ASO Mid-Year Conference

WORKBOOK

ONLINE May 22-30, 2023

Recorded Live at
Disney’s Coronado Springs Resort

Walt Disney World Florida
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May 4, 2023

To our Conference Attendees:

It is my great pleasure to welcome you to the 2023 Mid-Year Conference of the American Society of Ocularists. We are pleased to offer over 15 hours of education for both student interns enrolled in the ASO College of Ocularistry and for practicing ocularists. By attending the conference, you have the opportunity to earn over 50 continuing education credits approved by the National Examining Board of Ocularists (NEBO).

This year’s conference is being held inside Walt Disney World in beautiful Orlando, Florida. As the Disney Imagineers said, “the most magical place on earth”. Our conference hotel, Disney’s Coronado Springs Resort, is famed to be the most comprehensive property on Disney property for meetings and conferences like ours.

The Mid-Year is being filmed live to present online later this month for those who are not able to travel. Attendees for both the live and online conferences come not only from the U.S. but also Canada, Australia, China, Portugal and Italy, making this a truly international event.

The program, expertly put together by Program Co-Chairs Bridget Kinneer and Edwin Bullard features lectures on significant eye making techniques, as well as hands-on learning in ptosis management and cosmetic optics.

This meeting represents our largest since pre-Covid and reflects the growing interest in education. The continued growth of Interns enrolled in the College of Ocularistry is a testament to the stability and excitement the field of Ocularistry offers.

Again, welcome to the ASO Mid-Year. I look forward to greeting each and every one of you and hope you find this meeting stimulating and rewarding.

Sincerely,

David Gougelmann, BCO, BADO
President
Welcome from the Program Chairs

May 4, 2023

Fellow Ocularists,

As your conference co-chairs, we are super excited to present this meeting to the society. We have a fabulous line up of classes and workshops to help elevate the standards in our field. As practitioners of a rare and unique medical profession, it is up to us to continue to expand our skillset, learn new techniques and improve our trade no matter how long we have been practicing. There is no finish line or mastery of ocularistry as there is always more to learn, ways to improve and new technology to explore. And this constant pursuit of education not only benefits us, but it changes the lives of our patients.

As part of the education committee, it is our responsibility to provide the highest quality course material and teachers/lecturers we can find so that we all can be better ocularists. The classes and workshops at this conference have been chosen to provide high quality instruction on topics that are relevant and important to our profession. We are especially excited for the hands-on workshops, Dr. Karama coming from Morocco, and of course, the intern lectures where new ideas are always being presented.

We hope you all enjoy the meeting and have some fun in the parks, playing golf or just lounging by the pool chatting about eyes!
ASO Officers & Board of Directors
2023

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New York, New York

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Levels 1, 2, 3
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Jean Thompson, BCO, BADO, FASO

Level 4
Kevin V. Kelley, BCO, BADO, FASO
Welcome to the 2023 Mid-Year Conference of the American Society of Ocularists. We’re delighted that you are joining ASO live in Orlando. We know that you now have the option of earning your credits online. Your Education Committee understands that you cannot always be available to attend every conference, and so want you to know your attendance is valued. It’s often said that you learn as much in the hallways and at social events as you do in the classroom – so welcome to ASO in Walt Disney World!

**Your Name Badge is Your Entrance to Classes**

You are issued a name badge with a bar code that will be scanned each time you enter and leave a classroom. The scanners record the total amount of time you are in the classroom to issue your credits. You may leave the classroom for a quick phone call or bio-break during the course, but must be present for not less than 50 minutes to be awarded credit for that course.

It is your responsibility to get scanned. It is not an excuse to say you forgot or didn’t get scanned. There are several scanners present and if you happen to slip by one, you must go back and get scanned if you want NEBO credit for the course. And please, **DO NOT** wear badges from a previous conference. Only badges for this meeting will scan appropriately for your credits.

**NEBO Credits**

All courses held at ASO conferences are approved by the National Examining Board of Ocularists (NEBO).

Credits awarded by NEBO are subject to audit by a NEBO representative and may change from
that which was initially scheduled. Example: A course is scheduled to run for 60 minutes, which would receive 4 NEBO credits. However, if the session lasts longer than the planned 60 minutes, one additional credit would be awarded for every 15 minutes of overage. Similarly, if the course runs short, credits may be reduced, one for every 15 minutes of time.

An average of 50 attainable credits will be offered at each ASO Conference.

Members earn additional NEBO credits by participating as a presenter. This is highly encouraged by the Education Committee, and we invite all ASO members and others attending the conference to reach out to a member of the Education Committee if you’re interested in presenting a course at an ASO conference.

**Transcripts**
The Education Committee tracks and records all credits for all conference attendees. Individual transcripts are available on the ASO website in the “Members Only” section. Updated transcripts are posted approximately four to six weeks after each conference. Non-members should contact the ASO office for their transcript.

**Breakfasts, Refreshment Breaks and Meal Functions**
Once again, we are delighted to have you with us here in Walt Disney World. Several of you have brought family and friends to enjoy the warm weather and Disney theme parks. We’re happy about that! Please remember that breakfasts, refreshment breaks and meal functions are planned for paid conference attendees. If your family and friends want to participate in the meal functions and have not already purchased the guest registration package, please see Angie at the registration desk to purchase additional food tickets.

**Cell Phones**
Your phone must be OFF or on vibrate. Please be considerate of the speaker and your colleagues.

**Be punctual** – Being on time for classes is not only respectful to the speaker but necessary if you want NEBO credit. Remember, anyone arriving ten (10) minutes after the course has started WILL NOT be scanned for CE Credit.

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**PROGRAM GUIDE LIABILITY STATEMENT**

While every effort is made to ensure accuracy and correctness of articles and study material, publication of such is not an endorsement of the research techniques or results reported in the submissions. The statement and opinions in the submissions of this Program Guide are solely those of the author(s) and are not necessarily those of the ASO Education Committee or the American Society of Ocularists. No endorsement of any product, material, or supplier should be inferred or assumed by the appearance of information or advertising in this ASO program Guide, and such appearance is not a warranty, endorsement of approval of the product or information by the ASO education Committee or the American Society of Ocularists.
THE COLLEGE OF OCULARISTRY

The College of Ocularistry (“COO”) is a division of the American Society of Ocularists. The mission of the COO is to provide the highest quality educational experience to students of Ocularistry.

We are a non-traditional educational institution that does not have a campus. Our courses are held in conjunction with the programs of the American Society of Ocularists (ASO) in the Spring and in the Fall. These conferences are held at various locations around the country. The educational program administered by the COO is geared to academically educate Ocularists that are in training. A large portion of your education will take place on the job.

OVERVIEW OF THE COLLEGE CURRICULUM

The clinical aspect of the College’s curriculum begins when the Intern becomes involved with the fitting and fabrication of ocular prosthetics, whether under the supervision of a Board Approved Diplomate Ocularist (BADO) or in the case of Unsupervised Interns, through experience.

The curriculum includes courses and workshops related to the entire scope of an Ocularists practice.

Interns of the College of Ocularistry are required to take an experience level examination (ELE) at specific intervals during their training to verify their level of training.

The courses and workshops are conducted at the Annual and Mid-Year Conferences of the American Society of Ocularists. The Annual Conference, occurring in the Fall, is held in conjunction with the American Academy of Ophthalmology in a city chosen by the Academy.

Lectures are provided by members of the faculty who are experienced in the area of study.

Workshops provides an opportunity for Interns to have a hands-on experience working with various techniques and materials. Some preparation of material that is to be brought to the course may be required.

Free papers on current subjects pertaining to an Ocularist’s practice are presented by knowledgeable health care practitioners.

The entire core curriculum is repeated every five years.
The ASO Board of Directors appoints the Deans of the College who select specific qualified instructors for the courses offered. The instructors are selected from the general ASO membership, medical affiliates, oculoplastic surgeons, physicians and ancillary ophthalmic technicians, nurses or health care professionals.

Michael Barrett, BCO, BADO, FASO
EauClaire, Wisconsin

Rick Bowen, BCO, BADO
Orlando, Florida

Willie Danz, BCO, BADO, FASO
San Francisco, California

David LeGrand, BCO, BADO, FASO
Chesapeake, Virginia

Vanessa Pederson, BCO, BADO
Atlanta, Georgia

Amy Wellner, BCO, BADO
Seattle, Washington
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Dean of Students
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The College of Ocularistry is a division of the American Society of Ocularists and is managed from the ASO Headquarters office.

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CONFERENCE FACULTY BIOS

Michael Barrett, BCO, BADO
Eau Claire, Wisconsin
mike@midwesteyelab.com

Mike was born and raised in Eau Claire Wisconsin where he has lived most of his life. Mike is a BCO, BADO and has been with the ASO for many years. He was a Board-Certified Optician, A fellow of the National Academy of Opticians. He enjoys instinctive archery, shooting his black powder flintlock rifle and going to the pistol range. Mike spent four years in the Marine Corps where he had a chance to visit other cultures and parts of the world. He also had first-hand experience with observing and handling high pressure devices such as mines and Booby traps (now called IED’s) and steam catapults.

Jonathan Brett, BCO, BADO
Oshawa, Ontario, Canada
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Jonathan Brett is a Canadian Ocularist with clinics in Ontario and Manitoba. I have had the pleasure to be trained by Pauline Slorach, Michael Webb and Jonathan S. Brett. Since becoming Board Certified in 2019 I have put the different skills I learned from each of them to great use in pursuing success for my patients.

James Bowen, III
Orlando, Florida
james@opleye.com
James R Bowen III known by friends and family as Jamie is a second year of intern within the American Society of Ocularists College of Ocularistry under Rick Bowen BCO BADO at Ocular Prosthetics Lab, Inc. in Orlando Florida. Jamie’s affinity for empirical processes, applied science and artistic quality has led him into the field of Ocularistry, believing that there are many opportunities to make meaningful contributions. Jamie is a paternal sixth-generation Floridian living in the Orlando area with his lovely wife Laylah, and daughter Kai.

**Edwin Bullard, BCO, BADO**
Tulsa, Oklahoma
[doogirldad@yahoo.com](mailto:doogirldad@yahoo.com)

Edwin “Ed” Bullard has been a member of the ASO for 19 years. Originally from upstate New York, in 2001 he and his wife Michelle (Education Committee Chair) became partners with Elsie Joy, BCO and The Eye Restoration Clinic (ERC) in Tulsa, Oklahoma. Both trained under Elsie Joy and are BADO’s and BCO’s. Edwin and Michelle are integral parts in growing ERC’s presence in Oklahoma, Arkansas and Kansas.

**Tawnya Cranmore, COO Intern**
Kirkland, Washington
[tawnya@nweyedesign.com](mailto:tawnya@nweyedesign.com)

Tawnya is an apprentice Ocularist at Northwest Eye Design in Kirkland, WA. She is a graduate of the University of Washington. In 2016, she began her apprenticeship with her husband Todd Cranmore, an Ocularist of 25 years. In 2020, Tawnya joined the ASO and the College of Ocularistry. Tawnya and Todd co-own their office and are dedicated to a personalized approach to prosthetic eye design.

**William “Willie” Danz, BCO, BADO, FASO**
San Francisco, California
[williedanz@aol.com](mailto:williedanz@aol.com)
Willie Danz is a 5th generation ocularist who has been in San Francisco as an ocularist for more than 40 years. He earned a BA degree from CSU, San Francisco; is one of the original 20 ASO Fellows; is a charter member of NEBO; served as President of the ASO; gave the Ruedemann lecture; served as the ASO Treasurer; and was honored by the ASO with the Distinguished Service Award and the Lee Allen Award. His son, Dave Danz, has joined the family business as the 6th generation and has blessed Bobbie and I with 4 wonderful grandchildren.

Kaylee Dougherty, BCO, CCA
Searsport, Maine
kaylee@bostonocular.com

Kaylee Dougherty received her Bachelor of Fine Arts degree in Sculpture from Boston University in 2011. She joined Boston Ocular Prosthetics as the apprentice to Ottie Thomas-Smith in May of 2013, and subsequently completed her training and passed her board exams in anaplastology in 2016, and in ocularistry in 2018. She currently serves as Secretary on the Board for Certification in Anaplastology, and is the owner of Boston Ocular Prosthetics. She serves her northern New England communities through her offices in Searsport, Maine, Portland, Maine, and Beverly, Massachusetts.

Monica Erickson, BCO, BADO
Spokane, Washington
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Monica Erickson is the Dean of Academics for the ASO College of Ocularistry. She holds a teaching credential from Western Governors University and a B.A. degree from Evergreen State College with a focus in Organizational Leadership and Environmental Studies. Monica says, “One of my main goals in taking this position is to help the curriculum evolve so the COO and education committee are working together to bring the most cohesive, effective and thorough education to our entire group of ocularists, interns, apprentices and associates.”

Rebecca Erickson, BCO, BADO
Seattle, Washington
ericksonlab@msn.com
Rebecca is a 3rd generation Board Certified, Board Approved Diplomate, and Washington State Licensed Ocularist. She joined the family business in 1986 after being encouraged by her grandfather, Charles Erickson. She began her apprenticeship under her father, Gerald R. Erickson and received her license in 1996. She has been working at Erickson Laboratories since then; carrying on the charismatic presence Charles and Gerald generated during their time at Erickson Laboratories. Rebecca is known for her beautiful craftsmanship and compassionate nature. She utilizes her thorough understanding of prosthetic eye creation and her caring personality to give her patients the highest level of care possible. More recently Rebecca has proudly taken on an apprentice – her daughter Angel Erickson – She will be the 4th generation Ocularist at Erickson Laboratories. Rebecca enjoys the outdoors whether it is camping, fishing, or exploring with her family and beloved dogs.

Andrew Etheridge, COO Intern
Baltimore, Maryland
ajetheridge4@gmail.com

Andrew Etheridge is a board-certified clinical anaplastologist with credentials in the orthotics and prosthetics field and is currently enrolled in the College of Ocularistry. His clinical expertise lies in facial, somatic, pedorthic care, and 3D technologies. He holds a master’s degree from the University of North Carolina at Greensboro. Andrew Etheridge is full time faculty and clinician at Johns Hopkins in Baltimore, Maryland. Mr. Etheridge is teaching courses in the first and newly established Clinical Anaplastology Master of Science program offered through the Johns Hopkins University School of Medicine Department of Art as Applied to Medicine. He has served as the Director of the Board for the International Anaplastology Association (IAA) and currently serves as Vice President of the Board for Certification in Clinical Anaplastology (BCCA). He continuously strives to push the specialty forward using new techniques, technology, and materials to facilitate the best patient care possible.

William “Hank” Freund, BCO, BADO
Linwood, New Jersey
hank@freundbrothers.com

Hank Freund is a licensed ophthalmic dispenser in the State of New Jersey. He started working in the family optical business as a teenager where he learned all phases of lens grinding and the making of eyewear. He watched his father design and modify ocular prosthetics and studied with Fritz Jardon in 1972. He graduated from Moravian College in Bethlehem, Pa with a degree in economics. He has taught ophthalmic dispensing at Camden County College. Hank is the president of Freund Brothers which is celebrating 125 years in business.

Cameran T. Hadlock, BCO, BADO
Cameran is a Board Approved Diplomate Ocularist with Eye Concern in Mesa, Arizona. He apprenticed under his father, John Hadlock. Cameran received his Bachelor's of Science in 2004 from Brigham Young University. He also received a Masters from the University of Kentucky. He is fluent in Spanish after serving a mission for his church in Ecuador. Cameran, along with his wife and muse, Amy Jo reside in Mesa, Arizona with their three sons, Joseph, Samuel, and Oliver. He enjoys reading, playing cello, working with the Boy Scouts of America, and being a father.

Erika’s career began in college, while working on her bachelor’s in medical science in Arkansas. She worked full time at a combined ophthalmology/optometry practice as a clinical technician. Later, she left that facility to help two Optometrists with a practice they had recently started. After graduating, she became a certified ophthalmic assistant and moved to Indiana to work at another ophthalmology/optometry practice, while pursuing becoming an eye doctor. She discovered ocularistry before starting optometry school and have been hooked ever since!

Fouad Karama obtained his optometrist diploma in 2005 at ESOL in Fes Morocco. He started his first ocular prostheses in 2008. He exchanged experience with several ocularists in Europe and Asia and trained about twenty ocularists around the world. In 2017 he obtained an ocularist diploma at the Sorbonne faculty of medicine in Paris. He is currently approved by the National Office for Veterans and War Victims in Morocco.
Bridget Kinneer has been practicing ocularistry since 2005 when she opened Advanced Ocular Prosthetics Inc. in the Pittsburgh, Pennsylvania area. A family background in prosthetics and her bachelor of fine arts degree from Penn State University prepared her with the unique skill set needed to make the most comfortable and cosmetically pleasing artificial eyes, all while giving her patients the utmost compassion and respect. Bridget thrives on problem-solving the most complicated cases and the special touch that is needed with her pediatric patients. She also enjoys camping, hiking, yoga and road-tripping with her husband, three boys and three dogs.

Camille Loyer, COO Intern
Melbourne, Australia
Camille.loyer@gmail.com

After completing her high school education, Camille commenced Architecture studies for several years. She later realized her true calling was to work as an Ocularist, and for the last 6 years has been working with her father, Patrick Loyer, in Melbourne, Australia. I am passionate about my work with children who have Anophthalmia and Microphthalmia as well as creating the form of an Artificial Eye that responds to natural curves in the eye and forces in the eye socket.

Jason Ross, MD
Orlando, Florida

Born in Auburn, New York, Dr. Ross graduated from the United States Naval Academy and became a navy physician. He served on an aircraft carrier and a hospital ship during his tenure. His residency in ophthalmology was at the National Naval Medical Center in Bethesda, MD. After fellowship at the University of Cincinnati, he became the Oculoplastic Surgeon for the US Navy at San Diego, where he trained residents in ophthalmology. He is currently in private practice in Melbourne, FL.

Paul Tanner, CCA
Salt Lake City, Utah
Paul.tanner@customdme.com
Paul Tanner became interested in facial prosthetics as a teenager when a relative lost an ear while being treated for cancer. As an artist with a fascination in science, Paul consumed nearly everything he could on Anaplastology. It became a passion and dream that has lived on to this day. Paul loves to learn and is excited to join the COO this year and hopes to make meaningful contributions to ocularistry.

Jean Thompson, BCO, BADO, FASO
San Antonio, Texas
txeyejean@aol.com

Jean joined ASO in 1994 and has served on the Education & Regulatory Committees. She served as Co-Chair of Education from 2003-2006. Jean also served on the Board of Directors of NEBO as a Board Member, Co-Chair and Chair from 2006-2014. She became a Fellow in 2011 and was one of the original faculty members of the ASO College of Ocularistry. She is now COO Dean of Students.

Chelsea Webb, Diplomate
Toronto, Ontario, Canada
chelsea@webbocular.com

Chelsea is a third generation Ocularist at Webb Ocular Prosthetics in Toronto, Ontario. Chelsea graduated from Georgian College in 2017 with a Diploma of Business Entrepreneurship, and was also the recipient of the Dale George Premier's Award for her graduating class. Chelsea has also Graduated from the College of Ocularistry in Spring 2022, and was the recipient of the Joe Legrand Award. Chelsea is a competitive Bass Angler and enjoys competing in fishing tournaments during her free time.
Michael Webb, BCO, BADO, FASO
Toronto, Ontario, Canada
webbocular@msn.com

Michael entered the family business in 1980 apprenticing under his father Cecil F. Webb. Michael has trained a variety of apprentices and certified ocularists over the last 37 years. Presently, he is training a third generation of Webb ocularists, his daughter Chelsea. Michael currently provides ocular prosthetic services to three offices in Ontario, Toronto, Kingston and Thunder Bay. Michael had been on the Board of Directors of the ASO and has been President of the Canadian Society of Ocularists several times. Michael has been involved with the ASO by giving lectures at the conferences and by writing an article for The Journal of Ophthalmic Prosthetics.

Savanah Wilt, COO Intern
Chesapeake, Virginia
savanahwiltocularist@gmail.com

Savanah Wilt studied art with a concentration in portraiture and was program coordinator of a local nonprofit. She was granted an internship with LeGrand Associates in 2018 and would like to thank her colleagues for their investment in her learning. In addition to her future in ocular prostheses, Savanah will also pursue anaplastology.
The Education Program for the ASO Mid-Year Conference includes the Thursday schedule for courses conducted for the College of Ocularistry, as well as the ASO Education Program. College courses are noted in burgundy print and are open only to Interns currently enrolled in the College of Ocularistry.

2023 Mid-Year Conference
Disney’s Coronado Springs Resort, Walt Disney World
Orlando, Florida
May 4-7, 2023

Thursday, May 4, 2023

8:00am – 9:00am  ASO College of Ocularistry Intern Registration & Breakfast

9:00am – 11:00am  COO Workshop 7015W: Fitting and Fabrication Concerns for the Scleral Shell
Presenter: William “Willie” Danz, BCO, BADO, FASO
This workshop will involve participation in a painting technique for thin scleral shells. The process will begin with a thin white blank PMMA scleral shell which will be prepared by the participant for applying the base iris color in artist’s pencils. The base iris color will be accomplished using artist’s pencils, a circle template, and the use of a scratching method. After sealing the base color with monopoly, pigments with monopoly will be added to create the various anatomical parts of the iris.

Materials to Bring: 1” x 2” 220 grit wet/dry sandpaper, #11 scalpel blade with handle or similar sharp pointed metal instrument, paint brush for painting scleral shell, pigments normally used for painting the iris. The white blank shells and monopoly will be provided.

11:00am – 3:00pm  ASO Board of Directors Meeting

11:00am – 1:00pm  COO Lunch on Your Own

1:00pm - 2:00pm  COO Lecture Course 7008: What’s Happening Here? Socket Evaluation
Presenters: Monica Erickson, BCO, BADO & Jean Thompson, BCO, BADO, FASO
This course will explore the intricacies of socket evaluation. Interns will learn
how to identify landmarks in the socket and create strategies to deal with challenges presented. Some structures are obvious in the socket and can be identified easily. There is also an array of more subtle, textures, scars and shapes the socket takes that are of equal importance to account for when creating your fitting strategy. Interns will also learn to make judgments about whether to proceed with fitting a prosthesis or have the patient be referred back to their physician.

2:00pm – 2:30pm  **COO Break**

2:00pm – 5:00pm  **ASO Education Committee Meeting**

2:00pm – 6:00pm  **ASO General Conference Registration**

3:00pm – 5:00pm  **COO Workshop Course 7010W: The Advancement of Fitting and Fabrication Tools, Materials and Their Uses**
Instructor: Michael Barrett, BCO, BADO

*This workshop will involve the sculpturing of a regular prosthesis and scleral shell by the participants. There will be a demonstration on how to position the iris and gaze as well as how to achieve the required thickness of the prosthesis or shell that has limited thickness.*

*Materials to Bring: Painted Iris button with a peg on it, one sheet of pink base plate sculpturing wax, #11 scalpel blade with handle, several sheets of paper towel of your choice for smoothing the wax sculpture, a fine tip black marker.*

*The instructor will bring heating tools to soften the wax and a tool to help position the iris. Cold water and container (paper cup) will be at the meeting to help cool the sculptured wax for sculpturing and smoothing.*

6:30pm - 8:30pm  **Welcome Reception**
Sponsored by OCuSoft®

**Friday, May 5, 2023**

8:00am – 11:00am  **Registration Continues**

8:00am – 9:00am  **Light Breakfast**

9:00am – 9:10am  **Welcome & Announcements**
ASO President David Gougelmann, BCO, BADO
Program Co-Chairs: Edwin Bullard, BCO, BADO & Bridget Kinneer, BCO
Workshop 708: Ptosis Correction (Lecture Portion)
Instructors: Cameran Hadlock, BCO, BADO & Chelsea Webb, Diplomate

Workshop 708W: Ptosis Correction (Hands-On Portion)
Instructors: Cameran Hadlock, BCO, BADO & Chelsea Webb, Diplomate
This course and workshop will explore 2 various styles of addressing ptosis issues with the upper lid. Often this is a challenge for custom eye makers because there are specific areas involving the anatomy of the eye socket that must be respected. You will be able to apply hands on application of these 2 styles in an effort to improve a better cosmetic symmetry of the prosthetic eye when compared to the companion eye.

Materials to Bring: You will need 2 full size wax shapes of an eye prosthesis. The shapes need enough A/P thickness and vertical height to allow for 12 mm of space above projected iris location. You will need to bring any wax sculpting tools you normally use in your office i.e., safety glasses, boley gauge for measuring, ruler, carving knife. All necessary materials will be supplied at the conference.

Course 749: Illuminant Metamerism
Presenter: Paul Tanner, CCA
Color matching is crucial to a prosthesis that patients are proud to use. How we perceive color has to do with the light source, the materials and pigments, and lastly the observation of color. These three components to color matching and perception will be discussed.

Afternoon Off to Enjoy the Disney World Parks

Saturday, May 6, 2023

8:00am - 9:00am
Light Breakfast

9:00am – 9:30am
Workshop 918W: Cosmetic Optics (Lecture Portion)
Instructor: Hank Freund, BCO, BADO & Jim Strauss, BCO, BADO, FASO

9:50am - 10:50am
Workshop 918W: Cosmetic Optics (Hands-on Portion)
Introduction: James Strauss, BCO, BADO
Instructor: Hank Freund, BCO, BADO
This discussion with some hands-on application will give much insight into the potential use of cosmetic optics to achieve the best possible cosmetic look over a complicated eye socket. With various uses of eyeglass lenses representing different strengths, it is possible to create an illusion of reshaping the image of the eye socket behind the lens. Anyone who is currently using lens kits for cosmetic optics in their offices and would be
willing to bring them for the workshop would be very helpful. We will have a few kits available but any additional would make the workshop flow more easily.

9:30am - 10:30am

**COO Course #9007: COO Open Group Discussion Workshop**

This session is an open group discussion where interns can bring up challenges they currently face in their education of ocularistry. Interns are given the opportunity to discuss with each other and with the College faculty any topic or situation where they need help or guidance. This could be anything from technical questions about fitting or fabrication techniques to practice issue such as suggestions on dealing with challenging patient personalities. Please bring your questions and ideas to the table! If an intern has a specific case, they can bring photos or even duplicate shapes and molds to share with the group and brainstorm solutions. This is an open forum group discussion to give interns free time that is focused on discussing the nuances of ocularistry.

11:10am - 12:10pm

**Course 777: The Superior Sulcus Defect**

Speaker: Jason Ross, MD

Superior sulcus defect is a nearly universal problem in patient’s with acquired anophthalmos. This problem is co-associated with decreased orbital volume. There are times when it is appropriate to maintain this anatomic state. The importance of blink and levator function cannot be over stated. Ideally, treatment attempts to maintain optimal prosthetic coverage, maximize blink, and prevent lagophthalmos. Specific procedures to address superior sulcus defect will be detailed. In each case, advantages and disadvantages will be reviewed. Finally, ocularist options to help superior sulcus defect, often in conjunction with surgical procedures is often the best combination for the patient. As a result, communication between the ocularist and the orbit surgeon is essential.

12:10pm

ASO Golf Tournament, Pen World, or, take the afternoon to enjoy the theme parks

**Sunday, May 7, 2023**

8:00am - 9:00am

**Light Breakfast**

9:00am – 10:00am

**Course 715: Reconstruction of the Conjunctival Socket Using Compression Conformers**

Presenter: Fouad Karama, MD

Faced to eye socket retraction, the "prosthetic challenge" is transformed into a "therapeutic challenge" which consists of enlarging the conjunctival socket, particularly the lower fornix to serve as a support for the prosthesis. If we understand better the mechanisms of retraction and expansion, we will have satisfactory prosthetic results. For the good management of
retracted cavities without surgery, it is necessary to master the clinical examinations as well as the appropriate medical monitoring.

10:00am – 10:30am

**Refreshment Break & Exhibitor Presentations**

10:30am - 12:00pm

**Course 714: Pediatric Fitting with Panel Discussion**
Moderator: Bridget Kinneer, BCO
Panel Members: Joseph LeGrand, Jr., BCO, BADO, FASO, Michael Webb, BCO, BADO, FASO & Rebecca Erickson, BCO, BADO

This course is a panel discussion on the unique problems for the ocularist when working with children and babies. The panel of experts with decades in the field will discuss their views on topics like when to place an implant in children with congenital anophthalmia and how they decide when a patient is ready for a painted shell during socket expansion therapy.

12:00pm – 1:30pm

**Lunch on Your Own**

1:45pm – 2:45pm

**Course 772: Impression Over a Complicated Eye Socket**
Presenter: Jonathan Brett, BCO, BADO

Sockets can be fickle things, often times there are one or more hurdles the ocularist must clear to achieve a good result. Today I will be touching on some socket complications you may encounter and suggesting ways to achieve a useful impression.

2:45pm – 3:00pm

Break

3:00pm – 4:30pm

**Course 830: Student Lecture Workshop**
Moderator: Jean Thompson, BCO, BADO, FASO

1. Savanah Wilt, COO Intern
   **Adaptations of the Impression Tray**
   Are you missing the perfect impression tray? A multitude of impression tray making techniques will be discussed, with a focal point on the wax impression tray. Empirical carving combined with the Modified Impression is a common fitting approach at LeGrand Associates- perhaps this fitting technique will find a place in your repertoire!

2. Andrew Etheridge, COO Intern
   **Creating a Digital Workflow for Oculo-Orbital Prostheses**
   These clinical cases report on the implementation of a digital workflow for the Anaplastologist/Ocularist in the treatment of oculo-orbital prostheses. The presentation will highlight patient intake, 3D modeling, 3D printing, diagnostic fitting, ocular/orbital fabrication, and final extrinsic characterization.
3. Camille Loyer, COO Intern

**Autonomy not Symmetry**

As Ocularists we strive for symmetry in our work. However there are times where this shouldn't be our goal. Patients have the right to self agency and autonomy, which includes making decisions about how their prosthesis looks.

4. Kaylee Dougherty, ASO Associate

**Painting Techniques: Alternative Options to a Standard Iris Button**

While a standard iris button works very well in the fabrication of an ocular prosthesis in most cases, there are times that an alternative option is desirable or necessary - typically when the ocular or shell is less than 3mm thick, or at an unusual angle. This talk will explore a few different ways to paint an iris into an ocular prosthesis or scleral shell without utilizing a standard painted button.

5. Tawnya Cranmore, COO Intern

**Strategies for a Patient with Poor Tear Film or Dry Eye**

This lecture will offer strategies for a patient who is experiencing poor tear film or dry eye. Explanations of tear film and dry eye will be presented with suggestions to help a patient navigate these difficult scenarios.

6. Kimberly Robles, COO Intern

**The Perfect Storm!**

This talk will discuss the different types of problems that can stir up dryness while wearing a prosthetic, as well as solutions to dryness that we recommend in our practice.

7. Erika Hedtke, COO Intern

**Utilizing Eco-Friendly and Sustainable Practices at Work**

We are going to take a look at various recycling options for the workplace, challenges small businesses may incur, and opportunities to implement more sustainable practices.

8. James Bowen, COO Intern

**The Right Light**

This presentation discusses using appropriate lighting in prosthesis painting areas that may contribute to color matching quality. The talk would give some background on the mechanics of light, and current technologies available that may improve color matching ability for an Ocularist.

6:00pm - 7:00pm  Reception and Silent Auction to support the College of Ocularistry and the ASO Education Program

7:00pm - 10:00pm  ASO Banquet
Course 708: Ptosis Workshop

- Ptosis steps:
  1. Remove material from the superoanterior aspect of the prosthesis at approximately 11.5mm from where the lower edge of the upper tarsus would cross the iris.
  2. Add material over the upper corneal–limbal area of prosthesis, blending this gently into the surrounding areas.
  3. Add an extension of material to the superior margin of the prosthesis, extending posteriorly and superiorly and across the horizontal length of the superior margin.
  4. Extend downward from approx. the lower limbal area in a perpendicular fashion a minimum of 3mm., then blend the additional material into the inferoanterior aspect of the prosthesis.

- The Key: Eleven and one half millimeters.
• Adding material over the upper corneal surface will help deflect the lid upward.

• Extending the upper margin of the prosthesis posterosuperiorly will buckle the Levator muscle and use more conjunctiva thus helping to raise the upper lid.
• The Key: Three millimeters and a vertically perpendicular shape.

• A Review of the four Ptosis fitting principles.
Course 749

Illuminant Metamerism

Paul Tanner
(I have no disclosures for any of the products mentioned in this presentation)
ASID Mid-Year Meeting May 6, 2003

What is Metamerism?

Metamerism is a phenomenon in which two objects or surfaces with different physical properties appear to have the same color or shade under certain lighting conditions. This is because they reflect light in a similar way, even though their physical properties may differ.

Source: Chat GPT 3; Accessed 3/29/23

How many of you have noticed metamerism when making eyes?
Dynamic Relationship with Color and Translucency in Anaplastology

Literature on Lighting for Color Matching Eyes

The best position for the bench is where you can use the available light to the maximum. North day lighting is great, but one can’t always have it, so adequate ceiling lights (fluorescent) and a good 3-bulb desk lamp with color corrected fluorescent tubes are good alternatives. You can never have too much light. Please note that with "color corrected" lamps, there may be a little less illumination than with ordinary white fluorescents. Duro-Test or Verd-A-Ray Corporation produce good quality color corrected lamps.

Tanaka, KF. The Oil Paint and Monopoly – Iris Painting Technique, J of ASO, 1986
Color Appearance (Metamerism)

1. Color appearance is determined by the light SOURCE...
2. The composition of the subject (pigments, opacity)...
3. AND color perception by the observer (determined by the diversity and spectral absorption of the cone cells in the eye). Everyone perceives color differently.

Light is Visible Energy

- Visible light
- Ultraviolet (UV)
- Infrared (IR)
- X-rays
- Gamma rays
- Microwave
- Radio waves
- Infrared
- Short wavelengths
- Long wavelengths
Specular Reflectance:
Angle of reflection is equal to angle of incidence

Diffuse Reflectance:
Light is reflected at all angles due to the uneven or textured surface
Refraction of light through “clear” substances

Refraction index: the inverse ratio of the phase velocity of a wave phenomenon such as light or sound and the phase velocity in a reference medium. Changes in the direction and speed of the wave.

- Refraction of water: 1.33
- Refraction of stratum corneum: 1.51
- Refraction of skin (average): 1.36-1.5
- Refraction of silicone: 1.416
- Refraction of PMMA: 1.4663
- Refraction of silicone w/ pigments: 1.4 < ?


Absorption: Heat energy or radiant energy
Beer-Lambert Absorption Law
Refraction: The different frequencies in light cause the energy to disperse when subject to a change in the refractive index.
Color Blindness Test
Color Accuracy Deficiency (found during Pubmed literature review)

- Occipital Lobe Trauma
- ADHD
- Autism Spectral Disorder
- Parkinson’s Disease
- Diabetes
- High Elevation
- Fatigue/Sleep Deprivation
- Macular Degeneration
- Age (yellowness of cornea)
- Neurotoxins (toluene & other organic solvents)
- Carotenaemia
- Epilepsy Drugs
- UV light exposure
- Narcotics use (cocaine)
- HIV
- Intraocular lenses
- Caffeine & oral contraceptives combo
- Multiple Sclerosis
- Sickle Cell Anemia
- Alcohol consumption
- Albinism

Color Accuracy Improvement

- Ovulation (sorry men!)
- Tetrachromatic women
- Creative thinking / imagination association
- Repetition of the task (good news!)
- Time
Color Discrimination Tests


Color Discrimination Score

My Results

Score: 0
Gender: Male
Select Age Range: 40-49
Best Score for your Gender: 1800800
Worst Score for your Gender: 170045439

About your score: A lower score is better, with zero being a perfect score. The circle graph displays the regions of the color spectrum where your hue discrimination is low.
How are artificial eyes physically different from human eyes?

1. Surface Texture (this affects surface reflection)

2. Density of clear structures (this affects light refraction)

3. Matter/Pigments (this affects how light is absorbed, transmitted, or reflected/remitted)
Spectral Signatures of Colors
Color Appearance (Metamerism)

1. Color appearance is determined by the light SOURCE...
What lights should Ocularists use to minimize metamerism?

Metamerism

Illuminant Metamerism

Observer Metamerism
Natural Light

Natural Sunlight

- Ultraviolet (UV)
- Visible Light
- Infrared (IR)

Wavelengths:
- 400 nanometers
- 500 nanometers
- 600 nanometers
- 700 nanometers

Cosmic rays
Gamma rays
X-rays
Ultraviolet (UV)
Infrared (IR)
Microwaves
Radio
Broadcast band
Sunrise

This also explains why the sky is blue
How time of day affects SPD

Twilight

Sunset

Where you are in the world will determine the SPD

43

44
Color Rendering Index for Artificial Lights

CRI - Color Rendering Index
• Defined by the (CIE) International Commission on Illumination (1913)
• Based on black body irradiance using an incandescent light source for CCT <5000K. For CCT >500K, D65 illuminant is used.
• $R_s$ scale of 0-100. A CRI of 90+ is desired for anesthesiology and oculartistry.

Broad and Even Spectral Power Distribution

CTT (Correlated Color Temperature) ≠ Color Accuracy

Courtesy: http://www.atlantilightbulb.com/color-temperature-scale/
If we want prostheses to match the adjacent skin or eye color in all lighting, we need to color prostheses under lights with a BROAD and EVEN spectrum.
Illuminant Metamerism
Ocean Optics USB2000 Spectrophotometer

Spectral Curve of the Sun
Direct Sun vs. North & South Light

Blue/Emerald Tinted Windows
Incandescent (Tungsten Halogen) 2680K
CRI 100 for lights less than 5000K

Compact Fluorescent 3000K
CRI 51
Fluorescent tube 4100K
CRI 64

D65 Fluorescent 6400K
CRI 76 but used for color matching >5000K
Screw in LED (Sylvania 2700K)
80 CRI

High CRI LED (Hyperikon BR40 - 2700K)
CRI 93
High CRI LED (Hyperikon BR40 - 3000K)
CRI 92

High CRI LED (Hyperikon BR40 - 4000K)
CRI 94
High CRI LED (Hyperikon BR40 - 5000K)
CRI 96
Compilation of LED and Incandescent

How many of you want to change your lights?

Course 749: Illuminant Metamerism
"LENSES FOR ARTIFICIAL EYES"
Occasionally the appearance of an artificial eye can be improved by the optical effect of the spectacle lens in front of it. The magnifying effect of plus spheres, the minifying effect of minus spheres and the meridional effect of cylinders is useful to change the apparent aperture of the lids. Although the effect is calculable, an easier approach is to hold trial lenses before the eye until the best effect is produced. Oftentimes -3.00 x 180 reduces the stariness of a new fitting.” Stimson (516)

The workshop will consist of trying different lenses under different scenarios and judging what the optimum lens power would be to achieve the best cosmetic effect and then communicating that to the optician.

The lecture will give you the tools to succeed in the workshop and to help you communicate with the optician!

Lens Principles: A lens that has no power is called “plano”. Lenses that magnify are called “plus” and are designated by a + sign. Lenses that make things smaller are called “minus” and are designated by a – sign.

An axis is a meridional designation. Think of a protractor going from 1 to 180 degrees. On the right eye the zero is toward the nose. On the left eye, the 0 is toward the ear. For our purposes we are only using the
horizontal or vertical. In optical lingo, we usually do not say or write degrees. So, horizontal is called 180 and vertical is called 90.

Lens prescriptions are now written in spherocylinder form. This consists of a + or – sphere (or plano), a + or – cylinder and an axis. 100% of the sphere power is in all meridians. 100% of the cylinder power is only in one meridian and that meridian is 90 degrees from the axis. The cylinder gradually decreases in power the closer it gets to the axis where there is zero cylinder power. The axis and 90 degrees from the axis are the principal meridians.

Let us analyze at the Stimson example. Today, most doctors would write that as:

Plano – 3.00 x 180

This means that in the 180th or horizontal meridian the lens power is zero as none of the cylinder power is combined with the sphere power in the meridian of the written axis. The power in the 90th meridian is -3.00. (the algebraic sum of the sphere and cylinder powers) The minus sign means minifying. This would make the prosthetic eye look slightly smaller in the vertical meridian.

Another example:

+1.50 -4.00 x 180

The power in the horizontal meridian is +1.50. What is the power in the vertical meridian? We must combine algebraically the sphere power which is in all meridians with 100% of the cylinder power. Since the vertical meridian is 90 degrees from the axis in this example, we will combine the full cylinder power of -4.00 with the sphere power of +1.50. Therefore, the power of the lens in the vertical meridian is -2.50.

Try this on your own. What is the power in the 135th meridian of:

-6.00 + 2.25 x 45   Hint: How many degrees is it from 45 to 135?
The optical cross is a way of analyzing the powers in the principal meridians. The 2 lines are 90 degrees apart. We would plot the total lens powers in the principal meridians. What are the total lens powers in the principal meridians of a Rx +1.25 - 8.00 x 180?

\[
\begin{array}{c}
+1.25 \\
\end{array}
\quad \begin{array}{c}
-6.75 \\
\end{array}
\]

Can we do the reverse? Of course! We can take the lens cross with the powers plotted in the principal meridians and figure out the lens power is spherocylinder form.

\[
\begin{array}{c}
-2.75 \\
\end{array}
\quad \begin{array}{c}
-3.50 \\
\end{array}
\]

Let us start with axis 90. The total power there is -3.50. What do we have to add algebraically to the -3.50 to achieve -2.75. We would have to add +0.75 to the -3.50 to reach the total lens power in the 180° meridian of -2.75. 

\[
\text{Rx} -3.50 +0.75 \times 90
\]

In the above example, what if we started with axis 180. The lens power there is -2.75. What do we have to add algebraically to achieve -3.50 which is 90 degrees away from the axis. We must add -0.75 to the -2.75 to achieve -3.50. Therefore, the Rx is -2.75 -0.75 x 180. Do you see how the same lens power can be written in two different ways. This
is called plus cylinder form or minus cylinder form. Any spherocylinder lens Rx can be \textit{transcribed} to be in plus or minus cylinder form. The process to change the way the Rx is written is to add the sphere and cylinder algebraically. This becomes the new sphere. Change the sign of the cylinder to the opposite. Change the axis 90 degrees. Some doctors do the refraction in plus cylinder form and some in minus form.

The Balance Lens. When a patient is sighted in one eye only, the doctor may write "Balance" for the unsighted eye Rx. Over 100 years ago when people had cataract surgery, there were no implanted lenses and the resulting Rx was usually in the $+12.00$ to $+16.00$ diopter range. The lenses were made of glass and very heavy. The balance lens would be needed to balance the weight so a lens of equal power would be provided. The term is still used today although there is more latitude in altering the Rx in front of the unsighted eye because of lighter weight materials and thinner lenses.

Static vs. Dynamic. It is important when utilizing cosmetic optics to not just analyze the prosthetic side (static analysis). It is important to analyze the sighted side in conjunction with the prosthetic side (dynamic analysis).

Frame Selection. A plastic frame with a narrower vertical measurement is often better than a metal frame with a deep vertical measurement. The thicker rim can conceal deformities of the superior lid better.

Tint. A light flesh toned tint blended into the top of the lens creates a shadow that helps to hide disparities between the eyes.

Anti-Reflection Treatment. This is a process that allows a lens to transmit more light. It is useful visually in low light environments, especially driving at night. If not needed, the reflections off the lens help to conceal defects.
Prism. We often see where one orbit is displaced inferiorly when compared to the other side. A base down prism helps to give the illusion the eyes are on the same plain.

Vertex Distance. The distance between the posterior apex of the eyeglass lens and the apex of the cornea. Changes in this distance can affect the perceived magnification.

Ptosis Crutch. This is a wire attached to an eyeglass frame for the purpose of correcting blepharoptosis.

References


Freund Sr., William H., Coated Lenses, *Guildcraft, XIX*, 1962

Exercise. Write each of these in both + and – spherocylinder form.

\[
\begin{align*}
\text{+3.75} & \quad \text{+1.25} \\
\text{+0.50} & \quad \\
\text{+4.75} & \quad \\
\end{align*}
\]
Course 715

Reconstruction of the Conjunctival Socket using Compressor Conformer, by Faroud Karama, OD was too large to fit in this workbook. [Find it at this link]
For those who don’t know me...

- I am Canadian eh
- My recommendations don’t factor in financial conditions
- Winnipeg and London, see ya never.
- Please jump in at any point
Start with a definition: The easy impression

- What is an ideal impression?
- An experienced patient
- A calm socket
- Using “Ol’ reliable”

Possible complications?

- Sutures in the socket
- Exposed implants
- Thin tissue
- Orbital symblepharons
- Tissue entrapment
- The patient
What issues could arise from an impression?

Impression material introduced to a complicated socket can cause:

- Tearing of tissue
- Rupturing of sutures
- Invasion of the implant or orbital cavity
- Trauma to the patient
- Can result in surgical intervention

Impression is not a GPS

- The impression is a roadmap, not a GPS. It can show you the way to a good result, but it cannot tell you exactly how to get there. You must decide.
Important to note

- Impression is not the only option
- In many of these examples an empirical fit would yield equal results
- Oftentimes empirical fitting is a better option for the problem set

How do we ensure a good impression?

- Develop and follow a procedure!
Alginate or Polyvinyl Siloxane?

Steps to taking a great impression

- Discuss
- Examine
- Impression
1. Have an open discussion with the patient

- Show and explain everything about the impression!
- This can be very time consuming. But is the most important step.

2. Conduct a thorough examination of the socket

<table>
<thead>
<tr>
<th>Examine</th>
<th>Examine in all gazes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note</td>
<td>Note anything that does not look “normal”</td>
</tr>
<tr>
<td>Default</td>
<td>If you notice something, default back to step one</td>
</tr>
</tbody>
</table>
3. Select an impression tray

- You should have a mental map of the socket
- Looking for that goldilocks tray
- Don’t worry too much about comfort at this point

4. Take the impression

- DO NOT OVERFILL!
- REMIND PATIENT NOT TO SQUEEZE
- USE THE RIGHT TEMPERATURE MIX
- WATCH OUT FOR AIRPOCKETS
5. Carefully remove the tray

1. Don’t just yank it out
2. Free the lashes
3. Release the impression

6. Final examination

Examine the impression to ensure you captured all noted anomalies and left nothing behind
Examine the socket, it might be a little red!
We all do things a little different, but having a plan is the key to success
Exposed Implant

- Most common with Hydroxyapatite or other porous implants
- Taking an impression is risky, but can be done safely
- Always involve a surgeon
- In cases where the socket and exposure are calm it is possible to take an impression
Impression over exposed implant

- Verify the exposure
- Secure the exposed area
- Proceed with impression as usual
- Capture the exposure
- Verify that nothing was left behind

Thin Tissue

- Taking the impression introduces hydraulic pressure into the socket
- This pressure can cause a tear in the tissue or “blow out” the tissue and force impression material into unwanted areas.
- The solution here is to take a "low pressure" impression
- Not as accurate, but much safer!
Prepare the device

Deliver the material
Insert the device
The difficult patient

- I am confident we have all come across one of these
- Remain calm
- Respect that coming to our office could be traumatic
- You are there for them, even if they are not ready

Sensitive Socket

- A different sort of difficult patient
- Probe the socket for sensitivity
- Determine if it is just general sensitivity
The secret sauce

- Proparacaine Hydrochloride, a topical anesthetic
- Requires a prescription
- Avoid if you can
Orbital fistula

- An opening or hole within the eye socket leading to another cavity
- Commonly caused by surgery, trauma and radiation therapy
- Relatively easy to spot
- Really highlights why it is so important to examine the socket before taking an impression!
Impression entrapment

Orbital Symblepharon

- Similar to the fistula, but lower risk with impression
- Typically occur in the periphery of the socket
- Scar tissue can fuse structures as it develops
- Can be avoided with a conformer
- Sockets with radiation or chemical burn are much more at risk of developing multiple symblepharon
Ocular Symblepharon

- Appears as a band of tissue that restricts the socket
- This type of adhesion can be easily impressioned with a modified tray

- They’re like a rubber band, they push back
- Modifying the tray similar to this allows support in the socket and room for the adhesion
Orbital Symblepharon

- Some adhesions are not fully connected to the conjunctiva

---

granuloma

- Comes in all shapes and sizes
- Can be a connected lump, or a flap
# Sutures

<table>
<thead>
<tr>
<th>Internal</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Another possible entrapment from undissolved sutures</td>
<td>• Have you experienced a patient with a tarsorrhaphy?</td>
</tr>
<tr>
<td>• Could cause a wound dehiscence</td>
<td>• Get direct confirmation!</td>
</tr>
<tr>
<td>• <a href="https://www.youtube.com/watch?v=LB3rfKpIk0M">https://www.youtube.com/watch?v=LB3rfKpIk0M</a></td>
<td>• Proceed with best practice</td>
</tr>
</tbody>
</table>

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**Thank You!**