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: 2017 Spring Education Symposium - Understanding New Extended Depth of Focus IOLs

Provider Name: Marshall B Ketchum University c/o Dr. John Lee

☑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

AAOS

ASIAN AMERICAN OPTOMETRIC SOCIETY
PRESENTS

2017 Spring Education Symposium

Sheraton Cerritos Hotel - 12725 Center Ct Dr S, Cerritos, CA 90703
Sunday, April 2, 2017

5 HOURS OF CONTINUING EDUCATION

Agenda:

8:00am – 8:10am	**Welcome** Andy Kongsakul, O.D. President, AAOS
8:10am – 9:00am (1 Hour CE)	**10 LASIK Myth Busters** **SMILE – Small Incision Lenticule Extraction** Tom Tooma, MD, NVision Eye Centers
9:00am – 9:20am *(20 min)*	*Break*
9:20am – 11:00am (2 Hours CE)	**Topography Guided LASIK** Franklin Lusby, MD, NVision Eye Centers **Choosing Premium Lenses in Highly Aberrated Corneas** **Understanding New Extended Depth of Focus IOLs** Sheri Rowen, MD, NVision Eye Centers
11:00pm – 11:20pm *(20 min)*	*Break*
11:20am – 12:10pm (1 Hour CE)	**An Introduction to Fundus Auto-Fluorescence (FAF)** Raman Bhakhri, OD, Marshall B Ketchum University
12:10pm – 1:00pm (1 Hour CE)	**Updates on Hydroxychloroquine Retinpathy** Tina Zheng, OD, Marshall B Ketchum University

CALIFORNIA STATE BOARD OF OPTOMETRY
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CONTINUING EDUCATION COURSE APPROVAL APPLICATION

$50 Mandatory Fee

Cashiering and Board Use Only

Receipt #	Payor ID	Beneficiary ID	Amount
1-7916	541485	3281491	50

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

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

Please type or print clearly.

Course Title	**Course Presentation Date**
Understanding New Extended Depth of Focus	10:35am - 11:05am 04/02/2017

Course Provider Contact Information

Provider Name

John (First) Lee (Last) Howard (Middle)

Provider Mailing Address

Street 2575 Yorba Linda Blvd **City** Fullerton **State** CA **Zip** 92831

Provider Email Address jlee@ketchum.edu

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

Sheri (First) Rowen (Last) (Middle)

License Number 131504	**License Type** Physician and Surgeon
Phone Number (949) 274-4652	**Email Address** sheri.rowen@nvisioncenters.c

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 2/14/2017 *Date*

SUMMARY – Understanding New Extended Depth of Focus IOLs

Sheri Rowen, MD

With the sheer number of cataract surgeries done daily across the world and new technologies that are changing the types of intraocular lenses offered to patients, it is important to stay atop a field that was stable but now are seeing tremendous changes. Multifocal / extended depth of focus IOLs are getting more popular every day for patients and companies are constantly producing newer and better lenses. Because of the rapid change, it is important to stay on top of the information regarding these IOLs by reviewing the newest research and clinical outcomes of these new lens modalities. By educating the optometrist about these new technologies, the patient will make a better educated decision with their surgeon when they need cataract surgery.

NVISION
EYE CENTERS

Presenter – SHERI ROWEN MD, FACS

Course Title – Understanding New Extended Depth of Focus IOLs

Course Outline –

Multifocal (MTF)

Accommodative (ACM)

Extended Depth of Focus (EDF)

Advantages of MTF

Easy to use and place

Provides good near vision

Disadvantages of MTF
Split light (30-40%/zone)

Loss of contrast sensitivity

Dysphotopsias

No Toric option

Advantages of ACM

Seamless distance to intermediate

Aspheric MF optic hinged haptic

Good Contrast (100% light)

Low dysphotopsias

Toric option

Disadvantages of ACM

Requires capsular bag hinge coverage (5mmCR)

Requires posterior vaulted haptic configuration

Subject to capsular bag forces postoperatively

Provides inconsistent near

Advantages of EDF

Easy to use and place

Provides good intermediate

Does provide some near

Better contrast w/ fewer dysphotopsias than MTF
(80% light)

Toric option
Disadvantages of EDF?

Advantages of the Symfony
are all in the design

Disadvantages of the Symfony
are all in the design

Contrast sensitivity may decrease and spherical aberrations increase significantly in scotopic conditions

Disadvantages of EDF

Intermediate to near is pupil, light, target refraction dependant

Dysphotopsias and contrast are worse than MF but better than MTF

Non dominate eye
should be operated on first

Target Refraction

NVISION
EYE CENTERS

Target plano ou or – 0.25 post-op

Mini mono ≤ –0.50 non dominate

Avoid > - .50

Post-Surgical Refractions
Auto refractors do not
work well with Symfony

Manifest refraction – push plus

Avoid hyperopia

Symfony is a
game changer

Ideal candidates should have no significant disorder with reduced contrast sensitivity or corneal spherical aberrations or large scotopic pupils

Go to Presbyopic Lens

ACM (Crystalens/ Trulign)

EDF (Symfony/Symfony Toric)
Special Interest Lens
Multifocals

Toric Lens

Comparing New Presbyopic IOLs

SHERI ROWEN MD, FACS
NVISION EYE CENTERS

Presbyopic IOLs

Multifocal (MTF)

Accommodative (ACM)

Extended Depth of Focus (EDF)

Advantages of MTF

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Provides good near vision

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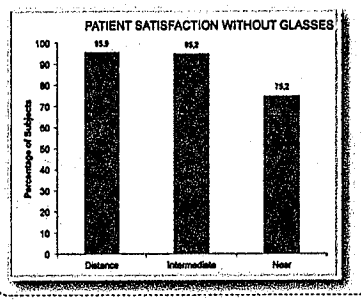
Does provide some near

Better contrast w/ fewer dysphotopsias than MTF (80% light)

Toric option

Disadvantages of EDF?

Figure 2 SPECTACLE INDEPENDENCE

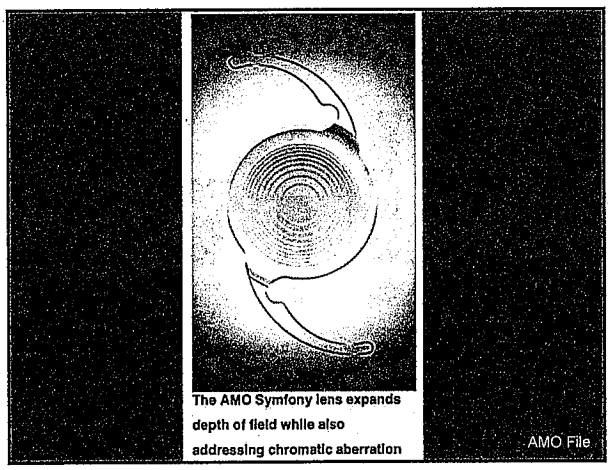


Good to completely satisfaction without glasses:

94% overall vision
97% during daytime
84% during nighttime

AMO File

Advantages of the Symfony are all in the design

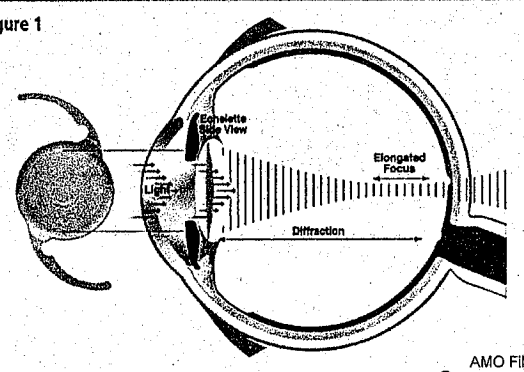


The AMO Symfony lens expands depth of field while also addressing chromatic aberration

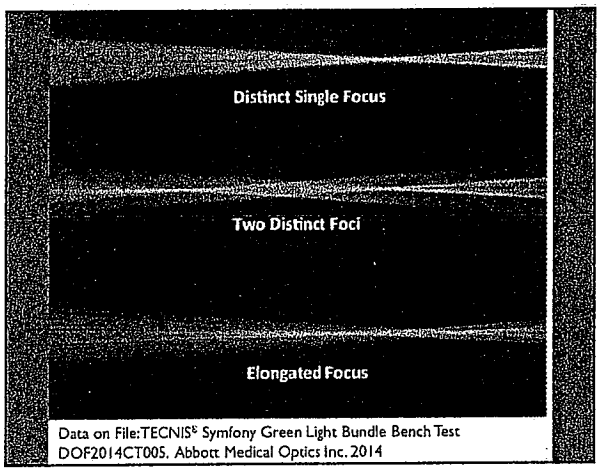
AMO File

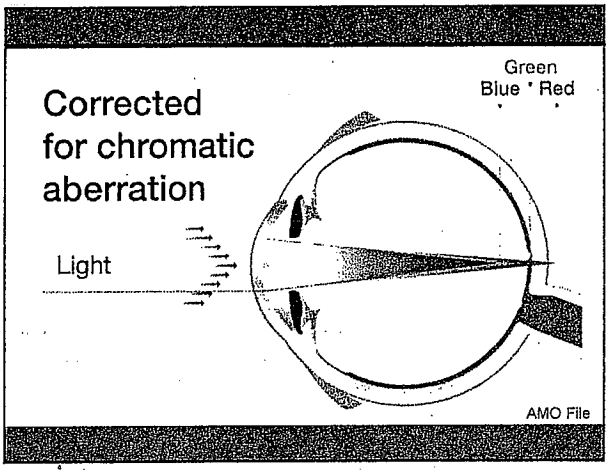
How the echelette design works

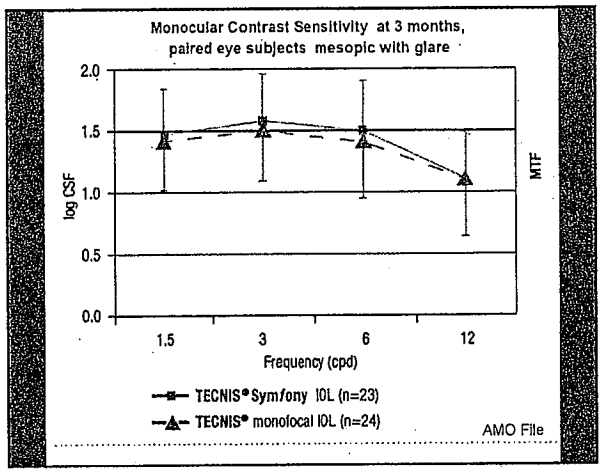
Figure 1

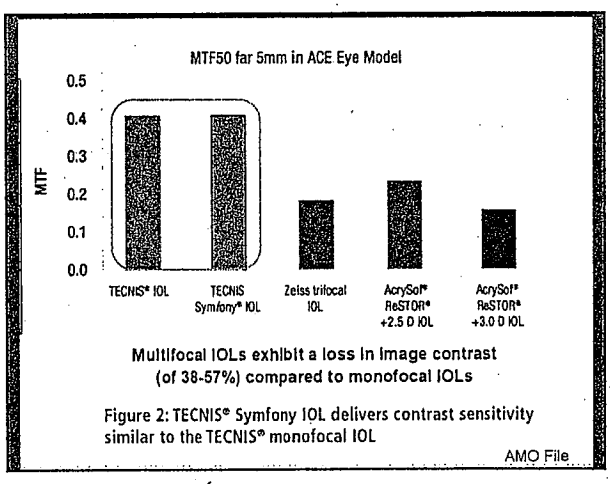


AMO File


Distinct Single Focus
Two Distinct Foci
Elongated Focus
Data on File:TECNIS® Symfony Green Light Bundle Bench Test
DOF2014CT005. Abbott Medical Optics Inc. 2014


Corrected
for chromatic
aberration
Green
Blue Red
Light
AMO File


Monocular Contrast Sensitivity at 3 months,
paired eye subjects mesopic with glare
log CSF
MTF
2.0
1.5
1.0
0.5
0.0
1.5
3
6
12
Frequency (cpd)
TECNIS® Symfony IOL (n=23)
TECNIS® monofocal IOL (n=24)
AMO File


MTF50 far 5mm in ACE Eye Model
MTF
0.5
0.4
0.3
0.2
0.1
0.0
TECNIS® IOL
TECNIS Symfony® IOL
Zeiss trifocal IOL
AcrySof® ReSTOR® +2.5 D IOL
AcrySof® ReSTOR® +3.0 D IOL
Multifocal IOLs exhibit a loss in image contrast
(of 38-57%) compared to monofocal IOLs
Figure 2: TECNIS® Symfony IOL delivers contrast sensitivity
similar to the TECNIS® monofocal IOL
AMO File

Disadvantages of the Symfony are all in the design

TRANSLATIONAL SCIENCE

Clinically Relevant Optical Properties of Bifocal, Trifocal, and Extended Depth of Focus Intraocular Lenses

Damien Gatinel, MD, PhD; Jérôme Loicq, PhD

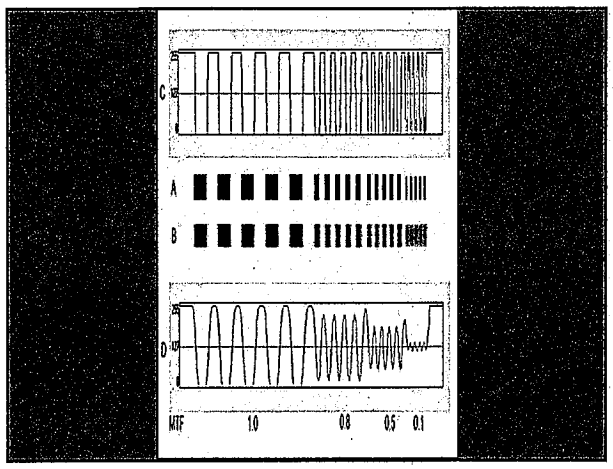
Optical Properties of Three IOLs/Gatinel & Loicq

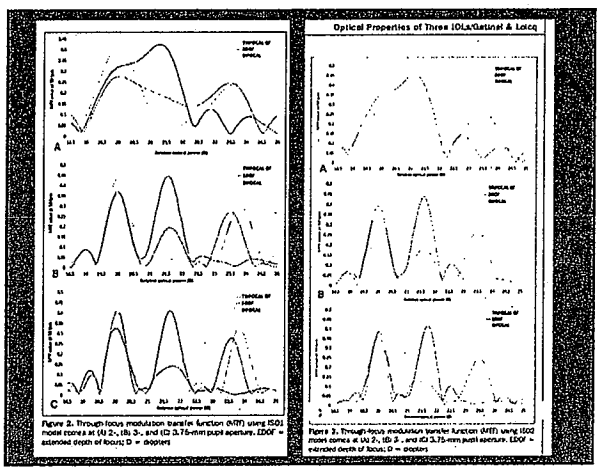
TABLE 1
Features of the Three Studied Lenses

Characteristic	TECNIS ZMB00 IOL	TECNIS Symfony ZXR00 IOL	FineVision CFree IOL
Optical/total diameter (mm)	13/6	13/6	6/11.4
Haptic design	one-piece/C-loop	one-piece/C-loop	one-piece/double C-loop
Power addition at the IOL plane (D)	+4.00	+1.75	+1.75 and +3.50
Spherical aberration (µm)	-0.27	-0.27	-0.11
Refractive index/Abbe number	1.47/55	1.47/55	1.52/42
UV-blue filter	UV	UV	UV/violet-blue
Indicated far optical power (D)	+20.00	+20.00	+20.00

IOL = intraocular lens; D = diopters; UV = ultraviolet
The TECNIS ZMB00 and Symfony ZXR00 are manufactured by Abbot Medical Optics, Abbott Park, IL, and the FineVision CFree lens is manufactured by PhysIOL, Liège, Belgium.

lugs may enable surgeons to predict visual outcomes properties (MTF and USAF targets) of this new IOL in





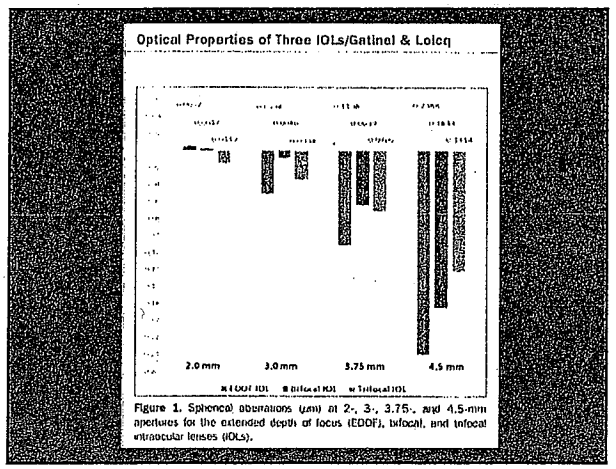
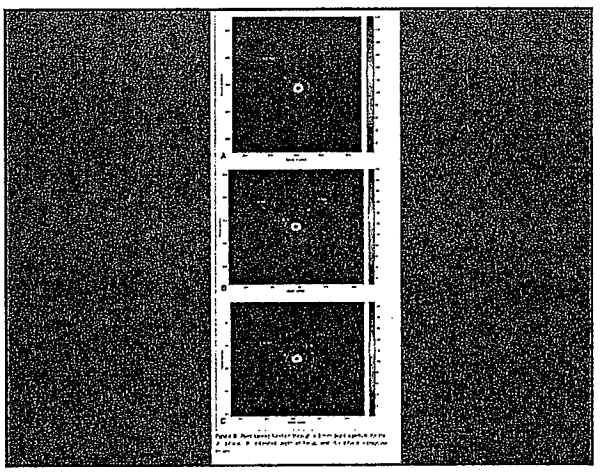


Figure 1. Spherical aberrations (µm) at 2-, 3-, 3.75-, and 4.5-mm apertures for the extended depth of focus (EDOF), bifocal, and trifocal intraocular lenses (IOLs).



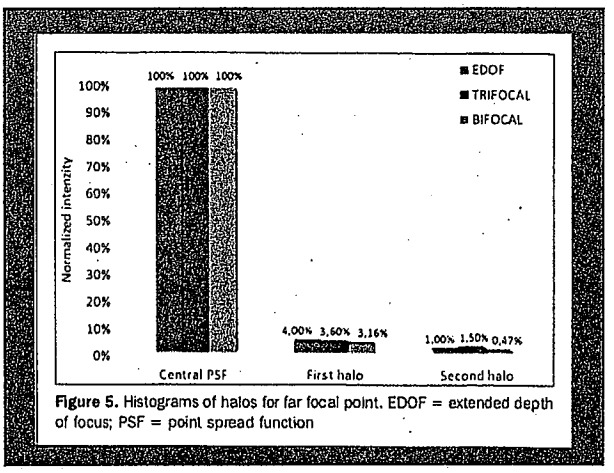
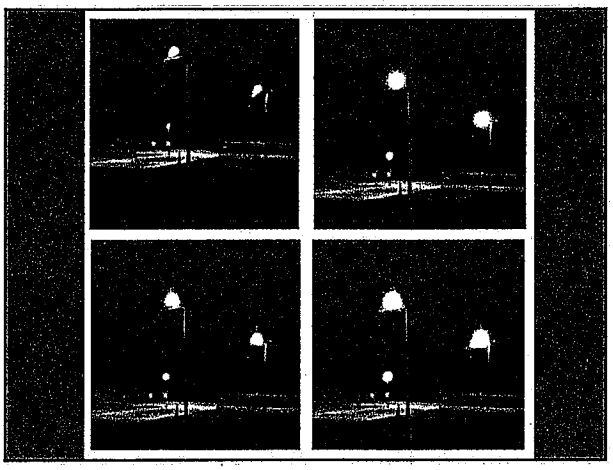


Figure 5. Histograms of halos for far focal point. EDOF = extended depth of focus; PSF = point spread function

Contrast sensitivity may decrease and spherical aberrations increase significantly in scotopic conditions



Distance High-Contrast Photopic Visual Acuities

TABLE 1
Monocular Distance Visual Acuity at 6 Months

Monocular Visual Acuity	Symfony Uncorrected	Symfony Best Corrected	Monofocal Control Uncorrected	Monofocal Control Best Corrected
20/20 or better	38.8%	83.7%	47.3%	88.5%
20/25 or better	65.3%	98.0%	71.6%	96.6%
20/32 or better	87.8%	100.0%	85.1%	98.6%
20/40 or better	96.6%	100.0%	93.9%	100.0%
20/50-20/80	2.7%	0.0%	6.1%	0.0%
20/100 or worse	0.7%	0.0%	0.0%	0.0%
Total	147	147	148	148

TABLE 2
Binocular Distance Visual Acuity at 6 Months

Binocular Visual Acuity	Symfony Uncorrected	Symfony Best Corrected	Control Uncorrected	Control Best Corrected
20/20 or better	62.6%	93.2%	71.6%	95.3%
20/25 or better	91.2%	98.6%	84.5%	98.6%
20/32 or better	97.3%	100.0%	95.9%	100.0%
20/40 or better	99.3%	100.0%	100.0%	100.0%
20/50-20/80	0.7%	0.0%	0.0%	0.0%
20/100 or worse	0.0%	0.0%	0.0%	0.0%
Total	147	147	148	148

TABLE 4
Mean Monocular and Binocular Uncorrected and Distance Corrected Intermediate Visual Acuity at 66 cm at 6 Months

		Monocular				Binocular			
Visual Acuity[A]	Lens Group	N	Mean LogMAR	Snellen Line Equiv.	Line Change vs. Control	N	Mean LogMAR	Snellen Line Equiv.	Line Change vs. Control
Uncorrected	Symfony	147	0.087*	20/25	1.7 lines	147	0.002	20/20	1.3 lines
	Control	148	0.256*	20/40		148	0.134	20/25	
Distance Corrected	Symfony	147	0.104*	20/25	2.4 lines	147	0.032	20/20	1.9 lines
	Control	148	0.342*	20/40		148	0.227	20/32	

* The primary study endpoints are uncorrected and distance corrected intermediate VA for first eyes. Symfony had significantly better mean UCIVA and DCIVA compared to Control with p<0.0001 (from one-sided two-sample t-test).

TABLE 5
Monocular Uncorrected and Distance Corrected Intermediate Visual Acuity at 66 cm at 6 Months

Monocular Visual Acuity	Symfony Uncorrected	Symfony Distance Corrected	Control Uncorrected	Control Distance Corrected
20/20 or better	40.8%	34.7%	12.8%	4.7%
20/25 or better	76.9%	70.1%	33.8%	13.5%
20/32 or better	92.5%	90.5%	54.7%	31.8%
20/40 or better	98.6%	97.3%	69.6%	53.4%
20/50-20/80	1.4%	2.7%	29.1%	42.6%
20/100 or worse	0.0%	0.0%	1.4%	4.1%
Total	147	147	148	148

TABLE 6
Binocular Uncorrected and Distance Corrected Intermediate Visual Acuity at 66 cm at 6 Months

Binocular	Symfony		Control	
Visual Acuity	Uncorrected	Distance Corrected	Uncorrected	Distance Corrected
20/20 or better	74.8%	61.9%	31.1%	8.1%
20/25 or better	96.6%	92.5%	60.1%	35.1%
20/32 or better	100.0%	100.0%	83.1%	62.8%
20/40 or better	100.0%	100.0%	91.9%	79.7%
20/50-20/80	0.0%	0.0%	8.1%	20.3%
20/100 or worse	0.0%	0.0%	0.0%	0.0%
Total	147	147	148	148

TABLE 7
Mean Monocular and Binocular Uncorrected and Distance Corrected Near Visual Acuity at 40 cm at 6 Months

		Monocular				Binocular			
Visual Acuity	Lens Group	N	Mean LogMAR	Snellen Line Equiv.	Line Change vs. Control	N	Mean LogMAR	Snellen Line Equiv.	Line Change vs. Control
Uncorrected	Symfony	147	0.241	20/32	2.2 lines	147	0.146	20/25	1.8 lines
	Control	148	0.459	20/63		148	0.328	20/40	
Distance Corrected	Symfony	147	0.323[a]	20/40	2.2 lines	147	0.229	20/32	2.0 lines
	Control	148	0.544[a]	20/63		148	0.426	20/50	

[a] The secondary endpoint is distance corrected near VA for first eyes. Symfony had significantly better VA compared to Control with a p value of <0.0001 (from one-sided two-sample t-test)

TABLE 8
Monocular Uncorrected and Distance Corrected Near Visual Acuity at 40 cm at 6 Months

Monocular	Symfony		Control	
Visual Acuity	Uncorrected	Distance Corrected	Uncorrected	Distance Corrected
20/20 or better	9.5%	3.4%	0.0%	0.0%
20/25 or better	28.6%	10.9%	2.7%	0.7%
20/32 or better	55.8%	33.3%	17.6%	3.4%
20/40 or better	81.0%	61.9%	31.1%	16.2%
20/50-20/80	19.0%	36.7%	54.1%	56.1%
20/100 or worse	0.0%	1.4%	14.9%	27.7%
Total	147	147	148	148

TABLE 9
Binocular Uncorrected and Distance Corrected Near Visual Acuity at 40 cm at 6 Months

Binocular	Symfony		Control	
Visual Acuity	Uncorrected	Distance Corrected	Uncorrected	Distance Corrected
20/20 or better	21.8%	8.2%	4.7%	1.4%
20/25 or better	55.1%	23.8%	12.8%	4.7%
20/32 or better	84.4%	52.4%	33.8%	12.8%
20/40 or better	95.9%	90.5%	62.8%	34.5%
20/50-20/80	4.1%	9.5%	32.4%	58.8%
20/100 or worse	0.0%	0.0%	4.7%	6.8%
Total	147	147	148	148

FIGURE 1
Monocular Defocus Curves at 6 Months
Symfony and Monofocal Control
(with 95% Confidence Intervals)

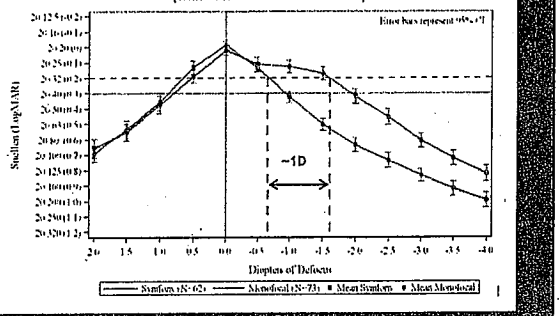


FIGURE 3
Binocular Defocus Curve at 6 Months
Bilateral Subjects—Symfony and Monofocal Control

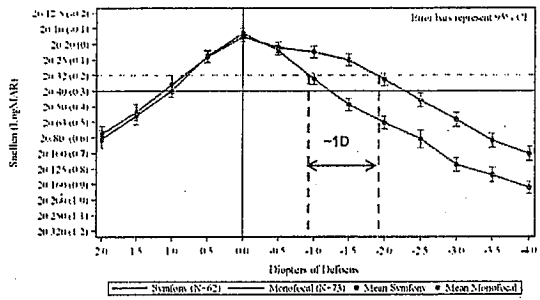


FIGURE 4
Monocular Defocus Curve at 6 Months By Pupil Size
Symfony Subjects

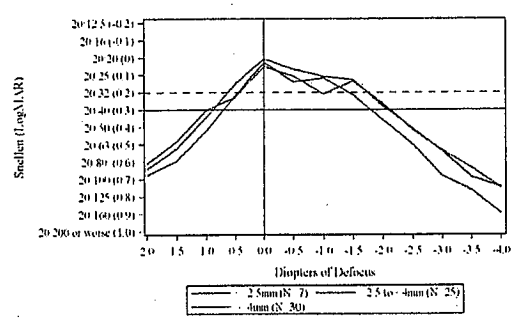
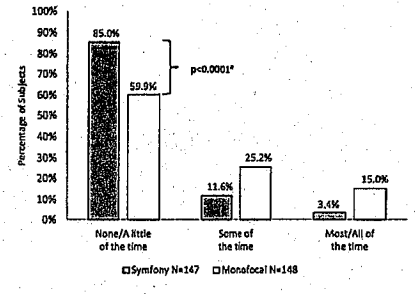


TABLE 10
Monocular Best Corrected Distance Contrast Sensitivity at 6 Months

Spatial Frequency	Lens Model	N	Mesopic Without Glare Median*	Mesopic Without Glare Subjects who did not see the reference pattern n	Mesopic Without Glare Subjects who did not see the reference pattern %	Mesopic With Glare Median*	Mesopic With Glare Subjects who did not see the reference pattern n	Mesopic With Glare Subjects who did not see the reference pattern %	Photopic With Glare Median*	Photopic With Glare Subjects who did not see the reference pattern n	Photopic With Glare Subjects who did not see the reference pattern %
1.5 cpd	Symfony	146	1.520	0	0.0	1.520	0	0.0	Not tested		
	Control	147	1.500	1	0.7	1.520	1	0.7	Not tested		
	Difference		0.020			0.000			Not tested		
3.0 cpd	Symfony	146	1.410	0	0.0	1.440	1	0.7	1.560	0	0.0
	Control	147	1.490	3	2.0	1.490	3	2.0	1.705	1	0.7
	Difference		0.080			0.048			0.145		
6.0 cpd	Symfony	146	1.360	16	11.0	1.360	19	13.0	1.700	4	2.7
	Control	147	1.540	6	4.1	1.550	7	4.8	1.840	5	3.4
	Difference		-0.180			-0.170			-0.140		
12.0 cpd	Symfony	146	0.910	38	26.0	0.760	44	30.1	1.325	12	8.2
	Control	147	1.080	23	15.6	1.080	28	19.0	1.540	8	5.1
	Difference		-0.170			-0.320			-0.215		
18.0 cpd	Symfony	146	Not tested			Not tested			0.488	74	50.8
	Control	147	Not tested			Not tested			1.100	8	5.4
	Difference		Not tested			Not tested			-0.215		

cpd = Cycles per degree
* in log units

FIGURE 5
Overall Spectacle Wear at 6 Months



* "None of the time" and "A little of the time" combined; 1-sided Fisher's exact test.

TABLE 14
Spontaneous (Non-directed*) Reports of Ocular Symptoms (First Eyes) at 6 Months

Ocular Symptoms		Symfony N=147 n	Symfony N=147 %	Control N=148 n	Control N=148 %
Image Quality					
Blurred vision		25	17.0	35	23.6
	Overall	6	4.1	8	5.4
	Distance	9	6.1	3	2.0
	Intermediate	1	0.7	2	1.4
	Near	13	8.8	26	17.6
Optical/Visual					
Halos		24	16.3	2	1.4
	Mild	9	6.1	1	0.7
	Moderate	11	7.5	0	0.0
	Severe	4	2.7	1	0.7
Night Glare		4	2.7	0	0.0
	Mild	1	0.7	0	0.0
	Moderate	3	2.0	0	0.0
	Severe	0	0.0	0	0.0
Starbursts		13	8.8	2	1.4
	Mild	6	4.1	1	0.7
	Moderate	5	3.4	1	0.7
	Severe	2	1.4	0	0.0
Night vision difficulty (overall)		4	2.7	0	0.0
Sensation					
Dryness		12	8.2	16	10.8

%=n/N (Total)
Note: Includes reports of optical/visual symptoms common to traditional multifocal IOLs (halos, night glare, starbursts, and night vision difficulties) as well as any findings reported with an incidence of 10% or more at 6 months.
* Non-directed, spontaneously-reported subject responses were obtained from the open-ended question "Are you having any difficulties with your eyes or vision?".

TABLE 15
Experience/Bother with Visual Symptoms over the Past 7 Days at 6 Months (Directed Reports)

		Symfony N=147 n	Symfony N=147 %	Monofocal N=148 n	Monofocal N=148 %
Halos	None	60	40.8	105	70.9
	Bother a little bit	46	31.3	24	16.2
	Bother somewhat	18	12.2	13	8.8
	Bother quite a bit	13	8.8	2	1.4
	Very bothered	10	6.8	4	2.7
Starbursts	None	62	42.2	110	74.3
	Bother a little bit	42	28.6	18	12.2
	Bother somewhat	18	12.2	12	8.1
	Bother quite a bit	13	8.8	2	1.4

		Symfony N=147 n	Symfony N=147 %	Monofocal N=148 n	Monofocal N=148 %
	Very bothered	12	8.2	6	4.1
Glare*	None	62	42.8	85	57.4
	Bother a little bit	50	36.6	35	23.6
	Bother somewhat	12	8.3	18	12.2
	Bother quite a bit	10	6.9	5	3.4
	Very bothered	8	5.5	5	3.4
Streaks of Light*	None	122	84.7	126	85.1
	Bother a little bit	11	7.6	10	6.8
	Bother somewhat	5	3.5	7	4.7
	Bother quite a bit	2	1.4	1	0.7
	Very bothered	4	2.8	4	2.7
Occlusions (Shadows)*	None	139	95.2	140	94.6
	Bother a little bit	4	2.7	4	2.7
	Bother somewhat	1	0.7	2	1.4
	Bother quite a bit	0	0.0	0	0.0
	Very bothered	2	1.4	2	1.4
Sensitivity to Light*	None	65	44.5	75	50.7
	Bother a little bit	53	36.3	38	25.7
	Bother somewhat	15	10.3	18	12.2
	Bother quite a bit	9	6.2	6	4.1
	Very bothered	4	2.7	11	7.4
Poor Low Light Vision*	None	60	41.1	60	40.5
	Bother a little bit	64	43.8	56	37.8
	Bother somewhat	13	8.9	21	14.2
	Bother quite a bit	7	4.8	8	5.4
	Very bothered	2	1.4	3	2.0

%=n/N (total) excluding not reported
* None includes "did not experience symptom" and "experienced symptom but not bothered".
** "Not Reported" - Two Symfony subjects did not respond to the glare question, three Symfony subjects did not respond to the streaks of light question, and one Symfony subject did not respond to the occlusion question, to the sensitivity to light question and to the poor low light vision question.

Disadvantages of EDF

Intermediate to near is pupil, light, target refraction dependant

Dysphotopsias and contrast are worse than MF but better than MTF

Non dominate eye should be operated on first

Target Refraction

Target plano ou or – 0.25 post-op

Mini mono ≤ –0.50 non dominate

Avoid > - .50

Post-Surgical Refractions

Auto refractors do not work well with Symfony

Manifest refraction – push plus

Avoid hyperopia

Symfony is a game changer

Ideal candidates should have no significant disorder with reduced contrast sensitivity or corneal spherical aberrations or large scotopic pupils

Go to Presbyopic Lens

ACM (Crystalens/ Trulign)

EDF (Symfony/Symfony Toric)

Special Interest Lens

Multifocals

Toric Lens

Curriculum Vitae

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Education:

- University of Maryland, College Park, Maryland
  B.S., May 1976
- University of Maryland, School of Medicine, Baltimore, Maryland
  M.D, May 28, 1982
- Internship, General Surgery, Johns Hopkins Hospital, Baltimore, Maryland
  July 1, 1982 - June 30, 1983
- General Surgery Fellow, Johns Hopkins, Department of General Surgery, Baltimore, Maryland
  July 1, 1983 - June 30, 1985
- Resident, Ophthalmology, University of Maryland Medical System, Baltimore, Maryland
  July 1, 1985 - June 30, 1987
- Chief Resident, Ophthalmology, University of Maryland Medical System, Baltimore, Maryland
  July 1, 1987 - June 30, 1988

Work History:

- Hirsch Eye Group, Fallston, MD 21047
  July 1988 - June 1989
- Katzen Eye Group, Dulaney Valley Rd. . Towson Md. 21204
  June 1989 - December 1996
- Eye & Cosmetic Surgery Ctr. St.Paul Place, Baltimore Md 21202
  Dec 1996 - Present

Honors:
Phi Kappa Phi
Phi Beta Kappa
Eta Beta Rho Honors Society
Cum Laude Graduate, University of Maryland, College Park
Dean's List, 1971-1976, University of Maryland, College Park

Board Certification:
Diplomat & Fellow, American Board of Ophthalmology

Research Appointment:

- Research Assistant, National Institute of Health / National Cancer Institute, Bethesda, Maryland
  1976-1978
- Research Assistant, Baltimore Cancer Research Center, Baltimore, Maryland
  1978-1980
- Research Fellow, Johns Hopkins University School of Medicine, Center for Vitreoretinal Research, Baltimore, Maryland
  1983-1985
- Clinical Investigator, for FDA approved study Staar Collamer Lens
  1996
- Clinical Investigator, for FDA approved study Visian ICL
  1997 - 2006

Academic Appointment:

- Clinical Instructor, University of Maryland School of Medicine, Baltimore, Maryland
  1989 – 1990
- Assistant Clinical Professor of Ophthalmology, University of Maryland School of Medicine, Baltimore, Maryland
  1990- Present
- Clinical Instructor, Johns Hopkins Hospital, Baltimore, Maryland
  1991- Present
- Director: Mercy Medical Center for: Eye & Cosmetic Surgery
  1996- Present
  1996- Investigator: Staar Surgical, FDA Study (Collamer Lens)
  1997- Investigator: Staar Surgical, FDA Study (Implantable Contact Lens)

Professional Memberships:

Member, American Medical Association
Member, Association for Research and Vision in Ophthalmology (1982- 1988)
Member, Maryland Eye Physician and Surgeons
Member, MED CHI of Maryland
Committee Member, Research to Prevent Blindness, Inc.
Member, Universal Scleroderma Foundation
Member, Wilmer Resident's Association
Member, American Society of Cataract & Refractive Surgery
Member, American Diabetes Association
Member, American Society for Laser Medicine and Surgery
Board Member, International Society of Cosmetic Laser Surgeons
Vice President, International Association of Women Eye Surgeons

Medical Licenses:
Maryland
District Of Columbia
Virginia
North Carolina
New York

Community & Volunteer services:

- Health Mission, "Project Dawn" Guyana
  March 1988
- Free Screening, Mercy Medical Center, and Department of Aging
  1997, 1998
- Son's Of Italy – Current Techniques in Eye Surgery
  1999
- Baltimore County Department of Aging
  1990- 1996
- Health Mission - Cali, Columbia
  February 2008

Television:
The Women's Doctor:
1994- "Topical Anesthesia for Cataract Surgery"
1995- "Topical Anesthesia & Clear Corneal Incisions & Foldable Lens"
1996- "First Use Of C02 laser in Baltimore for Eyelid Surgery & Facial Resurfacing"
1997- " Implantable Lens Correcting Hyperopia & Myopia"
1998 " Laser Resurfacing with Co2 & Erbuim Lasers" For Pre Mature Aging
1999- " Implantable Contact Lens" Lasik Surgery
2000- " Toric Lens" Correcting Astigmatisim

1997- National Television: " Implantable Contact Lens"
1998- Ivanhoe Broadcast: " Implantable Contact Lens"
1998- National Television: " Topical, Clear Corneal Cataract Surgery"

Publication:

- Rowen, S.L. & Glaser, B.M. (1985). "Retinal Pigment Epithelial Cells Release a Chemoattractant For Astrocytes, "ARCHIVES OF OPHTHALMOLOGY, 103 (5), 704-707.

- McDonnell, P.J., Rowen, S.R., Glaser, B.M. & Sato, M. (1985). "Posterior Capsule Opacification." ARCHIVES OF OPHTHALMOLOGY, 103 (9), 1378-1381.

- Rowen, S.L. (1994). "Advanced Phacomachine & New Kelman Tip". PHACO AND FOLDABLES, Vol 7 No. 1.

- OCULAR SURGERY NEWS. (1994) "Leaders in Clear Corneal Incisions"
- Rowen, S.L. (1996). "Topical Anesthesia in Cataract Surgery". REVIEW OF OPHTHALMOLOGY, Supplement to VOL. 2, No. 6
- OPHTHALMOLOGY TIMES. (1995). "Miochol-E with Topical Anesthesia"
- EYE TECHNOLOGY (1996). "Current Trends in Cataract Surgery".
- Rowen, S.L. (1996) "Yes, You Can Convert To Clear Corneal Incisions". REVIEW OF OPHTHALMOLOGY, Vol. 3 No. 5, 110-115
- OCULAR SURGERY, News Symposium Supplement, Feb. 1996
- OCULAR SURGERY, News Symposium Supplement, Feb. 1997
- Rowen, S.L. (1997) "Understanding the Benefits of Plate Haptic Lenses" REVIEW OF OPHTHALMOLOGY, Vol. IV., and No.7 4B- 6B
- Rowen. S.L. (1999) " Why & How to Convert to Injectable Lens" REVIEW OF OPHTHALMOLOGY, VOL 8, and page87
- Rowen S.L. 9 (1999) "Pre-Operative & Post- Operative Medications used for Cataract Surgery" CURRENT OPINIONS IN OPHTHALMOLOGY, VOL 10, PAGES 29-35

American Academy of Ophthalmology - Annual Meeting:
1994 – 2009: 40 Credits Each Calendar Year

American Society of Cataracts and Refractive Surgery - Annual Meeting:
1995 – 1996, 1998 – 2010: 40 Credits Each Calendar Year

American Meeting International Society of Cosmetic Laser - Surgeons:

1996 - 24 Credits	1999 –24 Credits
1998 - 29 Credits	2000 – 24 Credits

International Society of Refractive Surgeons:
1995, 1998 – 2002, 2004: 16 Credits Each Calendar Year

Maryland Optometric Association
1998- 6 Credits

Baltimore Refractive Surgery Society

1999- 6 Credits

Greater Baltimore Medical Center
1999- 6 Credits

Visual FreedomCenter
1998- 12 Credits

Preceptorships - Ultrapulse CO2 Laser:
1995 - January - Dr. Robert Adrian, Washington, D.C.
Facial Resurfacing Technique

1995 - February - Dr. Sterling Baker, Oklahoma City, OK.

Preceptor: Coherent Medical:
1996- Present Supervise use of C02 & Erbium Laser

Laser Education Foundation - I.S.C.L.S.
1996- October- Sterling S. Baker MD. , Chicago, IL.
Pre- AAO Cosmetic Symposium

Coherent / Ultra FineErbium
1998- January, Maureen A. Foley, RN, BSN, CNOR
Mercy Hospital

The International Society of Cosmetic Laser Symposium
1998- February – C.William Hanke, MD. , Orlando, FL.

Eyelid Incision Techniques International Workshop on Anesthetic Surgery:
1996 April - Dr. Oscar Remirez, Course Director
Rejuvenation of the Centra Oval of the Face, Perioral Area and Lips

Techniques and Variations of the I. Howard Fine Clear Corneal Incision Course
1992 - August - Dr. Charles Williamson , Course Director

Lamellar Refractive Surgery Course
1997 – May, Dr.Stephan G. Slade, Baltimore, MD.

Visual Freedom Center
1998- February – Dr. Charles Casebeer, Course Director
Introduction / Visx Certification Course, Transition to Lasik/ Wet Lab

VISX University

1998- November – Visx Excimer Laser System
Hyperopia Training Course

Johns Hopkins Hospital, Wilmer Eye
1998- Preceptorship for PRK, Course Director, Terrance O'Brian MD.

Presentations: Cataracts, Glaucoma, Foldable Lens & Topical Anesthesia

- 1984- ARVO, Wilmer Eye Meeting, Sarasoto, FL.
- 1989- ARVO, Wilmer Eye Meeting, Sarasota, FL.
  "Endothelial Cell Produce a Chemoattractant for Astrocytes"
- 1985- ARVO, Wilmer Eye Meeting, Sarasoto, FL.
  "Retinal Pigment Epithelial Cells Release a Chemoattractant for Astrocytes"
- 1992- Greater Baltimore Medical Center Symposium, Baltimore, MD.
  "The Use of Foldable Lenses in Cataract Surgery"
- 1993- Maryland Eye Physicians and Surgeons
  "No Stitch Incision, Capsulorhexis, and Foldable Lenses" Invited Paper
- 1993-American Academy of Ophthalmology
  IOLAB BOOTH " Perilimbal Incisions and Topical Anesthesia"
- 1994- American Society of Cataract and Refractive Surgeons, Boston, Mass.
  "Perilimbal Incisions Using Topical Anesthesia "
- 1994- American Academy of Ophthalmology , San Francisco, CA
  "Advanced Phacoemulsification and Combined Glaucoma- Phaco Surgery"
  "Topical Anesthesia"
  "Clinical Decisions in Management of Complications"
  "What I'm Doing Differently This Year"
  "Techniques and Variation of the I. Howard Fine Clear Corneal Incision Course"
- 1995- Staar Surgical: Course Director: Baltimore, MD.
  "Techniques and Variation of the I.Howard Fine Clear Corneal Incision Course"
- 1995- American Society of Cataract and Refractive Surgery, San Diego, CA.
  "The use of Miochol- E for Cataract Surgery and Topical Anesthesia"
  "Advances in Topical Anesthesia and Clear Corneal Incisions"
  "Topical Anesthesia and Clear Corneal Incisions" Staar Booth ASCRS.
- 1995 - American Academy of Ophthalmology: Atlanta, GA.
  "Clinical Decision in Management of Complications"
  "What I Am Doing Differently This Year"
  "Advance Phacoemulsification and Combined Glaucoma- Phaco Surgery"
  "Topical Anesthesia"
  "Clear Corneal Incisions" Invited: ASCRS Symposium
- 1996- Techniques and Variations of the I.Howard Fine Clear Corneal Incision Course: New Jersey
  "Topical Anesthesia and Clear Corneal Incisions"
- 1996-The New Jersey Academy of Ophthalmology: New Jersey
  "Topical Anesthesia and Clear Corneal Incisions"

- 1996-American Society of Cataract and Refractive surgery: Seattle, Washington
  "Cataract Surgery for the 90's" Staar and Chiron
  "Advanced Phacoemulsification and Combined Glaucoma- Phaco Surgery"

- 1996-Techniques and Variations of the I. Howard Fine Clear Corneal Incision Course; Minneapolis
  "Cataract Surgery for the 90's" Course Director Invited Presentation
- 1996- American Academy of Ophthalmology": Chicago, IL.
  "Clinical Decisions in Management of Complication in Cataract Surgery"
  "Cataract Surgery of the 90's" Staar & Chiron
  "Advanced Phacoemulsification and Combined Glaucoma – Phaco Surgery"
- 1996- Tarrand County Medical Society: Fort Worth, TX.
  " Cataract Surgery for the 90's"
- 1997- Ophthalmology Society: Bethlehem, PA.
  "Cataract Surgery for the 90's"
- 1998- The Virginia Society of Ophthalmology: Williamsburg, VA.
  "Posterior Chamber Phakic IOLS"
  "Clear Cornea Cataract Surgery"
  " Co2 Laser for Blepharoplasty & Resurfacing"
- 1998- American Academy of Ophthalmology: New Orleans, LA.
  "Clinical Decisions in the Management of Complication in Cataract and IOL Surgery"
  Preceptor for ICL – Staar Booth
- 1998-Hawaii Eye Meeting / Slack Incorp: Hawaii
  "Topical Clear Corneal Cataract with Diclofenc Sodium"
- 1998-Women in Ophthalmology: Aspen, CO.
  "Cataract Surgery for the Millenium"
- 1998- Maryland Physicians & Eye Surgeons: Maryland
  " Cataract Surgery for the 90's"
  " ICL Update"
  " Toric IOL'S"
- 1999-American Society of Cataract and Refractive surgery: Seattle, Washington
  "Advanced Techniques for Cataract Surgery using Topical Anestheia and Clear Corneal Incisions"
  "Pre & Post Op Medications for the ICL"
  Course Instructor – 2 hrs. " Advance Techniques for Cataract Surgery, ICL's & Toric Lenses"
- 1999- Greater Baltimore Medical Center Baltimore, MD.
  "ICL Update"
- 1999-Society of Ophthalmology: Puerto Rico
  "Cataract Surgery for the Millenium"
  "ICL Update" " Toric IOL'S for Cataract Surgery"
- 1999-Los Angeles Society of Ophthalmology: Los Angeles, CA.
  "Cataract Surgery for the Millenium"
- 2000- American Society of Cataract and Refractive Surgery : Boston Mass.

" International Challenges & Techniques in Advanced Cataract Surgery"

- 2002- American Academy Of Ophthalmology - Florida
  " Clinical Decision & Management of Complication 2002"
  " Prevention & Management of Iris Prolapse During Cataract Surgery"

Presentations: Cosmetic - Techniques using CO2 & Erbium Lasers:

- 1996- International Society of Cosmetic Laser Surgery: Chicago IL.
  "CO2 Laser in a Traditional Ophthalmology Practice"
- 1996- Coherent / Pre- AAO, Chicago, IL.
  "CO2 Laser in a Traditional Ophthalmology Practice"
- 1996- International Society of Cosmetic Laser Surgery: Washington, DC.
  "CO2 Laser in a Traditional Ophthalmology Practice"
- 1998- The Virginia Society of Ophthalmology, Williamsburg, VA.
  "Skin Resurfacing with the CO2 & Erbium laser"
- 1998- Maryland Optometric Association: Baltimore, MD.
  "Cosmetic Laser Surgery using the CO2 & Erbium Lasers"
- 1998- 7th. International Society of Cosmetic Laser Surgeons: Orlando, FL.
  "Great Marketing – Minimal Expense – Coordinated Skin care"
- 1999-International Society of Cosmetic Laser Surgeons: New Orleans, LA.
  "Erbium Resurfacing for Xanthelasma"
  " CO2 Laser Blepharoplasty"
- 2002 – International Society of Cosmetic Laser Surgeons : New York
  "Lower Lid Blepharoplasty Multi-Modal approved"
  Presentations: Toric & Implantable Contact Lens:
- 1997- Taustin Eye Center: Louisville, KY.
  " Implantable contact lenses"
  " Toric IOL Update"
- 1998- Maryland Society of Eye Physicians & Surgeons: Baltimore, MD.
  "Intraocular Contact Lens"
- 1998- Sixth Annual Ophthalmic Allied Health Symposium: Wilmington, DE.
  "Implantable Contact Lens, My Personal Experience"
  "Update: Phase 1 & 2"
- 1998- Women in Ophthalmology: Colorado
  "Correction of High Myopia & Hyperopia with Intraocular contacts"
- 1998- American Society of Cataract and Refractive Surgery: San Diego, CA.
  Staar Surgical: ICL
  "Implantable Contact Lenses, My Personal Experience"
  "Phase 1 & 2" " ICL Update"
- 1998- Hoover Naquian Conference: Baltimore, Md.
  "Implantable Contact Lenses for Myopia and Hyperopia"
- 1999- 44th Annual University of Rochester Medical Center: New York
  "Toric Intraocular Lens"

"Implantacle Contact Lens For Myopia & Hyperopia"

- 1999- American Society of Cataract and Refractive Surgery: Seattle Washington
  Round Table Discussion Group: Starr Surgical: ICL
  "Latest Technique and variations of Refractive Surgery and the Benefits of using the Implantable Contact lens"
- 2000- Hawaii Eye Meeting / Slack Incorp. Hawaii
  "Current Trends in Refractive Surgery"
  "The Implantable Contact Lens FDA update, for Personal Experience & Techniques"
- 2002- New England Ophthalmological Society Inc,
  " Implantable Contact Lens , Personal Experiences"
  " FDA Update" " Toric & IOL "

International Presentation:

1994- Starr Surgical: Australia
Five City Lectures: Sidney, Perth, Melbourne, Adelaide, and Brisbane
"Clear Corneal Incisions Using Topical Anesthesia"

1995- Live Cataract Surgery: Toulouse, France
"Topical Anesthesia and Clear Corneal Incisions"

1995- Live Cataract Surgery: Juan De Pain, France
"Topical Anesthesia and Clear Corneal Incisions"

1997- Live Cataract Surgery: Clinique Sourdille, France
"From Phaco to CO2"
"Topical Anesthesia for Cataract Surgery"

1997- Live Cataract Surgery: University of Bologna, Italy
"Live Cataract Surgery and Discussion"

1998- IV Congresso International DE-Cataract: Rio de Janeiro, Brazil
"Toric Update & Foldable Lens"
"Implantable Contact Lens"
"Advanced Cataract Techniques"

1999- European Society of Ophthalmology
" Live Cataract Surgery" International Society of Women Eye Surgeons