



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



Continuing Education Course  
 Approval Checklist

Title:

Provider Name:

Completed Application

Open to all Optometrists?  Yes  No

Maintain Record Agreement?  Yes  No

Correct Application Fee

Detailed Course Summary

Detailed Course Outline

PowerPoint and/or other Presentation Materials **Explanation letter attached**

Advertising (optional)

CV for EACH Course Instructor

License Verification for Each Course Instructor

Disciplinary History?  Yes  No



Course Title	Date(s) of Course	Instructor(s)/Lecturer(s)	CE Hours Requested	FOR BOARD USE		
				Approved	Disapproved	ID #
Toric IOL's	01/18/2017	KEITH LIANG, MD	2			
Corneal Cross-Linking	03/15/2017	KEITH LIANG, MD	2			
Review of Eye Drops: Prostaglandins	05/17/2017	KEITH LIANG, MD	2			
Aspheric vs. Non-Aspheric: Night Time Vision	07/19/2017	KEITH LIANG, MD	2			
Tecnis, Symphony & Crystalens AO	09/13/2017	KEITH LIANG, MD	2			
Wavefront Technology: Topography Guided Laser	11/15/2017	KEITH LIANG, MD	2			
Treatments for Macular Degeneration	05/07/2017	KEITH LIANG, MD	2			
Glaucoma: Decisions & Choices	05/07/2017	KEITH LIANG, MD	2			
Ocular Hypertension	11/12/2017	KEITH LIANG, MD	2			
Optical Coherence Tomography of Macula & Optic	11/12/2017	KEITH LIANG, MD	2			
COMMITTEE COMMENTS:						

February 23, 2017

**State Board of Optometry  
2450 Del Paso Road, Suite 105  
Sacramento, CA 95834**

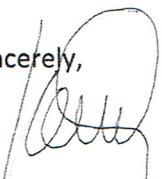
Dear Boards of Optometry,

Thank you for considering my request for CE approval. I was recently informed by Kristina Eklund that I need to provide a letter to explain why I am not able to provide presentation materials for the scheduled events in 2017. I feel that providing current information to our network of optometrist is very important. I gather presentation information from a variety of information sources- mainly current ophthalmic studies (articles) and ophthalmic meetings that I attend periodically through the year. The Power Point presentations are created from information gathered from ASCRS held in May and AAO conferences held in November; this ensures that the information provided is not only current, but the newest technology that we can offer in the United States.

I have prided myself in the ability to deliver quality information to my optometric network and I have been working with the Board of Optometry for many years to provide CE's. I ask that you strongly consider issuing Continuing Education credits for 2017 as I have many Optometrists who depend on what is offered at my office.

Thank you so much for your consideration.

Sincerely,



*Keith Liang, MD*  
Ophthalmologist



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## COURSE SUBJECT MATTER

**Toric IOL's**      **Instructor:** Keith Liang, MD

**Event Date:** January 18, 2017

Toric IOL Staar and Alcon have added a new dimension to cataract surgery to correct Astigmatism. It has allowed for greater post operative satisfaction from patients. Review the preoperative criteria required for successful implantation of the lens. The surgical steps required for successful implantation of the lens in the correct axis.

**Corneal Cross-Linking**      **Instructor:** Keith Liang, MD

**Event Date:** March 15, 2017

Corneal Cross-Linking (CXL) has been used to treat issues like keratoconus and corneal ectasia after LASIK surgery since 1997. *Keratoconus* is a vision disorder that occurs when the normally round cornea (the front part of the eye) becomes thin and irregular (cone) shaped. This abnormal shape prevents the light entering the eye from being focused correctly on the retina and causes distortion of vision. The goal is to educate the physical signs to manage these patients pre-operatively and post operatively.

**Review of Eye Drops: Prostaglandins**      **Instructor:** Keith Liang, MD

**Event Date:** May 17, 2017

Travatan, Lumigan and Xalatan drops are the family of eye drops that are the primary treatment for glaucoma. The difference will be reviewed and indications for use in the ocular hypertensive and glaucoma patients will be discussed.

**Aspheric versus Non-Aspheric: Night-time Vision**      **Instructor:** Keith Liang, MD

**Event Date:** July 19, 2017

The wavefront modified IOL that affect spherical aberration will be reviewed. The latest medical discussion on the lenses affect on improved night time vision will be discussed. Wavefront data both pre and post operatively will be reviewed.

**ResTor , Symphony & Crystalens**      **Instructor:** Keith Liang, MD

**Event Date:** September 13, 2017

Premium IOL is gaining greater acceptance in the cataract population. How does an optometrist counsel his or her patients on these latest advances in IOL surgery. The ideal candidate for each type of lens will be reviewed. How to manage post operative expectations will be a key factor the success of these lenses.

**Wavefront Technology: Topography Guided Laser:**      **Instructor:** Keith Liang, MD

**Event Date:** November 15, 2017

Nidek laser from Japan has the obly FDA approved topography guided excimer ablation in the United States. The CATZ software and Final Fit program will be reviewed on problematic patient discussions.

## OUTLINE

### Aspheric vs. Spherical: Keith Liang, MD

1. Traditional intraocular lenses have a spherical optical design, meaning the front surface is uniformly curved from the center of the lens to its periphery. Though a spherical IOL is relatively easy to manufacture, this design does not mimic the shape of the natural lens inside the eye, which varies in curvature from center to periphery.
2. Aspherical lenses are lenses with complex curved surfaces, such as where the radius of curvature changes according to distance from the optical axis. Spherical lenses are subject to aberration and therefore cannot concentrate all the light into one point.
3. Aspheric curves are used in several different ways but for similar reasons. They control three key undesirable elements in a lens: Spherical aberration, distortion, and marginal astigmatism.
  - a. Spherical Aberration
    - i. The curved surface of a lens is most often spherical (this shape is easy to make). When light refracts through a lens with a spherical surface, the rays that pass through the outer diameters of the lens will focus at a different point from rays that pass through the center.
  - b. Distortion
    - i. Distortion refers to deformation of an image. There are two kinds of distortion, either of which may be present in a lens: barrel distortion, in which magnification decreases with distance from the axis, and pincushion distortion, in which magnification increases with distance from the axis.
  - c. Marginal Astigmatism
    - i. An undesirable sphere and cylinder power gain when looking away from the optical center, marginal astigmatism can cause an astigmatic focus of light at the lens edge. Aspheric design reduces marginal astigmatism by reducing power gain at the periphery.
4. A spherical intraocular lens can induce minor optical imperfections called higher-order aberrations, which can affect quality of vision, particularly in low-light conditions such as driving at night.
  - a. Premium aspheric IOLs, on the other hand, match more closely the shape and optical quality of the eye's natural lens, and thereby can provide sharper vision — especially in low light conditions and for people with large pupils.
  - b. Popular aspheric IOLs that are FDA-approved and available in the U.S. include:
    - i. Tecnis Aspheric by Abbott Medical Optics
    - ii. AcrySof IQ by Alcon
    - iii. SofPort AO by Bausch + Lomb
    - iv. Softec HD by Lenstec

**KEITH LIANG M.D.**

**CORNEAL, CATARACT, GLAUCOMA AND REFRACTIVE SURGEON**

*3160 J STREET*

*SACRAMENTO, CA 95816-4403*

*(916) 446-2020*

*[kliang@liangvision.com](mailto:kliang@liangvision.com)*

**PRIVATE PRACTICE**

**CENTER FOR SIGHT CLINIC AND  
LASER CENTER 1995 – Present**

**SACRAMENTO EYE SURGICENTER**

Medical Director 1999 – Present

3150 J Street

Sacramento, CA 95816

**EDUCATION**

*CHIEF RESIDENCY*

*LSU – Lions Eye Center 1993 – 1994*

Cornea and Refractive Surgery

New Orleans, Louisiana

*RESIDENCY*

*Louisiana State Univ. Medical Center*

1990 – 1994

New Orleans, Louisiana

*INTENRSHIP*

*University of Southern California-*

*Los Angeles County Medical Center*

1989 – 1990

Los Angeles, California

*MEDICAL SCHOOL*

*University of Southern California-*

*Keck School of Medicine*

1985 – 1989

Los Angeles, California

*UNDERGRADUATE*

*University of California at Los Angeles*

1982 – 1985

Los Angeles, California

## MEMBERSHIPS

American Academy of Ophthalmology  
American Board of Ophthalmology  
American Society of Cataract and Refractive Surgery  
International Society of Refractive Surgery  
New Orleans Academy of Ophthalmology  
Association for Research in Vision and Ophthalmology

## PAPERS

“Introduction to the 13<sup>th</sup> NIDEK International Refractive Symposium: Cyberspace”  
Journal of Refractive Surgery, Volume 25, January (Suppl) 2009

“Vision Quest” – By Reed Parsell/photography by 521Productions.com  
Sacramento Magazine, 174, 176–177, September 2007

“New NSAID Speeds Resolution of Corneal Ulcer”  
Ophthalmology Management 49–50, January 2006

“Acrysof Restor IOL Presbyopic lens removal and exchange”  
Cataract & Refractive Surgery Today Volume 6, No. 4: 66–69, April 2006

“Wavefront–Adjusted Treatments on the Nidek EC–5000”  
Cataract & Refractive Surgery Today 82–84, August 2004

“Cohesive viscoelastic offers predictable protection – Surgeon depends on high-viscosity agent for 95% of cataract cases” – By Lynda Charters, Reviewed by Keith Liang, M.D.  
Ophthalmology Times 34, February 15, 2003

“A Comparison of the Nidek EC-5000, Visx S2 and Summit Apex Lasers”  
Review of Ophthalmology Part 3 of 3: 6–7, July 2001

“Fungal Keratitis from Nylon Lawn Trimmers”  
American Journal of Ophthalmology 114:437–440, October 1992

“Browns Superior Oblique Tendon syndrome After Baerveldt Implant”  
Archives of Ophthalmology 110:1368, 1992

## CLINICAL TRIALS

CRS – NIDEK Clinical treatment of Astigmatism IDE 1999 – 2000  
CLARITY Holos-On going study to develop intraoperative aberrometry for Cataract Surgery.



ACOES Cross linking investigation- evaluate efficacy of cornea collagen crosslinking in Keratoconus and Ectasia eyes

CRS/ISRS – LASIK Clinical investigation: Evaluate the efficacy of LASIK and submit data to FDA Device Committee 1996 – 1998

CRS/ISRS – VISX Clinical treatment of Astigmatism and high myopia IDE 1996 – 1997

NIDEK PRK Study Site – worked under supervision of Marguerite McDonald M.D. in New Orleans, LA – 1994

AUTONOMOUS – Preliminary monkey treatments at Tulane vivarium under the direction of Marguerite McDonald M.D. – 1994

## **PRESENTATIONS**

**AAO** Intraoperative Aberrometry –HOLOS for refractive cataract surgery. IOL Predictor 2016

**ASCRS** Intraoperative Aberrometry –HOLOS for refractive cataract surgery 2015

**ASCRS- Topography guided laser-** How to use the CATZ and OATZ software to achieve optimal results- NIDEK 2014

**AAO** – Laser assisted Cataract Surgery- Femto LRI incisions with Lensar laser 2013

**OPTOMETRIC** – Semi-annual half-day lectures to local Optometrists regarding various topics in Ophthalmology – 1995 – 2009 – Sacramento, CA

**OPTOMETRIC** – Bi-monthly dinner lectures to local Optometrists regarding various topics in Ophthalmology – 1995 – 2009 – Sacramento, CA

**CRS** – How to remove a multifocal lens – December, 2007 – Las Vegas, NV

**ASCRS** – Akahoshi technique with the millennium system. Bausch & Lomb – 2005 Washington, D.C.

**ASCRS** – Nidek wavefront adjusted myopic treatments utilizing 6.5/7.5 zones compared to non-wavefront treatments – 2004 San Diego, CA

**ASCRS** – Combination Akahoshi pre-chop and flip technique for cataract surgery – 2001

**ASCRS** – LASIK Video Grand Rounds: Complications and Management-panel member – 1999 – 2001

**AAO** – LASIK Video Grand Rounds: Complications and Management-panel member – 1999 – 2001

**ASCRS** – Comparison of NIDEK, VISX and Summit Lasers for the LASIK treatment of myopic astigmatism – 2000

**ASCRS** – Initial clinical pearls for the insertion of Starr Posterior ICL – a beginning surgeon’s experience – 2000

**ASCRS** – Results of Mobile VISX Laser in the LASIK treatment of myopic astigmatism – 1999

**FDA DEVICE PANEL** – Gaithersburg, Maryland - presented LASIK data for FDA approval of LASIK procedure – 1998

**LSU- New Orleans Academy-** Pigmentary Dispersion Glaucoma- Laser Peripheral Iridectomy- clinical trial of P.I. in myopic patients with posterior bowing of iris plane 1992

**ARVO-** Fluorescein angiographic Histopathological Correlation of Dihematoporphyrin/Argon Laser Treated Vasculature & Subretina Neovascularization 1988

## **CERTIFICATION**

**2016-** ALLEGRETTO WAVE EYE-Q 400HZ

**2015** – HOLOS ABERROMETRY FOR CATARACT SURGERY

**2014-** ZIEMER S FEMTO LDV CRYSTALLINE-BLADE FREE

**2013** – Glaucoma- ISTENT IMPLANT

**2012** – LENSAR FEMTOSECOND LASER

**2008** – Glaucoma – TRABECUTOME SURGERY

**2007** – STAAR INTRAOCULAR CONTACT LENS

**2007** – MULTIFOCAL REZOOM LENS

**2007** – ASTIGMATISM LENS TORIC

**2006** – MULTIFOCAL RESTORE LENS

**2006** – VERISYSE INTRAOCULAR CONTACT LENS

**2005** – Glaucoma – SELECTIVE LASER TRABECULOPLASY

**2004** – ALLEGRETTO EXCIMER LASER SYSTEM

**2004** – CRYSTALENS

**2000** – LADAR VISION EXCIMER LASER SYSTEM  
**1999** – NIDEK EXCIMER LASER SYSTEM  
**1996** – VISX EXCIMER LASER SYSTEM  
**1995** – SUMMIT EXCIMER LASER SYSTEM