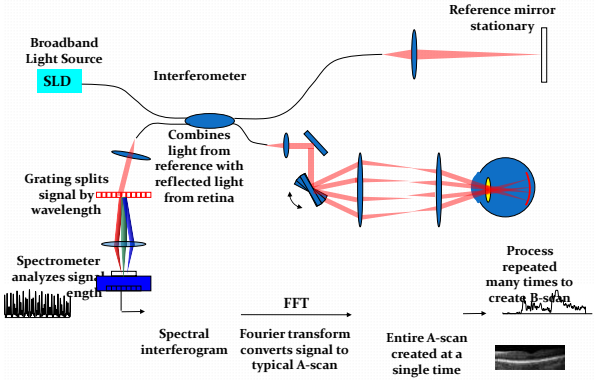


Time Domain OCT	Fourier Domain OCT
• Sequential	• Simultaneous
• 1 pixel at a time	• Entire A-scan at once
• 1024 pixels per A-scan	• 2048 pixels per A scan
• 400 A scans per second	• 26 to 70-80K K A scans per second
• 512 A-scans in 1.28 sec	• 1024 A-scans in 0.04 sec
• Slower than eye movements	• Faster than eye movements

Image registration issues



Fourier Domain OCT



Interpretation of OCT

Screening methods - IOP

- IOP poor screening tool
  - Sensitivity 47.1% specificity 92.4%
  - Most people with high pressures do not have or never develops POAG

Screening methods

- Screening can be made more effective by including ONH and RNFL assessment.
- Standard visual field is time consuming.
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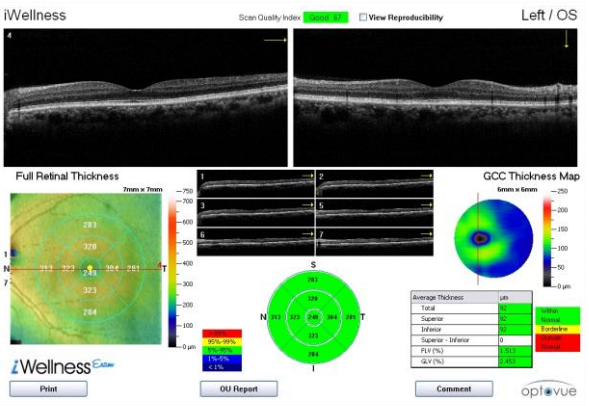


Eye and Brain
Dovepress
ORIGINAL RESEARCH

Sensitivity and specificity of the iVue iWellnessExam™ in detecting retinal and optic nerve disorders

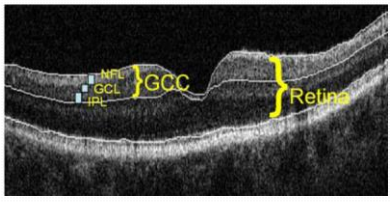
Catherine Awad[1]
Samantha Slotnick[2,3]
Sanjeev Nath[4]
Jerome Sherman[2–4]

[1]Nova Southeastern College of Optometry, Fort Lauderdale-Davie, FL, [2]SUNY State College of Optometry, [3]SUNY Eye Institute, [4]Eye Institute and Laser Center, New York, NY, USA

Sensitivity and specificity were calculated for identifying normal and abnormal individuals

99 % Specificity
95.5% sensitivity in identifying retinal diseases
90% identifying optic nerve disease

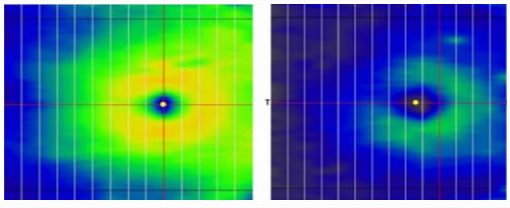
Ganglion Cell Complex (GCC)



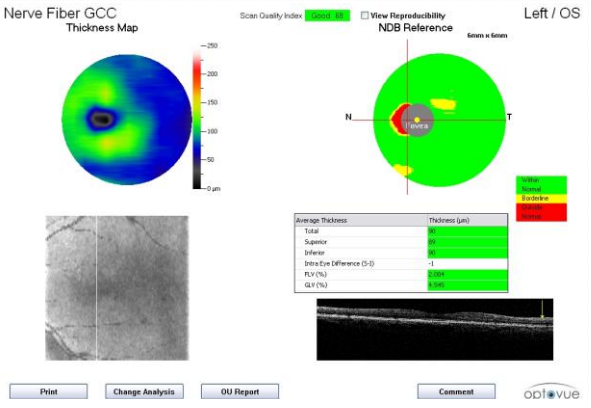
Other devices

- Zeiss Ganglion Cell analysis- GCL+ IPL
- Topcon Maestro gives both
  - NFL+ GCL+ IPL
  - GCL+IPL
- Spectralis gives individual layers.

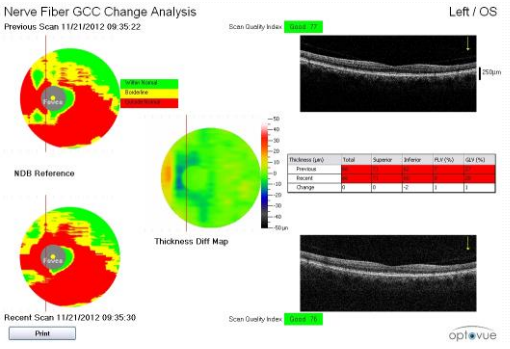
How is GCC measured



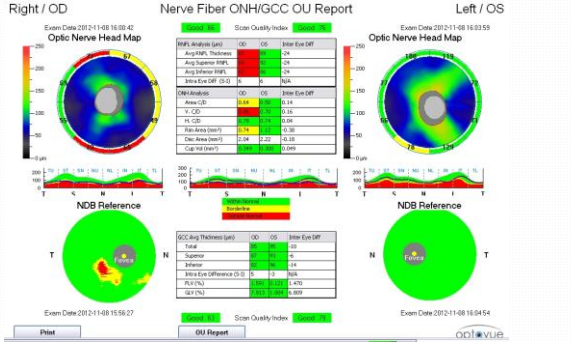
GCC output

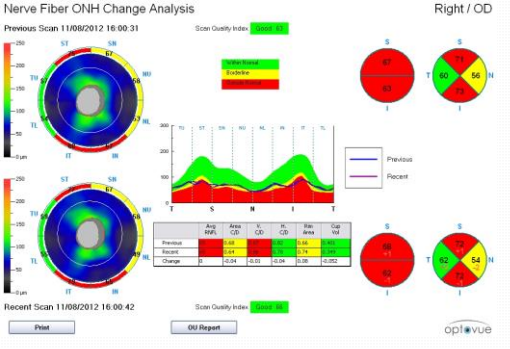


GCC Change

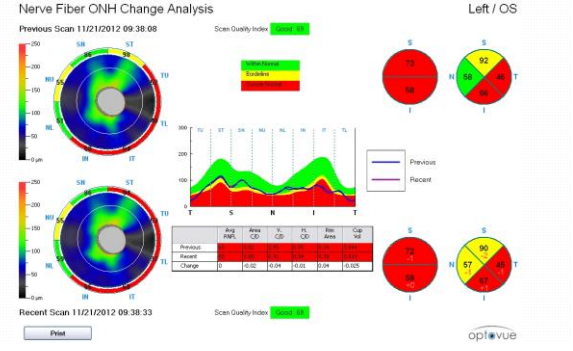


Case





NFL Change Maps



Can GCC be used as an independent parameter to diagnose glaucoma?

The Applicability of Ganglion Cell Complex Parameters Determined From SD-OCT Images to Detect Glaucomatous Eyes

Paramastri Arintawati, MD, Takashi Sone, MD,* Tomoyuki Akita, PhD,† Junko Tanaka, PhD,† and Yoshiaki Kiuchi, MD, PhD**

(*J Glaucoma* 2013;22:713–718)

Methods: Two hundred sixty-one eyes, including 68 normal eyes and 32 preperimetric glaucoma, 81 early glaucoma, and 80 advanced glaucoma were analyzed in the present study. The thicknesses of the GCC and retinal nerve fiber layer were measured using RTVue spectral-domain optical coherence tomographic (SD-OCT) images. The area under the receiver operating characteristic (AUROC) curve and sensitivities at fixed specificities were calculated for each parameter. A logistic regression analysis was used to determine the risk factors for glaucoma.

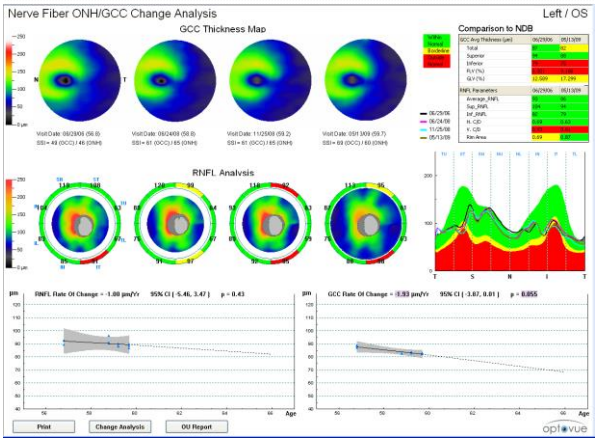
Evaluation of the OCT Parameters as Diagnostic Tests With the AUROC Curve

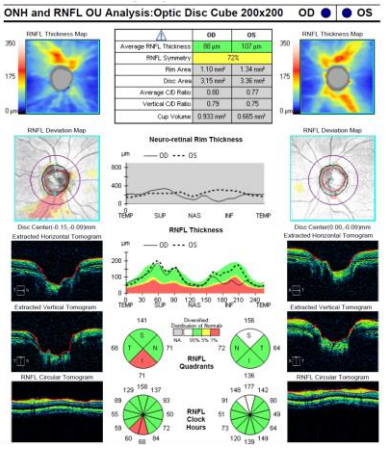
	N vs. PG	N vs. EG	N vs. AG
GCCa	0.795 (0.667-0.882)	0.806 (0.727-0.866)	0.902 (0.838-0.942)
GCCs	0.754 (0.617-0.853)	0.761 (0.678-0.828)	0.880 (0.809-0.928)
GCCi	0.815 (0.690-0.897)	0.795 (0.714-0.858)	0.915 (0.851-0.953)
FLV	0.745 (0.622-0.839)	0.789 (0.709-0.851)	0.948 (0.888-0.977)
GLV	0.806 (0.679-0.891)	0.816 (0.740-0.874)	0.929 (0.871-0.961)
RNFLa	0.740 (0.620-0.832)	0.734 (0.647-0.806)	0.910 (0.846-0.949)
RNFLs	0.748 (0.626-0.840)	0.725 (0.636-0.798)	0.889 (0.817-0.935)
RNFLi	0.723 (0.605-0.816)	0.700 (0.611-0.776)	0.912 (0.858-0.947)

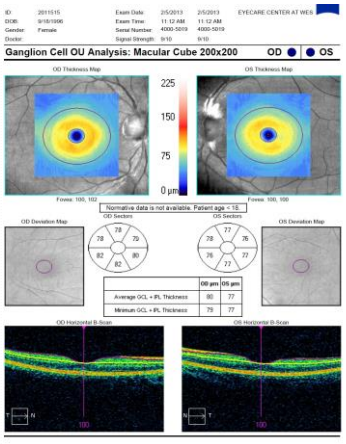
Progression and glaucoma

Progression

- Consensus is limited
- Visual fields tend to fluctuate in early glaucoma
- Reliable and repeatable structural measurements is very valuable
  - Fourier domain OCT 5 microns accuracy.







CASE MR.X

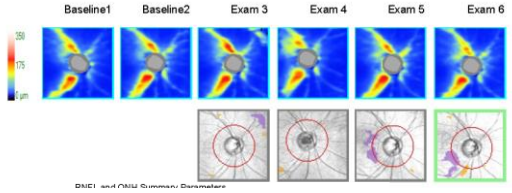
- DOB 1951
- Asian Male
- Medical unremarkable
- Family medical Brother Glaucoma
- Tmax – 23 OU
- On PGA IOPs 15-18 OU
- Overall quite regular in care and compliance

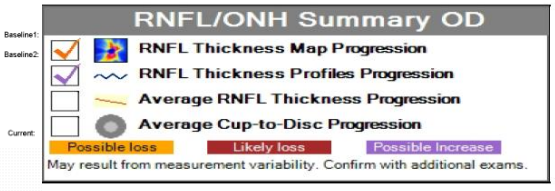
During follow-up

- One year had changed to generics PGA
- Seen by 4 different doctors in practice….

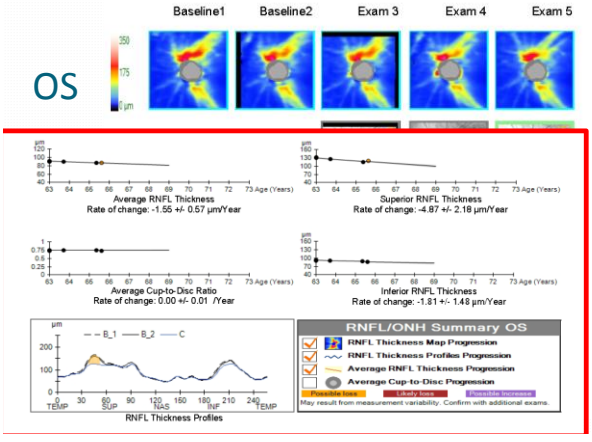
- Charts …. And observations

OD





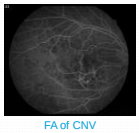
OS

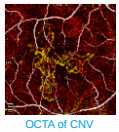


Whats new in OCT

OCT Angiography: A New Approach to Protecting Vision

- **Non-invasive** visualization of **individual layers of** retinal vasculature
- Pathology **not obscured** by fluorescein staining or pooling
- Image acquisition requires **less time** than a dye-based procedure
- Reduced patient burden allows more frequent imaging to **better follow disease progression and treatment response**

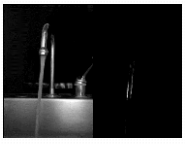

FA of CNV


OCTA of CNV

How Does AngioVue Work?

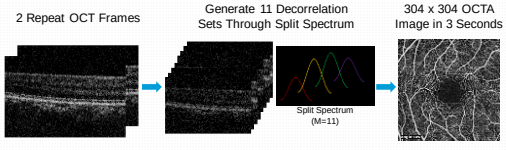
Principles of AngioVue OCTA

- Uses motion contrast to detect blood flow
- Rapidly acquire multiple cross-sectional images from a single location on the retina
- Flow is the difference between two sequential scans
  - Flow = Frame #1 – Frame #2



SSADA: Split Spectrum Amplitude Decorrelation Angiography

Generate Multiple OCTA Images in Parallel



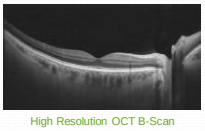
The SSADA algorithm was developed by David Huang, MD, PhD at Oregon Health Sciences University.

SS Gao, G Liu et al., "Optimization of the split-spectrum amplitude-decorrelation angiography algorithm on a spectral optical coherence tomography system," Optics Letters, In press (2015)

AngioVue vs. FA & ICGA

	OCTA	FA/ICGA
Non Invasive	X	
Dye Free	X	
Displays patterns of leakage, pooling, staining		X
Displays retinal and choroidal vasculature	X	FA: Retinal ICGA: Choroidal
Provides flow information at a fixed point in time	X	
Allows segmentation of retinal layers	X	
Imaging time	6 seconds per eye	10-30 minutes
Prone to motion artifact	X	

Structure + Function: Retina

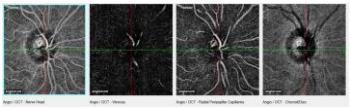

High Resolution OCT B-Scan


Widefield En Face

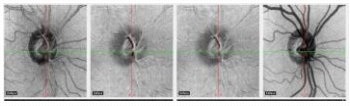

OCTA: Superficial & Deep Capillary Plexus


OCTA: Outer Retina & Choriocapillaris

Structure + Function: Optic Nerve



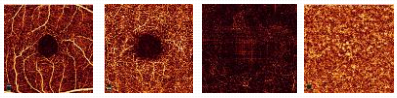
Function: OCTA



Structure: En Face

See The Vessels Like You've Never Seen Them Before!

- Segment retinal vasculature into individual layers
- Eliminate effects of dye-based blurring and pooling
- Isolate areas of interest
- View 3x3mm and 6x6mm scans



Superficial Capillary Plexus 3µm Below ILM → 15 µm Below IPL

Deep Capillary Plexus 15µm Below ILM → 70 µm Below IPL

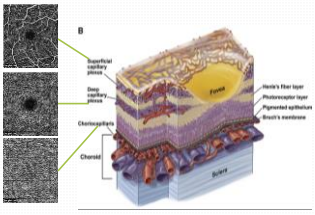
Outer Retina 70µm Below IPL → 30 µm Below RPE Reference

Choriocapillaris 30 µm Below RPE Reference → 60 µm Below RPE Reference

Non-Invasive, Dye-Free & Fast

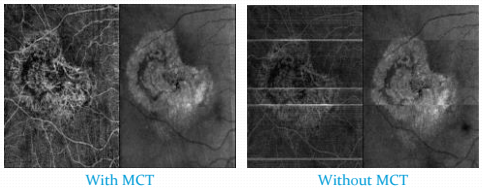
- No injection, no fluorescein
- Order test as needed to more closely monitor disease progression and treatment response
- Image acquisition in less than three seconds
- Total time in room approximately 10 minutes

Segmentation, Slabs & Slices



- Segmentation allows rapid identification and interpretation of pathological vascular features
  - Typically performed on structural OCT images – key reference points:
    - ILM
    - IPL
    - OPL
    - RPE
    - Bruch's membrane
  - Slabs are thick tissue sections: inner retina, outer retina
  - Slices are thin sections of a few microns used to examine fine details

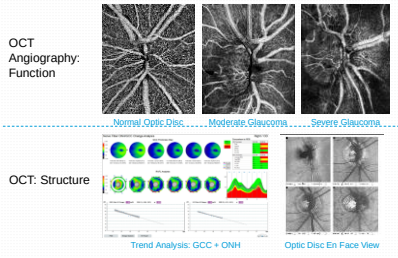
Motion Correction Technology (MCT™): Minimizes Saccadic Motion to Enhance Image Intensity



With MCT

Without MCT

Glaucoma



Previously diagnosed patient. Images courtesy of Michel Puech, MD, FRCS

Summary

- Look at the nerve carefully
- Always perform scans and make sure you are satisfied- Quality of scan
- Look at individual parameters-5 microns change
- Perform change analysis
- Always perform Disc, RNFL and GCC
  - One may show changes first compared to other
- IOP still very important- measure it accurately and consistently
- Fundus photographs and visual fields still a must!!!

Curriculum Vitae

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Western University of Health Sciences
Phone: 901-831-1562 (mobile)
909-247-1781 (home)
Email: contact@pinakin-gunvant.com

Education:

Bachelor of Science Optometry 1st Class (Aug 1995 – June 1999)
Elite School of Optometry, Chennai, India
Affiliated to Birla Institute of Technology and Science, Pilani, Rajasthan, India

Graduate Education
Doctor of Philosophy (11/1999- 12/2002) Mentor Professor Daniel O' Leary
Dissertation: "The influence of corneal dimensions on measurement related to glaucoma and ocular hypertension"
Anglia Polytechnic University (now called Anglia Ruskin University)
Department of Optometry and Ophthalmic Dispensing
Cambridge, England

Post-doctoral fellowship: Department of Psychological and Brain Sciences **Mentor Professor Edward A Essock PhD**, Ocular Imaging and Glaucoma
University of Louisville, Kentucky (02/2003/03/2006)

Professional education
Doctor of Optometry (2006-2010) Southern College of Optometry

Fellow of American Academy of Optometry (FAAO): Class of 2003 in scientist/research track.

Research Experience:

06/1998 to 06/1999 Histopathology lab in Sankara Nethralaya, Medical Research Foundation, Chennai, India. Supervisor consultant ophthalmologist: Dr. Jyotirmay Biswas

12/1999 to 01/2003 Data collection for Ph.D. studies; I conducted experiments at Department of Optometry and Ophthalmic Dispensing, Anglia Ruskin University, Cambridge England. Supervisors Professor Daniel O'Leary and Dr. Russell Watkins

08/2001 to 10/2001 Data collection for Ph.D. studies; I conducted research at Department of Ophthalmology, Norfolk and Norwich NHS Trust Hospital, Norwich, England. Supervisors' consultant ophthalmologists: Drs. David Broadway and Russell Watkins

11/2001 to 01/2002 Data collection for Ph.D. studies; I conducted research at Department of Glaucoma, Sankara Nethralaya, Medical Research Foundation Chennai, India. Supervisors' consultant ophthalmologists: Drs. Lingam Vijaya and Mani Baskaran
02/2003 to 03/2006 Data collection for post-doctoral research; I conducted research in the Department of Glaucoma, the Kentucky Lions Eye Care Center Louisville, Kentucky, USA. Supervisor: Dr. Edward Essock, PhD and consultant ophthalmologist: Dr. Joern Soltau

Additional training:

07/2007 Selected and attended Summer Institute for Faculty Development workshop conducted by Association of Schools of Colleges of Optometry.

02/2008 Attended three day training and workshop on Institutional Review Board fundamentals for IRB administrators

07/2008 Selected and attended The Summer Clinical Research Institute at The Ohio State University conducted by the American Optometric Association and American Academy of Optometry

Professional Experience:

07/1999 to 10/1999: Chennai, India
Sankara Nethralaya Eye Hospital Chennai, India; Optometrist in Department of Optometry
6/2002 to 01/2003: Norwich, England
Practitioner examining patients for refractive surgery and after care with Dr. Pandit (Ophthalmologist) and Mr. Conway (Optometrist)
03/2006-06-2011 Memphis Tennessee, USA
Faculty at the Eye Center at Southern College of Optometry
01-2012- 01-2013 Part time Optometrist Nvision Pasadena
07/2011 to present: Pomona, California USA
Faculty at the Eye Care Center at Western University of Health Sciences
Professional License
NPI number 1659685733

2010 to 2012 Therapeutic Optometrist Tennessee (2948)

2011 to present California Optometrist 14334 TLG

Academic Appointments:

12/1999 to 01/2003: Cambridge, England
Part-time lecturer in the Department of Optometry and Ophthalmic Dispensing, Anglia Polytechnic University, Cambridge, England
03/2006 to 06/2011: Memphis, Tennessee
Assistant Professor at Southern College of Optometry
10/2006 to 2013: Louisville, Kentucky USA
Adjunct faculty at University of Louisville, Kentucky USA
07/2009 to 2012: Memphis, Tennessee, USA
Adjunct faculty at the University of Memphis, Tennessee, USA
07/2011 to present: Memphis, Tennessee
Adjunct faculty at Southern College of Optometry
07/2011 to 2014: Pomona, California, USA
Associate Professor at Western University of Health Sciences, College of Optometry

07/2014 to present Pomona, California, USA
Professor at Western University of Health Sciences, College of Optometry
07/2015 to present Pomona California, USA
Director of Research, Western University of Health Sciences, College of Optometry

Membership in Professional Organizations:
2002 to present Association for Research in Vision and Ophthalmology
2002 to present American Academy of Optometry; **Fellow since 2003**
2006 to present Optometric Glaucoma Society (Appointment based on research merit)
2011 to present American Optometric Association
2011 to present California Optometric Association
2011 to present Inland Empire Optometric Society

Travel awards:
1) The Wellcome Trust, UK, Travel Grant (in the Ph.D. and post-doctoral category; £1000) to travel to Association for Research in Vision and Ophthalmology (ARVO) 2002.
2) Anglia Polytechnic University Travel Grant (£1000) to travel to American Academy of Optometry (AAO) 2002.
3) Student Travel fellowship award ($500), from AAO 2003.
4) Grawemeyer Research Fellowship from University of Louisville ($ 750) to travel to ARVO 2004
5) Student Travel fellowship award ($500), from AAO 2004
6) Grawemeyer Research Fellowship from University of Louisville ($ 750) to travel to ARVO 2005

Academic awards:
1) Best poster, World Optometry Day, Elite School of Optometry **(1996)**
2) Best scientific paper award, Indian Contact Lens Conference **(1998)**
3) Best contact lens project award, Elite School of Optometry **(1999)**
4) Award for proficiency in public relations and communication Elite School of Optometry, **(1999)**
5) Award from the Governor Ernie Fletcher of Commonwealth of Kentucky for service to Kentucky Optometric Association and overall benefit to the state of Kentucky **(2007)**
6) WITELO Medal from University of Medical Science, Poznan, Poland in recognition of help for the Optometry Development in Poland **(2011)**
7) Awarded honorary membership to COMOF Optometric Extension Program national optometry organization Mexico in recognition of continued efforts for the progress and development of Optometry in Mexico **(2013)**
8) Excellence in Optometric Education Award 2015, Awarded by California Optometric Association **(2016)**
9) Provost's Distinguished Scholar Award **(2016)**
10) Young Optometrist of the Year Award 2016, Awarded by California Optometric Association **(2017)**

Patents:

Systems, methods, and computer-readable media for detecting and predicting a progression of retinal pathologies US 20130114041 A1 Patent Application Serial No. 61/234,803 Ref. 304044.84705P

Status: Awarded 2013 Inventors Drs. Khan Iftekahruddin, Paul Kim, **Pinakin Davey**

Publications:

Peer reviewed and indexed journals

1) J Biswas, R Raghavendran, **G Pinakin**, D Arjundas: Presumed Eales' disease with neurological involvement Report of three Cases: ***Retina,*** 2001: 21:141-145.
2) RJ Watkins, L Panchaal, J Uddin, **P Gunvant**: Vertical cup-to-disc ratio - Agreement between direct ophthalmoscopic estimation, fundus biomicroscopic estimation and scanning laser ophthalmoscopic measurement. ***Optometry and Vision Science***, 2003: 80: 454-459.
3) **P Gunvant**, DC Broadway, RJ Watkins: Repeatability and reproducibility of the BVI ultrasonic pachymeter, ***Eye,*** 2003: 17:825-828.
4) EP Osuobeni, C Hegarty, **P Gunvant**: The effect of corneal thickness on the estimate of anterior chamber depth, ***Clinical and Experimental Optometry***, 2003: 86: 371-375.
5) **P Gunvant**, M Baskaran, L Vijaya, IS Joseph, RJ Watkins, M Nallaputla, DC Broadway, DJ O'Leary: Effect of corneal parameters on measurements using the Pulsatile Ocular Blood Flow Tonograph and Goldmann applanation tonometer. ***British Journal of Ophthalmology***, 2004; 88: 518-522.
6) **P Gunvant**, RJ Watkins, DC Broadway, DJ O'Leary: Repeatability and effects of sequential measurements with POBF Tonograph ***Optometry and Vision Science*****,** 2004; 81: 794-799.
7) **P Gunvant**, Y Zheng, E Essock, P Chen, D Greenfield, H Bagga, M Bohem: Predicting subsequent visual field loss in glaucoma subjects with disc hemorrhage using RNFL polarimetry. ***Journal of Glaucoma*****,** 2005; 14: 20-25.
8) EA Essock, Y Zheng, **P Gunvant**: Analysis of GDx-VCC polarimetry data by Wavelet-Fourier Analysis (WFA) across glaucoma stage. ***Invest Ophthal and Vis. Sci.*** 2005; 46: 2838-2847.
9) **P Gunvant**, DJ O'Leary, M Baskaran, DC Broadway, RJ Watkins, L Vijaya: Evaluation of tonometric correction factors. ***Journal of Glaucoma***, 2005; 14: 337-343.
10) **P Gunvant**, M Baskaran, L Vijaya, BC Hansen, IS Joseph, RJ Watkins, DC Broadway, DJ O'Leary: Comparison of pulsatile ocular blood flow in Indians and Europeans ***Eye*****,** 2005, 19, 1163-1168.
11) CW Lievens, **P Gunvant**, J Newmann, M Gerstner, C Simpson: Effect of Proview self-tonometry on pharmaceutical compliance ***Clinical and Experimental Optometry***, 2006, 89, 381-385.
12) EA Essock, **P Gunvant**, Y Zheng, DF Garway-Heath, A Kotecha, A Spratt: Predicting visual field loss in ocular hypertensive patients using Wavelet-Fourier Analysis of GDx scanning laser polarimetry ***Optometry and Vision Science*****,** 2007; 84: 380-387.
13) **P Gunvant,** CW Lievens, JM Newman III, MD Gerstner, FW Chang, CL Haine: Evaluation of some factors affecting the agreement between the Proview Eye Pressure Monitor and the Goldmann applanation tonometer measurements ***Clinical and Experimental Optometry*** 2007; 90: 290-295.

14) **P Gunvant**, Y Zheng, EA Essock, RS Parikh, S Prabakaran, JG Babu, AU Kumar, G Chandrashekar, R Thomas: Application of shape-based analysis methods to OCT retinal nerve fiber layer data in glaucoma ***Journal of Glaucoma,*** 2007; 16: 543-548.
15) **P Gunvant,** Y Zheng, M Tooth, G Hollo: Atypical retardation pattern: Can performance of classification be improved? ***Optometry and Vision Science****,* 2008; 85: 482-488.
16) **P Gunvant,** L Porsia, RJ Watkins, H Bayliss-Brown, DC Broadway: Relationships between central corneal thickness and optic disc topography in eyes with glaucoma, suspicion of glaucoma or ocular hypertension ***Clinical Ophthalmology*** 2008; 2: 591-599
17) **P Gunvant**, Y Zheng, EA Essock, RS Parikh, S Prabakaran, JG Babu, G Chandrashekar, R Thomas: Comparison of shape-based analysis of retinal nerve fiber layer data obtained from OCT and GDx-VCC ***Journal of Glaucoma,*** 2009: 18(6):464-471.
18) Y Kim, K Iftekharuddin, **P Gunvant**, M Tooth, G Hollo, EA Essock: Efficacy of Fractal analysis in identifying glaucomatous damage. ***SPIE*** **Progress in Biomedical optic and Imaging Medical Imaging** 2010, 76271 G1-10 ISBN 978-0.08194-8028-6.
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22) **P Gunvant**, Y Kim, K Iftekharuddin, EA Essock Identifying glaucoma with multi-fractal features from optical coherence tomography ***SPIE*** **Medical Imaging: Computer Aided Diagnosis** 2011, 7963, 79633 S1-S9
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24) **P Gunvant**, R Darner: Evaluation of corneal thickness measurements obtained using optical coherence tomography and ultrasound technique and determination of specificity in keratoconus screening ***SPIE*** **Medical Imaging: Image Perception, Observer Performance and Technology Assessment** 2011, 7966, 79661 B1-B8
25) **P Gunvant**, A Ablamowicz, S Gollamudi: Predicting the necessity of LASIK enhancement after cataract surgery in patients with multifocal IOL implantation ***Clinical Ophthalmology*** 2011:5 1281–1285
26) A Elsheikh, **P Gunvant**, SW Jones, D Pye, DF Garway-Heath In-Vitro experimental assessment of multi-parameter correction factors for Goldmann Tonometry ***J Glaucoma.*** 2013 Feb;22(2):156-63.
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30) **PG Davey**, C Newman, A Ablamowicz, D Fuller: Diagnostic accuracy of keratoconus using anterior segment optical coherence tomography ***Optometry Reports*** 2013; volume 3:e2, 6-8

31) **PG Davey:** Fabry disease: a survey of visual and ocular symptoms ***Clinical Ophthalmology*** 2014 Aug 19;8:1555-60

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33) J Wang, A Elsheikh, **PG Davey**, W Wang, F Bao, J Mottershead: Corneal topography matching by iterative registration *Proc Inst Mech Eng H*. 2014 Nov; 228(11):1154-67. doi: 10.1177/0954411914559080

34) EA Saidi, **PG Davey**, DJ Cameron The Effect of Zeaxanthin on the Visual Acuity of Zebrafish *PLoS One*. 2015 Aug 12;10(8):e0135211. doi: 10.1371/journal.pone.0135211. eCollection 2015

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39) Wang Y, Lopez D, **Davey PG**, Cameron DJ, Nguyen K, Tran J, Marquez E, Liu Y, Bi X, Baudry M. Calpain-1 and calpain-2 play opposite roles in retinal ganglion cell degeneration induced by retinal ischemia/reperfusion injury. Neurobiol Dis. 2016 2016 Sep;93:121-8

40) **PG Davey**, SD Alvarez, JY Lee Macular Pigment Optical Density: Repeatability, Inter-eye correlation and Effect of ocular dominance *Clinical Ophthalmology* 2016; 10:1671-78

41) S Thurman, **PG Davey**, K McCray, V Paronian, A Seitz Predicting Individual Contrast Sensitivity Functions from Acuity and Letter CS Measurements *Journal of Vision* Dec 1;2016(15):15. doi: 10.1167/16.15.15

42) S Khanal, M Walton, **PG Davey** Evaluation of intraocular pressure estimates obtained using an ICare rebound tonometer *Clinical and experimental Optometry 2017 March 100(2):179-183. doi: 10.1111/cxo.*

43) Kim, K Iftekharuddin, **PG Davey**, T Marta, A Garas, G Hollo, EA Essock Selective Fusion of Structural and Functional Data for Improved Glaucoma Detection Accepted November 2016 *Journal for Modeling in Ophthalmology*

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44) **P Gunvant**: Vitamin-A deficiency and nutritional blindness ***The Indian Optician,*** 22-25 (March-April 1999).

45) **P Gunvant**, I Joseph: Comparison of visual acuity and contrast sensitivity with glasses and various water content hydrogel contact lenses ***Indian Contact lens Journal***. 20:3-6 (July 1999).

46) J Biswas, **P Gunvant**, MP Shanmugam, L Gopal: Solitary astrocytoma mimicking retinoblastoma ***Insight*** Vol. XVII, No. 2 (1999).

47) E Hocking & **P Gunvant:** Computer Vision Syndrome ***Optometry Today*** Vol 34 (1) March 2008: 34-36 ISSN 0048-203X

48) SB Steinman, E Hocking & **P Gunvant:** Electrophysiological Testing of the Eye I : ***Optometry Today*** Septermber 2008 Vol 34(3): 99-102 ISSN 0048-203X

49) SB Steinman & **P Gunvant:** Electrophysiological Testing of the Eye II: ***Optometry Today*** Septermber 2008 Vol 34(3): 119-122 ISSN 0048-203X

50) **P Gunvant** & FW Chang Diabetes: 10th Annual Diabetes Report

Diabetes: New Agents, New Technologies and New Approaches ***Review of Optometry*** Vol.145 (9) September 15th 2008: 64-77

51) D Vyas & **P Gunvant:** Nutritional therapeutics for the eye ***Review of Optometry*** Vol.146 (10) October 15th 2009: 29-34

52) **P Gunvant**, B Jennings, D Vyas: An early look at AREDS 2 Vol 148, April 15th 2011: 59-64

53) **P Gunvant:** Considerations in IOP measurement ***Review of Optometry*** Vol 148, July 15th 2011: 61-69

Books and Book chapters

56) EA Essock, **P Gunvant** and Y Zheng: "Nerve Fiber Analyzer GDx-Progression" in **Optic Nerve Head and Retinal Nerve Fiber Analysis** Edited by Iester M, Garway-Heath D, Lemij H; Savona, Dogma ISBN 88-87434-30-1; Pages 111-113

57) P Spry, CA Johnson, A Anderson, **P Gunvant**, M Fingeret, JL Keltner, M Wall, JS Werner "A Primer for Frequency Doubling Technology (FDT) Perimetry using the Humphrey Matrix" Welch Allyn and Carl Zeiss Meditec

58) **P Gunvant** Editor "Glaucoma: Current Clinical and Research Aspects" ISBN: 978-953-307-263-0; InTech publishers. Published November 2011

http://www.intechopen.com/books/show/title/glaucoma-current-clinical-and-research-aspects

59) EM Kirstein, A Elsheikh and **P Gunvant** "Tonometry – Past, Present and Future" in P Gunvant Editor "Glaucoma: Current Clinical and Research Aspects" ISBN: 978-953-307-263-0; InTech publishers.

Peer reviewed conference presentation:

1) J Biswas, M Subbaram, V Padmanabhan, **P Gunvant**, A George, SK Ganesh: Changing pattern of uveitis in a referral clinic in India. ***58th Annual Conference of All India Ophthalmological Society*** (2000) Chennai, India page 206

2) J Biswas, R Raghavendran, **P Gunvant**, D Arjundas: Eales disease with neurological involvement - Report of three cases. ***Uveitis in the Third Millennium*** 2000, ISBN 0-444-50521-0, Pages 67-69

3) **P Gunvant**, RJ Watkins: What is an acceptable interval for sequential intraocular pressure measurement? ***Optometry and Vision Science*** 2001, 78: 63.
4) **P Gunvant**, M Baskaran, TM Ganeshbabu, L Vijaya, J Uddin, D Broadway, R Watkins: Determination of a 'true' intraocular pressure in open angle glaucoma & ocular hypertension using a mathematical model. ***Invest Ophthal and Vis Sci*** 2002, 43 E-Abstract -1070
5) RJ Watkins, **P Gunvant,** J Uddin, DC Broadway: The influence of central corneal thickness & corneal curvature on intraocular pressure measurement with the Goldmann tonometer & the POBF pneumotonometer. ***Invest Ophthal and Vis Sci*** 2002,43 E-Abstract -3413.
6) **P Gunvant**, IS Joseph, M Baskaran, L Vijaya, DC Broadway, RJ Watkins: Pulsatile ocular blood flow measurements in healthy Asian eyes: Reference values for an Indian population. ***Ophthalmic and Physiol Optics***, 2002, 22: 574-575.
7) **P Gunvant**, DC Broadway, RJ Watkins: Effect of ethnic origin on Pulsatile Ocular Blood Flow. ***Ophthalmic and Physiol Opt***, 2002, 22: 582.
8) **P Gunvant**, DC Broadway, RJ Watkins: Does Optic Disc Topography Vary During Office Hours? ***Ophthalmic and Physiol Optics***, 2002, 22: 581-582.
9) **P Gunvant,** M Baskaran, L Vijaya: Effect of central corneal thickness on contact and non-contact tonometers. ***Optometry and Vision Science***, 2002, 79: 11
10) **P Gunvant**, M Baskaran, L Vijaya: Determination of “True intraocular pressure” in a normal Indian population. ***Optometry and Vision Science***, 2002, 79: 12
11) **P Gunvant**, M Baskaran, L Vijaya, R Watkins, DC Broadway, DJ O’Leary: Visual field loss and corneal parameters in open angle glaucoma and ocular hypertension. ***Invest Ophthal and Vis Sci,*** 2003, 44 E-Abstract - 2174
12) **P Gunvant**, M Baskaran, K Ramani, L Vijaya: Comparison of the Proview tonometer with the goldmann applanation tonometer. ***Optometry and Vision Science,*** 2003, 80: 226
13) **P Gunvant**, P Chen, Y Zheng, D Greenfield, H Bagga, M Bohem, E Essock: Predicting subsequent visual field loss in subjects with disc hemorrhage using RNFL polarimetry. ***Optometry and Vision Science,*** 2003, 80: 229
14) EA Essock, BC Hansen, Y Zheng, AM Haun, **P Gunvant**: “Mach Bands” in the orientation dimension: An illusion due to inhibition of near by orientations: ***Journal of Vision***, 2004, 4(8), 778a, http://journalofvision.org/4/8/778/, doi:10.1167/4.8.778
15) A Haun, **P Gunvant**, M Baskaran, L Vijaya: Central corneal thickness measurement using a pachometer: Mean or lowest values? ***Invest Ophthalmol Vis Sci,*** 2004, 45: E-Abstract 137
16) **P Gunvant**, Y Zheng, A Kotecha, DF Garway-Heath, EA Essock: Predicting Visual Field Loss in Ocular Hypertensive Patients Using Wavelet-Fourier Analysis (WFA) of GDx Scanning Laser Polarimetry. ***Invest Ophthalmol Vis Sci,*** 2004, 45: E-Abstract 5504.
17) **P Gunvant**, Y Zheng, EA Essock: Wavelet-Fourier analysis on retinal nerve fiber layer polarimetry data in patients with early glaucoma. ***Optometry and Vision Science,*** 2004, 81: 5
18) **P Gunvant**, S Demirel, CA Johnson: Reproducibility of visual field abnormalities identified by Frequency Doubling Technology perimetry in patients with early glaucoma. ***Optometry and Vision Science,*** 2004, 81: 6
19) M Baskaran, R George, **P Gunvant**, Sve Ramesh, P Raju, L Vijaya: True intraocular pressure (TIOP) with Orssengo and Pye model compared with Applanation Tonometry in a population based study. ***American Journal of Ophthalmology***, 2005, 139: 48

20) **P Gunvant**, Y Zheng, PG Schlottmann, DF Garway-Heath, EA Essock: Comparison of OCT and VCC RNFL estimates in identifying glaucoma using Wavelet-Fourier Analysis. ***Invest Ophthalmol Vis Sci,*** 2005, 46: E-Abstract 2510

21) **P Gunvant**, Y Zheng, RS Parikh, S Prabakaran, JG Babu, AU Kumar,
G Chandrashekar, R Thomas, EA Essock: Analysis of retinal nerve fiber layer data obtained by Optical Coherence Tomograph using Fourier Based Analysis. ***Invest Ophthalmol Vis Sci,*** 2006 47: E-Abstract 3338

22) EA Essock, **P Gunvant**, Y Zheng, RS Parikh, S Prabakaran, JG Babu, AU Kumar, G Chandrashekar, R Thomas: Comparison of shape-based analysis of retinal nerve fiber layer data obtained from OCT and GDX-VCC. ***Invest Ophthalmol Vis Sci,*** 2006, 47: E-Abstract 3638

23) FW Chang, **P Gunvant**, CW Lievens, JM Newman III, MD Gerstner, CL Haine: Ocular factors affecting measurements of the Proview Eye Pressure Monitor. ***Invest Ophthalmol Vis Sci,*** 2006, 47: E-Abstract 4435

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26) F Jackson, **P Gunvant:** Repeatability and effect of sequential measurement on measurements obtained by Proview Eye Pressure Monitor. ***Optometry and Vision Science,*** 2007; 84: E-abstract 075186

27) MB Taub, FW Chang, **P Gunvant**: Factors affecting measurement of central corneal thickness. ***Optometry and Vision Science,*** 2007; 84: E-abstract 075286

28) JD Duncan, M Khan-Jalal, SB Steinman, **P Gunvant**: Evaluating the calibration of the Heine Lambda 100 retinometer. ***Optometry and Vision Science,*** 2007; 84: E-Abstract 075057

29) **P Gunvant:** Sources of errors in retinal imaging Multimedia poster **SECO 2008**

30) **P Gunvant,** RD Newcomb, EM Kirstein, VE Malinovsky, RJ Maddona, RE Meetz: Correcting Goldmann applanation tonometer measurements may not decrease error in measurement ***Invest Ophthalmol Vis Sci,*** 2008 49: E-Abstract 694

31) F Chang, M Eller, SB Steinman, **P Gunvant:** Accuracy of the Heine Lambda 100 Retinometer ***Invest Ophthalmol Vis Sci,*** 2008; 49: E-Abstract 2538

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33) **P Gunvant,** E Hocking, D Taylor, M Cohler: Agreement of home tonometry with “New age” tonometers ***Optometry and Vision Science,*** 2008; 85: E-Abstract 085180

34) **P Gunvant,** D Taylor, E Hocking, M Cohler: Can the Individualized correction factor improve agreement of home tonometry ***Optometry and Vision Science,*** 2008; 85: E-Abstract 085181

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37) SR Gollamudi, M Cohler, E Hocking, J Linn, **P Gunvant**: Evaluation of the efficacy of interferometer in predicting post-cataract visual outcome. ***American Society of Cataract and Refractive Surgery*** April 2010: Abstract 730921.

38) **P Gunvant**, P Kim, M Tóth, G Holló, E Essock, K Iftekharuddin: Predicting visual field loss in glaucomatous patients using Fast-Fourier analysis (FFA) of GDx-VCC Scanning Laser Polarimetry ***Invest Ophthalmol Vis Sci,*** 2010; 51: E-Abstract 4891

39) **P Gunvant** & M Cohler: Effect of repeated applanation on corneal biomechanical parameters and intraocular pressure measurements ***Optometry and Vision Science,*** 2010; 87: E-Abstract 100947

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42) L Davis, F Chang **P Gunvant** Effect of topical anesthesia on parameters obtained using the ocular response analyzer ***Optometry and Vision Science,*** 2011; 88: E-Abstract 110964

43) **P Gunvant**, A Elsheikh D Garway-Heath Clinical evaluation of multi-parameter correction equations for Goldmann applanation tonometery ***Optometry and Vision Science,*** 2011; 88: E-Abstract 110813

44) **P Gunvant**, M Cohler, E Hocking Evaluation of Intraocular pressure estimates using Icare tonometer ***Optometry and Vision Science,*** 2011; 88: E-Abstract 110851

45) N Hovasapian S Zokaeim **P Davey** Effect of Corneal Parameters on Measurements Obtained Using iCare Rebound Tonometer, Goldmann Applanation Tonometer, and Ocular Response Analyzer ***Invest Ophthalmol Vis Sci,*** 2012; 53: E-Abstract 5032

46) **P Davey**, B Miller, K Dalton Evaluation and comparison IOP estimates obtained with Diaton tonometer with other clinical tonometers ***Invest Ophthalmol Vis Sci,*** 2012; 53: E-Abstract 5077

47) **P Davey**, L Gedge, A Ablamowicz,SR Gollamudi Reproducibility of anterior camber depth measured using Pentacam ***Optometry and Vision Science,*** 2012; 89: E-Abstract 30524

48) **P Davey**, D Josh Cameron Comparison of ocular parameters of Bugeye and Wild-type zebrafish using Optical Coherence Tomography ***Invest Ophthalmol Vis Sci,*** 2013; 54: E-Abstract4874

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51) K Nouri, H Khanjaian, **P Davey** “Repeatability of Ocular Response Analyzer: Best waveform vs. Mean values”, ***Optometry and Vision Science,*** 2013; 90 E-Abstract 135967
52) G Comer, **P Davey**, M Chaglasian, J Cuadros, J Lawrenson, L Alexander, P Dabasia, Q Zhou, DF Garway-Heath “The IVue™ Normative Database Study- Methodology and Distribution of OCT Parameters” ***Optometry and Vision Science,*** 2013; 90 E-Abstract 130192
53) R Shah, S Zaczyk, T Thamsopit, P Vyas, S Alvarez, B Santos, **P Davey** “Macular pigment optical density: Repeatability, inter eye correlation and effect of ocular dominance” ***Optometry and Vision Science,*** 2013; 90 E-Abstract 135209
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55) DJ Cameron, **PG Davey** “Non-invasive ocular assessment in wildtype and disease model zebrafish” ***Invest Ophthalmol Vis Sci,*** 2014; 54: E-Abstract 2107
56) J Greenan, D Egan **PG Davey** “Visual Function Questionnaire in patients with Fabry disease and healthy controls.” *Optometry and Vision Science,* 2014; 91 E-Abstract 145345
57) J Lee, S Alvarez, K Suarez-Berumen and **PG Davey** and Macular Pigment Study Group **“**Association of Macular Pigment Optical Density and Retinal Thickness in various Ethnicities” *Optometry and Vision Science,* 2014; 91 E-Abstract 145325
58) DJ Cameron, E Saidi, **PG Davey** “The effect of A2E and zeaxanthin on visual function: Modelling AMD pathogenesis and treatment in zebrafish.” ***Invest Ophthalmol Vis Sci,*** 2015; 55: E-Abstract 5127
59) J Gray, F Bruce, DJ Cameron, **PG Davey** “Assessment of visual function of Bugeye zebrafish using the optokinetic response.” ***Invest Ophthalmol Vis Sci,*** 2015; 55: E-Abstract 455
60) K McCray, V Paronian, A Seitz and **PG Davey** “Clinical assessment of Landolt C CSF test of the M&S Smart System contrast sensitivity testing device.” ***Invest Ophthalmol Vis Sci,*** 2015; 55: E-Abstract 3902
61) JY Lee, K Suarez-Berumen, K Nouri; E Cook, A Solish, **PG Davey** “Macular pigment optical density in healthy and patients with open angle glaucoma” ***Invest Ophthalmol Vis Sci,*** 2015; 55: E-Abstract 1037
62) L Babakhan, A Parfenova, K Ha, R Maeda, S Thurman, A Seitz, **PG Davey** “Repeatability of measurements obtained using the quick CSF method” ***Invest Ophthalmol Vis Sci,*** 2015; 55: E-Abstract 3901
63) **PG Davey**, R Maeda, A Seitz “Assessment of Evans low contrast sensitivity in measuring log contrast sensitivity.” ***Invest Ophthalmol Vis Sci,*** 2015; 55: E-Abstract 3903
64) M Sharma, **PG Davey**, R Maeda Case series describing Retinal Manifestations along with OCT findings amongst patients of Fabry Disease American Optometric Association annual meeting 2015
65) SM Thurman, A Seitz, **PG Davey** Correcting for Measurement Bias in Contrast Sensitivity Testing *Optometry and Vision Science, 2015; 92 E-Abstract 150066*

66) **PG Davey**, KL McCray, SM Thurman, A Seitz Sensitivity of Various Tests of Contrast Sensitivity to detecting visual impairment ***Optometry and Vision Science****, 2015; 92 E-Abstract 155176*
67) SM Thurman, **PG Davey,** A Seitz Improving Computerized Tests For Measuring Visual Field Deficits In AMD ***Optometry and Vision Science****, 2015; 92 E-Abstract 155313*
68) A Flores , D Quicho, M Kong, C Lemons, K Rowland, D Ringle, K McCray, J Kurtz, **PG Davey** Effect of induced glare on pupil size in ocular healthy adults ***Invest Ophthalmol Vis Sci,*** 2016; 55: E-Abstract 4564
69) **PG Davey**, K McCray Evaluation of contrast sensitivity function in individuals with Fabry disease ***Invest Ophthalmol Vis Sci,*** 2016; 55: E-Abstract 618
70) K Remick-Waltman, **PG Davey** Prevalence of Eye-hand Dominance in Pomona Unified School District in California ***Invest Ophthalmol Vis Sci,*** 2016; 55: E-Abstract 1519
71) C Lemons, M Kong, D Quicho, A Flores, D Ringle, K Rowland, K McCray, J Kurtz, **PG Davey** Repeatability of measurements obtained using an automated pupilometer ***Invest Ophthalmol Vis Sci,*** 2016; 55: E-Abstract 4561
72) PG. Davey, K McCray, J Kurtz, W-C Huang, D Leung, E Ng, CA. Reisman Precision in measuring retinal nerve fiber layer (RNFL) thickness using a Maestro 3-D Optical Coherence Tomography (OCT) ***Optometry and Vision Science****, 2016; 93 E-Abstract*
73) K McCray, J Kurtz, PG Davey, E Ng, D Leung, W-C Huang, CA Reisman Evaluation of repeatability and reproducibility Maestro 3-D OCT in obtaining retinal measurements ***Optometry and Vision Science****, 2016; 93 E-Abstract*
74) K McCray, PG Davey, J Kurtz, D Leung, W-C Huang, E Ng, CA Reisman Evaluation of repeatability and reproducibility Maestro 3-D OCT in obtaining optic-disc related measurements ***Optometry and Vision Science****, 2016; 93 E-Abstract*
75) PG. Davey, R Maeda, N Fahim, J Walter Development and evaluation of a cornea verticillata grading system ***Optometry and Vision Science****, 2016; 93 E-Abstract*

Reviewer for peer reviewed journals

1. Eye Official Journal of Royal College of Ophthalmologists; 2003 to present
2. Journal of Glaucoma; 2004 to present
3. British Journal of Ophthalmology; 2004 to present
4. Ophthalmic and Physiological Optics; 2004 to present
5. Graefe's Archive for Clinical and Experimental Ophthalmology; 2005 to present
6. Indian Journal of Ophthalmology; 2005 to present
7. Optometry and Vision Science; 2005, 2007 to present
8. Current Eye Research; 2006 to present
9. Optometry; 2007 to present
10. Clinical and Experimental Optometry; 2007,2009
11. Clinical Ophthalmology 2008-to present
12. Medical & Biological Engineering & Computing 2008
13. Clinical Optometry 2009-to present
14. Investigative Ophthalmology and Vision Science 2010
15. Journal of Refractive Surgery 2010 to present
16. Science Journal of Clinical Medicine 2012-2014
17. PLOS-One 2016

Ad-hoc Reviewer for granting agencies

1. National Institute for Health Research Scotland
2. The College of Optometrists, United Kingdom
3. Sultan Qaboos University Postgraduate Studies and Research Sultanate of Oman
4. Medical research Council, United Kingdom
5. Veterans Affairs
6. Research Grants Council (RGC) of Hong Kong

Appointed Reviewer for granting agency

Veterans Affairs, Rehabilitation Research and Development 08/08/2016 to 08/31/2020

Invited lectures:

1) "Creutzfeldt-Jacob Disease and its effect on clinical practice" at the **Elite school of Optometry**, India. (2001)
2) "Are we measuring eye pressure accurately enough!" at the **House of Commons, England**, Science, Engineering and Technology across Europe, London (2002).
3) "Pulsatile ocular blood flow - future possibilities" at the **Medical Research Foundation** Chennai, India. (2002)
4) "Intraocular pressure correction factors: Do we have a good one?" at the **Medical Research Foundation** Chennai, India. (2003)
5) "Are we measuring central corneal thickness accurately" at the **Elite school of Optometry**, India (2003)
6) "Effect of corneal parameters on glaucoma related measurements" at **The Eye Foundation** Coimbatore, India (2005)
7) "Evaluation of tonometric correction factors" at the **L.V. Prasad Eye Institute** Hyderabad, India (2005)
8) "Some aspects of glaucoma management-diagnosis and detection of progression", four hours lecture Baypoint Anterior Segment Symposium **Evansville Indiana** - **July 2006**.
9) "Glaucoma management: Life under pressure" three hours lecture **Evansville Indiana** - Baypoint Anterior Segment Symposium **November 2006**
10) "Imaging devices and its use in primary care clinics" at **American Academy of Optometry Anaheim, 2008**, Primary Care Symposium
11) "Advances in ocular imaging and its use in management of glaucoma and retinal conditions" three hour lecture **Hawaii Optometric Association**, November 2008, Maui, Hawaii
12) "Intraocular pressure are you yesterdays headline" one hour lecture. **The Ohio State University** to the class of 2009 **April 2009**
13) "Updates on intraocular pressure measurement" one hour lecture. **The Ohio State University** to the class of 2010 **June 2010**
14) "Measuring intraocular pressure in mass screenings" one hour lecture, **Wills Eye Institute** 2010, Philadelphia, Pennsylvania
15) "Intraocular pressure telemetry : In vivo and in vitro options, one hour lecture **Wills Eye Institute** 2010, Philadelphia, Pennsylvania
16) "Life under pressure- Glaucoma lecture" **Aditya Jyot Eye Institute** Mumbai India December 2011
17) "Towards better Tonometry" **Narayana Nethrayala** Banglore India December 2011

18) "Life under pressure- Glaucoma lecture **Sankara Nethrayala, Medical Research Foundation** Chennai India December 2011
19) "Glaucoma A nerve in Distress" Association Mexicana de Facultades, Escuelas, Colegios y Consejos de Optometria **(AMFECCO), Mexico city** Mexico. February 2012
20) "Glaucoma" 36 hour course **COMOF Mexico City Mexico** June 2012
21) "Compare and contrast Optometry in India and USA" **Aditya Jyot Eye Institute College of Optometr**y Mumbai India July 2012
22) "Ocular Physiology and Glaucoma" **SNDT Womens University** Mumbai, India July 2012
23) "Glaucoma" 24 hour course **COMOF Mexico City** Mexico November 2012
24) "Fabry eye disease-Optometry Making Diagnosis" **Pacific University**, Forest Grove, **Oregon** June 2013
25) "Fabry eye disease-Optometry Making Diagnosis" **Southern Nevada Optometric Association** June 2013
26) "Repeatability of biomechanical properties obtained using Scheimpflug technology", **World Glaucoma Congress**, **Vancover Canada** , July 2013
27) "Congenital glaucoma and ocular pathology in pediatric patient", two hour lecture at COMOF Optometric Extension Program, **Queretaro Mexico September 2013**
28) "Ocular manifestations of Fabrys disease" One hour presentation at The National Fabry Disease Foundation 4th Annual Fabry Family Conference **Greensboro, North Carolina September 2013**
29) "Fabry disease clinical course". UCLA Department of Nephrology and Cedars-Sinai Medical Center, One hour presentation on Ocular manifestations of Fabrys disease, **Los Angles, California October 2013**
30) "Fabry disease Ocular manifestations of a systemic disease" at Southern California **College of Optometry Marshall B Ketchum University** May 19th 2014
31) "Fabry disease Optometry making diagnosis" **San Francisco Optometric Society**, June 24th 2014
32) **"**Fabry disease Optometry making diagnosis" **Western Regional Conference October** 2014
33) Perceptual learning studies and Age related macular degeneration- one hour "**Kaiser Tustin Santa Ana** November 3rd 2015
34) Fabry disease Ocular manifestations of a systemic disease at **Western University of Health Sciences** December 2015
35) Fabry disease Research updates a **Joint program UCLA and Western University** event at Western University of Health Sciences December 2015
36) Fabry disease Optometry making Diagnosis at Southern California **College of Optometry Marshall B Ketchum University** May 18th 2015
37) "Advances in Ocular manifestations of Fabrys disease" Presentation at The National Fabry Disease Foundation 6th Annual Fabry Family Conference **Greensboro, North Carolina September 2015**
38) Improving diagnostic and visual performance in Age related Macular Degeneration Selected as one of twenty two vision Emerging Vision Scientists to present at **National Alliance for Vision and Eye Research Washington DC October 7th 2015**
39) "Advances in Ocular manifestations of Fabrys disease" Presentation at The National 3rd FSIG Expert Fabry Conference San Diego CA **March 2016**

40) Fabry disease Optometry making Diagnosis at Southern California **College of Optometry Marshall B Ketchum University** May 16th 2016

Continuing education lectures:

1) Two hour glaucoma course "Imaging devices- Are we there yet?" 19967-GL, "Progress in Detecting Progression" 19966-GL, **Kentucky Optometric Association Fall Conference**, September 2007, Covington, Kentucky.
2) Two hour glaucoma course "Imaging and glaucoma" 19966-GL & 19967-GL **F& P Educational Seminars Inc. November 2008**, Evansville, Indiana.
3) One hour glaucoma course "Imaging devices- Are we there yet?" 19967-GL, **West Tennessee Optometric Association**, **November 2008**, Memphis, Tennessee.
4) Two hour retina course "Diagnosis and management of systemic diseases with posterior segment manifestations" 24579-PS **F& P Educational Seminars Inc. March 2009**, Evansville, Indiana.
5) Two hour glaucoma course "Diagnosis and management of glaucoma" 19966-GL and 25523-GL **F& P Educational Seminars Inc. August 2009**, Evansville, Indiana.
6) Two hour glaucoma course "Advances in glaucoma management" 19966-GL & 19967-GL **Eye Specialty Group August 2009.** Memphis Tennessee
7) Two hour glaucoma course "Analyzing Glaucoma Progression: The Impact of Advanced Technology" 26375-GL **Southern College of Optometry Fall CE October 2009** Memphis Tennessee
8) Two hour glaucoma course "Advances in glaucoma management: 19966-GL & 19967-GL" **Southern Eye Associates January 2010** Memphis Tennessee
9) Two hour glaucoma course "Visual Fields- Analysis, Advances and Future" 28165-GL two hour course **Eye Specialty Group May 2010** Memphis Tennessee
10) Two hour glaucoma course "Intraocular pressure measurement: The old, the new and the yet to come" 29163-AS **Eye Specialty Group August 2010** Memphis Tennessee
11) Three hour glaucoma course "Glaucoma management" 26375-GL and 25523-GL **Midwest Optometric Society October 2010**;Florence, Indiana
12) Two hour systemic disease course Diabetes: New Agents, New Technologies and New Approaches 23594-SD **F& P Educational Seminars Inc. November 2010**, Evansville, Indiana.
13) Two hour glaucoma course "Visual Fields- Past, present and Future" 28165-GL **Southern Eye Associates March 2011** Memphis Tennessee
14) Two hour posterior segment course "Advances in retinal imaging" 31274-PS **Eye Specialty Group April 2011** Memphis Tennessee
15) Two hour posterior segment course "Advances in retinal imaging" 31274-PS **West Tennessee Optometric Association May 2011** Memphis Tennessee
16) Two hour posterior segment course "Advances in retinal imaging" 31274-PS **Southern Eye Associates June 2011** Memphis Tennessee
17) Four hours glaucoma course at **Western University of Health Sciences July 2011**, Pomona, CA 1) Open Angle Glaucoma and Advanced Technologies 31847-GL one hour lecture 2) Pseudoexfoliation Syndrome and Glaucoma a Dangerous Duo 31848-GL two hour lecture, To Drop or to Chop Options of Medical and Surgical Mangement of Glaucoma one hour lecture

18) Nine hours glaucoma course at **Western University of Health Sciences September 2011**, Pomona, CA 1) Glaucoma back to basics two hour lecture 32406-GL, 2) Ocular imaging- the old, the new and yet to come two hour lecture 32402-GL 3) Toolbox in managing glaucoma: tonometry, pachymetry etc. two hour lecture 32403-GL 4) POAG, the greater part of glaucomas two hour lecture 32404 GL 5) Surgical options in managing glaucoma one hour lecture 32407-GL
19) One hour glaucoma course Progress in detecting progression one hour lecture 32883-GL **Western University of Health Sciences October 2011**, Pomona, CA
20) Six hour glaucoma course at **Western University of Health Sciences November 2011**, Pomona, CA 1) Open Angle Glaucoma and Advanced Technologies 31847-GL one hour lecture 2) Pseudoexfoliation Syndrome and Glaucoma a Dangerous Duo 31848-GL two hour lecture 3) To Drop or to Chop Options of Medical and Surgical Mangement of Glaucoma one hour lecture 4) POAG, the greater part of glaucomas two hour lecture 32404 GL
21) One hour glaucoma course Progress in detecting progression 32883-GL **Western University of Health Sciences November 2011**, Pomona, CA
22) One hour glaucoma course Progress in detecting progression 32883-GL **Western University of Health Sciences January 2012**, Pomona, CA
23) Six hour glaucoma course at **Western University of Health Sciences February 2012**, Pomona, CA 1) Open Angle Glaucoma and Advanced Technologies 31847-GL one hour lecture 2) Pseudoexfoliation Syndrome and Glaucoma a Dangerous Duo 31848-GL two hour lecture 3) To Drop or to Chop Options of Medical and Surgical Mangement of Glaucoma one hour lecture 4) POAG, the greater part of glaucomas two hour lecture 32404 GL
24) Two hour glaucoma course Intraocular pressure The Old, the new and the yet to come 29163-AS **Surgical Eye Care Foundation The 7th Annual Optometric Continuing Education Seminar**. February 2012, Memphis TN
25) Two hour glaucoma course "Grand rounds in glaucoma" **Western University of Health Sciences February 2012**, Pomona, CA
26) Six hour course **"Optowest 2012 California Optometric Association**" Four hours glaucoma and two hours Nutrition and the eye **April 2012**
27) Five hour glaucoma course **San Diego County Optometric Society presented May 20th 2012**
28) Two hour CE lecture Visual Fields Past, Present and Future **Orange County Optometric Society** June 2012
29) Four hours of CE lecture at **Hays-Haine Annual Symposium** at Western University of Health Sciences September 2012
30) One and half hour lecture at New advances in diagnosis and treatment of retinal conditions **Luxottica CE Event** lecture at Western University of Health Sciences November 2102
31) Four Hour CE lecture at **Mississippi Optometric Association Annual CE event** in Jackson MS November 2012
32) Two hour CE event at **Orange County Optometric Society** Fabrys Eye Disease and Ocular Manifestation February 2013
33) Two hour glaucoma CE lecture at **Inland Empire Optometric Association annual CE event.** March 2013

34) Two hour CE lecture glaucoma management at **Asian American Optometric Society** bi annual CE event March 2013
35) One Hour CE lecture at **Western University of Health Sciences**, Progression and glaucoma, April 2013
36) Three hour CE lecture at **Western University of Health Sciences** on Optic disc analysis and Visual field interpretation, April 2013
37) Three hour hands on interactive CE at Western University of Health Sciences, April 2013
38) Two hour CE lecture glaucoma management at **Asian American Optometric Society** bi annual CE event August 2013
39) Two hour CE lecture 1) Ocular manifestation of systemic disease and 2) glaucoma management at **San Fernando Valley Optometric Association** annual CE event September 2013
40) One hour lecture on Ocular manifestations of Fabrys disease San Joaquin Optometric Society, Modesto California October 2013
41) One Hour CE lecture at **Western University of Health Sciences**, Progression and glaucoma, November 2013
42) Two hour CE lecture at **California Optometric Association** Monterey Meeting, Ocular manifestations of Fabrys disease, November 2013
43) Two hour CE event at **Inland Empire Optometric Association,** Update on glaucoma medications and Fabrys disease **March 2014**
44) Four hours of at the **Western University of Health Sciences, Pomona California**, Two hours Medical Management in Glaucoma and Two hours of Surgical Considerations in Glaucoma. **March 2014**
45) Two hour CE at **the Optowest, 2014, California Optometric Association**, Fabrys disease Optometry making diagnosis. **April 2014**
46) One hour lecture at the **Asian American Optometric Association** "Glaucoma Medical Management update" **August 24th 2014**
47) One hour lecture at **San Mateo Optometric Association** "Fabry disease Optometry making diagnosis", **August 26th 2014**
48) One hour lecture at **Western University of Health Sciences** "Progress in detecting progression in glaucoma" September 6th 2014
49) Five hour course at **Sandiego County Optometric Association** on Glaucoma management **September 14th 2014**
50) Four hours CE lectures at **Western University of Health Sciences** on Glaucoma management **October 19th 2014**
51) Two hour CE at **Northwest Congress Portland OR**, on Fabry disease and Perceptual Learning studies in retinal degeneration February 21st and 22nd 2015
52) One hour CE webinar at Western University of Health Sciences Fabry Disease Optometry making Diagnosis **March 4th Webinar 2015.**
53) Five hour course at **Sandiego County Optometric Association** on **March 15th 2015**
54) One hour course at **Asian American Optometric Society** on March 29th 2015 Pseudo exfoliation syndrome

55) Four hour CE lecture in glaucoma management, two hours drugs and glaucoma, two hours imaging and glaucoma **5th Midwest Optometric Society Conference** April 12th 2015

56) Four hour course Comprehensive Glaucoma Update at **Western University of Health Sciences** April 26th 2015

57) One hour CE lecture Fabry disease Ocular Manifestations of a systemic Disease at **Western University of Health Sciences May 14th 2015**

58) One hour CE lecture Fabry disease Ocular Manifestations of a systemic Disease at **Western University of Health Sciences August 13th 2015**

59) Five hour CE lecture; Glaucoma Back to Basics (2 hours) and Tool box in Managing Glaucoma (3 hours) at **Western University of Health Sciences September 13th 2015**

60) Two hour CE lecture; Epidemiology: Clinical trials in Glaucoma at **Western University of Health Sciences September 20th 2015**

61) Two hour CE lecture POAG Greater part of Glaucomas **at Western University of Health Sciences October 4th 2015**

62) Five hour CE lecture; Medical Management of Glaucoma A-Z (3 hours) Surgical Considerations in Glaucoma A-Z (2hours) at **Western University of Health Sciences October 18th 2015**

63) Two hour CE lecture: Decision making in glaucoma: Diagnosis and Management at **Western University of Health Sciences** November 7th 2015

64) Two hour CE lecture: Decision making in glaucoma: Diagnosis and management at **Kaiser Annual CE event**, Huntington Beach. January 30th 2016

65) Four hour CE lecture provided on interactive glaucoma course at **Western University of Health Sciences** Pomona CA February 28th 2016

66) Two hour CE lecture: Decision making in glaucoma: Diagnosis and management at **Inland Empire Annual CE event**, Ontario CA. March 6th 2016

67) Four hour CE lecture provided on Optic disc evaluation down to a science and OCT posterior segment applications **Midwest Optometric Society** Mason Ohio, April 3rd 2016

68) One hour CE lecture, Fabry Disease Ocular manifestations of a systemic disease. **First Sight Conference** Las Vegas NV April 4th 2016

69) Two Hour CE, **Asian American Optometric Society** Decision making and Management in Glaucoma May 15th 2016

70) Two Hour CE, **Western University of Health Scie**nces Decision making and Management in Glaucoma September 11th 2016

71) Two Hour CE, **Tri County Optometric Society** Decision making and Management in Glaucoma October 8th 2016

72) Two Hour CE, **San Fernando Valley Optometric Society** Decision making and Management in Glaucoma October 9th 2016

Research Grants:

Title: The Influence of Corneal Dimensions on Measurement Related To Glaucoma And Ocular Hypertension
Principal Investigator: Pinakin Gunvant BS Optom (100% efforts)
Investigator: Daniel O'Leary PhD, David Broadway MD
Agency: Anglia Polytechnic University, Research.
Type: Bursary for graduate studies at Anglia Polytechnic University
Duration : 1999-2002
Type Restricted grant
Amount £49, 500 (approximate USD 89,100)

Title: Improving Glaucoma Treatment Based on Wavelet-Fourier Analysis of Retinal Nerve Fiber Layer Thickness
Principal Investigator: Edward Essock PhD, Joern Soltau MD, Philip Chen MD
Investigator: Pinakin Gunvant BS Optom, PhD (100% efforts)
Agency: Kentucky Science and Engineering Foundation
Type: KSEF-03-RDE-005 Emerging Technology,
Duration: 2004-2006
Type Restricted grant
Amount $168,096

Title: Factors Affecting Intraocular Pressure Measurement
Principal Investigator: Pinakin Gunvant BS Optom, PhD
Clinical Examiner: Felicia Jackson BS, Erin Hocking BS
Agency: Bausch and Lomb, USA
Type: Unrestricted grant
Duration: 2006-2011
Amount $17,060 (includes 10,000 equipment support)

Title: Collection of Normative and Glaucoma Data Using GDx VCC^{TM} Scanning Laser Polarimetry
Principal Investigator: Pinakin Gunvant BS Optom, PhD
Clinical Examiner: Michael Gerstner OD, Jason Duncan OD, Charles Haine OD,MS
Agency: Carl Zeiss Medictec, USA
Type: Unrestricted grant for collection of normative data/**FDA trial**
Duration: 2006-2007
Amount $28,350

Title: Evaluation of the accuracy and clinical utility of Heine Lamba retinometer
Principal Investigator: Pinakin Gunvant BS Optom, PhD
Co-investigators: Jason Duncan OD, Scott B Steinman OD PhD
Clinical Examiner: Marzuka Khan-Jalal BS, Michael Eller BS, Meredith Cohler BS, Erin Hocking BA
Agency: Heine, USA.
Type: Unrestricted grant

Duration: 2007-2011
Amount $10,000

Title: Improving Glaucoma Treatment: Mathematical Analysis of Retinal Nerve Fiber Layer Thickness
Principal Investigator: Pinakin Gunvant BS Optom, PhD
Agency: ASSISI Foundation, Memphis USA
Type: Restricted grant
Duration: 2009-2011
Amount $79,900

Title: Collection of normative database for iVue OCT
Principal Investigator: Pinakin Gunvant Davey OD, PhD
Agency: Optovue Inc, Fremont, California
Type: Restricted grant/FDA trial
Duration: 2011-2012
Amount **$ 31,000**
http://clinicaltrials.gov/ct2/show/NCT01459731?term=pinakin+davey&rank=1

Title: Age related changes in Macular pigment Optical density
Principal Investigator: Pinakin Gunvant Davey OD, PhD
Agency: Zeavision LLC
Type: Restricted grant
Duration: 2013-2015
Amount **35,000**
Additional intramural grant from Western University of Health Sciences $5,000
Total Amount **$ 40,000**

Title: Collection of normative database for Maestro OCT
Principal Investigator: Pinakin Gunvant Davey OD, PhD
Agency: Topcon, Japan
Type: Restricted grant/ FDA trial
Duration: 2013-2014
Amount **$ 70,550**
http://clinicaltrials.gov/ct2/show/NCT01986478?term=pinakin+davey&rank=2

Title: Integrating Perceptual Learning Approaches into Effective Therapies for Low Vision.
Principal Investigator: Aaron Seitz PhD, Professor UC Riverside
Co-Investigator: Pinakin Gunvant Davey OD, PhD,
Agency: National Institute of Health 1R01EY023582
Total funding: **$1,774,188**
Type: **Subcontract** Restricted grant
Duration: 2013-2016
Co-investigator % effort: **12% (3 years)**

Additional intramural grant from Western University of Health Sciences $5,000
Total funding: $ 105,001.00

Title: MAESTRO2: Topcon 3D OCT-1 Maestro Optic Disc and RNFL Study: Agreement and Repeatability comparison with the iVue
Principal Investigator: Pinakin Gunvant Davey OD, PhD
Agency: Topcon, Japan
Type: Restricted grant/ FDA trial
Duration: 2013-2014
Total funding **$ 27,800**

Title: TOPCON 3D OCT-1 MAESTRO REFERENCE DATABASE STUDY II
Principal Investigator: Pinakin Gunvant Davey OD, PhD
Clinical Investigators: Naida Jackirlic OD, Guru Sharma OD, Munish Sharma OD
Agency: Topcon, Japan
Type: Restricted grant/ FDA trial
Duration: 2015-2016
Total funding **$ 33,600**

Title: TOPCON 3D OCT-1 MAESTRO AGREEMENT AND PRECISION STUDY II
Principal Investigator: Pinakin Gunvant Davey OD, PhD
Clinical Investigators: Kaydee McCray MS and Jennifer Kurtz
Agency: Topcon, Japan
Type: Restricted grant/ FDA trial
Duration: 2015-2016
Total funding **$ 116,900**

In Kind Grants to Southern College of Optometry

Ziemer Ophthalmology Pascal tonometer and supplies **$4,500**
Heidelberg Engineering Upgrade for Heidelberg Retina Tomograph **$16,500**
Carl Zeiss Meditec Frequency Doubling Perimeters two units **$22,000**
Carl Zeiss Meditec Upgrade to GDx and OCT units **$6,500**

In Kind grants to Western University of Health Sciences

Blood flow analyzer Paradigm technologies, Utah USA **$5,000**

IVue OCT Optovue Inc Fremont California USA equipment cost **$46,950.00 four year loan to Western University of Health Sciences.**

Teaching experience:

Lectures:

Anglia Polytechnic University Cambridge, England

1999-2002 Module leader (Instructor in charge), presented lectures, organized and supervised practical lab sessions for Optics of the eye. This course lasted for 1 semester total teaching time 36 hours.

2000-2002 Module leader (Instructor in charge), presented lectures, organized and supervised practical lab sessions for Experimental Methods in Optics & Principle Ophthalmic Lenses. This course lasted for 1 semester; three groups; total teaching time 108 hours.

2000-2002 Presented 6 weeks of lectures in a 12 week course on Microbiology for General and Ocular Pharmacology. This course lasted for 1 semester; total teaching time 18 hours.

2000-2002 Presented 2 weeks of a 12 week lecture course on Clinical Optometry; total teaching time 4 hours.

University of Louisville, Vision Science, Louisville, Kentucky, USA

2003-2006 Presented, 2 hours lecture in a 12 week course for Professor Edward A Essock on a course in vision science for graduate students.

Southern College of Optometry, Memphis, Tennessee, USA

2007 to 2011 Instructor for the Epidemiology part of OPT 323 Public health, Epidemiology and Geriatrics, presented lectures 5 weeks for a 16 week course total teaching time 10 hours.

2008 to 2011 Instructor in charge for the OPT 116, OPT 213 Biochemistry of the Eye the course is a 1.5 credit unit course each for 16 weeks, total teaching time 24 hours

2010-2011 OPT 308Glaucoma co-instructed the course (50%) with Dr. Dennis Matthews, 2 credit unit course for 16 weeks total teaching 16 hours

Glaucoma course for Texas Optometrists

12/2006, 07/2007, 12/2007, 04/2008, 12/2008 Thirteen hours of a thirty hour course lectures covering topics of anatomy and physiology of optic nerve, mechanisms of glaucomatous damage, intraocular pressure, optic disc evaluation with imaging technology, an update on primary open angle glaucoma, epidemiology of glaucoma and ocular hypertension, update on ocular hypertension, normal tension glaucoma, secondary glaucoma and visual fields.

Western University of Health Sciences

2009 to present Instructor in charge for the Ocular physiology OPTM 5032, 2.0 credit unit with 26 lecture hours. Total teaching time 26 hours

2010 to present Instructor in charge for the Ocular Disease II Glaucoma OPTM 5032 3.5 credit unit with 36 lecture hours and 10 lab hours (4 groups). Total teaching time 76 hours

2011 to 2013 Elective course II Common Optometric Procedures. OPTM 8163, 1.0 credit unit 14 lecture hours. Total teaching time 14 hours

Laboratory and clinic based modules:

Anglia Polytechnic University Cambridge, England

1999-2000 Contact Lenses: I co-supervised the 12 lab sessions; total lab time 36 hours.

1999-2000 Further Clinical Optometry: I co-supervised 12 lab sessions; total lab time 48 hours.

1999-2002 Clinical Optometry: I co-supervised the 12 lab sessions; total lab time 36 hours

Southern College of Optometry, Memphis, Tennessee, USA

2006 Lab instructor for OPT 230 (Patient Management) total lab time 96 hours

2006 to 2011 Teaching clinical technology in Advanced Care Ocular Disease at the Eye Centre.

2007 to 2011 Co-instructor OPT 328 a seminar based course; presented lectures; 8 weeks for a 16 week course and organized and supervised practical lab sessions. This course lasted for 1 semester, total teaching time 10 hours

Thesis supervision: Co-supervised the following thesis

2001

1) Ms. Leena Panchal: "Vertical cup-to-disc ratio - Agreement between direct ophthalmoscopic estimation, fundus biomicroscopic estimation and scanning laser ophthalmoscopic measurement"

2) Mr. Javed Akhtar: "Effect of pupil dilation on measurements obtained using scanning laser ophthalmoscope"

2002

3) Ms. Sarah Burdis: "Effect of repeated tonometry on the pulsatile ocular blood flow of consensual eye."

06/2007 to 06/2009 Co-Supervisor and committee member PhD thesis
Donald Ladwig (University of Louisville)
"Retinal nerve fiber layer and visual function" student terminated with a Masters degree.

06/2009 to 06/2011 Co-supervisor and committee member **PhD thesis**
Paul Young June Kim (University of Memphis)

"Early Identification and Prediction of Risk for Glaucomatous Progression Using Fractal Analysis of Pseudo 2D Retinal Nerve Fiber Layer (RNFL) Data"

Masters of Science in Medical Sciences research projects
2012-2013

Kiana Nouri- Repeatability of Ocular Response Analyzer: Best waveform vs. Mean values

Bridgett Santos - Repeatability of Macular Pigment Optical Density (MPOD)

Duck Lee Young- Repeatability of Ocular Corvis ST in Intraocular Pressure Measurements

Jerry Lee- Repeatability of biomechanical parameters obtained using the Corvis

Silverio Alvarez- Inter-eye correlation of Macular pigment optical density in healthy eyes

2013-2014

Jessica Lee- Age related variations in macular pigment optical density

Eric Saidi- In-Vivo Intraocular pressure measurements in zebrafish

2014-2015

Violeta Paronian Comparison of various clinical contrast sensitivity testing techniques

Kaydee McCray Evaluation of contrast sensitivity in healthy versus disease eyes

2015-2016

Cherryl Lemons Repeatability of automated pupillometer and effect of glare on pupil size

Arlene Flores Evaluation of CSV 1000 in glare testing

Danica Quicho Evaluating visual function with and without induced glare using the Sine CSF test of the M&S Technologies® Smart System

2016-2017

My Diep Effect of glare on contrast sensitivity function

Claire Healy Comparison of contrast sensitivity in photopic and mesopic conditions

Edward Ng Contrast sensitivity function under mesopic conditions using CSV-1000E to establish normative database.

<u>Service to college and university:</u>

Open days: 1999-2002

I was involved in the "Open Days" of the optometry department at Anglia Polytechnic University. Graduate students were involved in the demonstration of facilities and answered the questions which were asked by the prospective students.

Psychology Day 2003 and 2004

I was involved in the organizing of the Psychology Day; this is an open day which is conducted by the Department of Psychological and Brain Sciences at University of Louisville. This event marks the annual celebration and display of department facilities and research.

Research at Louisville 2004

I was one of the judges for the Research at Louisville where I was involved in judging the research posters presented by the Graduate students of the science and bio-medical departments.

Annual Louisville Regional Science Fair 2005

I was one of the judges at the Louisville Regional Science Fair in the Microbiology category, where I was involved in judging the research posters presented by the students.

American Academy of Optometry Annual Conference Tampa Florida 2004. A volunteer in the Academy's Membership Booth at Academy 2004 Tampa. To provide and be the primary source of information for the individuals interested in becoming Fellow of American Academy of Optometry (FAAO).

Mock board Part-3 for fourth year interns

1. Part-3 mock board Section-1 03/2006
2. Part-3 mock board Section-2 03/2007

Student Advisor Program

2006 to 2010 Student advisor for first year students. My duties are to mentor and general guidance when they are students at Southern College of Optometry.

Committees

2006 to 2011 Research and IRB Committee at Southern College of Optometry

01/2008 to 09/2008 Chairman, IRB Committee, Southern College of Optometry

2012 to present Appointed as a member of PhD feasibility planning Committee

- Submitted potential course document for the program
- Organized an Memorandum of Understanding with industry in support of the program
- Submitted a proposal for extramural funding to start the PhD program
- Worked on a NIH submission for a centre grant to develop graduate program.

2016 Appointed Chair of University **PhD feasibility planning Committee**

2013-2014 Appointed by Dr. Philip Pumerantz to be part of Research Working Group, Strategic Planning Phase II**;** working group chair Dr. Steven Henriksen

2013 –to present Elected as a member of **Promotion and Tenure Committee**, College of Optometry, Western University of Health Sciences

2016 Chair of the **Promotion and Tenure Committee**

2013- to present Elected as a member of **Academic Senate** as a representative of College of Optometry, Western University of Health Sciences

2016 Chair of Advisory Board for Center of Clinical and Translational Research

Student retention Webinars

Provided webinars to Doctor of Optometry batch of 2017

1) Insight into Optometry: Ocular Physiology June 25th 2013
2) Glaucoma: “The silent thief” July 23rd 2013

Service to profession:

2002 to present Member of Diseases Section at American Academy of Optometry

2007 to 2009 Continuing Education Quality Assurance Committee at American Academy of Optometry

2007 and 2008 Moderator

Invited and served as a moderator of Glaucoma Section American Academy of Optometry annual conference

2009 and 2010 Reviewer

Invited and served as a reviewer for the of glaucoma scientific papers section at the American Academy of Optometry annual conference

2008 to 2011 President, American Academy of Optometry Tennessee Chapter

2011 to Present Mentor for the Developing Country Eye Researcher Fellows at Association for Research in Vision and Ophthalmology (ARVO)

2012- to present Appointed member of Education and Clinical Practices Committee, California Optometric Association

2013, 2014, 2015, and 2016 invited to serve as an "Expert" in the popular training session for "Members-in-training- pre-doctoral and post doctoral fellows and residents" at Association for Research in Vision and Ophthalmology (ARVO) Annual meeting luncheon event "Pizza with an Expert".

2013 **Moderator** at Association for Research in Vision and Ophthalmology, **Retina and AMD symposium**

2013-2014 Elected Chair of continuing education at Inland Empire Optometric Association

2013-to present Appointed member of Membership Committee of California Optometric Association

2015-2016 Treasurer and Chair of Education Committee Inland Empire Optometric Association

2016 -2017 President Elect Inland Empire Optometric

Service to community:

Vision Screening

1998 Participated in vision screening for school children; the event was funded by the Rotary Club of Chennai, India.

1999 Leader of the team; vision screening for senior citizens, event was funded and organized by Kaingra (a social organization).

2004 Glaucoma Screenings

A total of 249 individuals were screened for glaucoma, the tests included frequency doubling perimetry

1. Salud Familiar Health Fair and Conference.
   Primary focus was on Hispanic community. Held at the University of Portland, Portland, Oregon.
2. Health event at Pioneer Court House Square. Portland, Oregon.

2006-2007
Supervised students and represented Southern College of Optometry for a vision screening program conducted on
1. 04/22/2006 by the Whitehaven Community Centre, Memphis, Tennessee.
2. 04/29/2006 by the Parkway Garden United Presbyterian Church, Memphis, Tennessee.
3. 06/03/2006 by the Sisterhood Showcase convention, Memphis, Tennessee.
4. 06/10/2006 by the Outreach Rising Sun, Memphis, Tennessee.
5. 05/20/2007 by the Tennessee Optometric Association in collaboration with Lions International for the Special Olympics at Nashville, Tennessee.

2007-2008
Supervised students and represented Southern College of Optometry for a vision screening program conducted on
1. 06/02/2007 by the Raleigh Presbyterian Church, Memphis, Tennessee
2. 06/30/2007 by the Breath of Life SDA Church, Memphis, Tennessee
3. 04/06/2008 by the BAPS Hindu Mandir (Temple), Memphis, Tennessee

2009-2010
Supervised students and represented Southern College of Optometry for a vision screening program conducted on
1. 05/08/2010 by the BAPS Hindu Mandir (Temple), Memphis, Tennessee

2012
Supervised students and represented Western University of Health Sciences, College of Optometry for a vision screening program conducted

1) BAPS Hindu Temple at Chino Hills Eye screening as a part of multispecialty health screening event September 16th 2012
2) HMPS Inc. ANNUAL HEALTH FAIR Co-Sponsored by Tarsadia Foundation & Supported by Anekant Community Center Eye screening as a part of multispecialty health screening event October 7th 2012
3) California Zoroastrian Center ANNUAL HEALTH FAIR Eye screening as a part of multispecialty health screening event October 21st 2012
4) California Lions Friends in Sight and Sai Baba Organization Eye screening Event December 8th 2012
5) Lecture at BAPS Temple Chino Hills, Common Eye Problems, This lecture was delivered to about 1000 people as process to create awareness about ocular problems and to introduce the Western University of Health Sciences Eye Care Center to the neighboring community.
    - As a direct influence of this and ongoing communication we get constant referrals of patients from medical internists
    - I also won the prize for the Faculty that generated maximum new referrals, in a friendly competition conducted by the Eye Care Center at Western University of Health Sciences.

6) Lecture and eye screening to Ontario Centre Senior and Adult Community on glaucoma. October 11th 2012
7) Wrote articles for Inland Valley News, a printed publication that has wide range of circulation. Articles submitted on topic “Protect your eyes you cannot replace them” and “Glaucoma: The Silent thief”
8) BAPS Hindu Temple at Chino Hills Eye screening as a part of multispecialty health screening event September 2015
9) BAPS Hindu Temple at Chino Hills Eye screening as a part of multispecialty health screening event September 18th 2016

References
Available upon request