Patients commonly present wondering why they can’t see with their multifocal contact lenses. This is a dilemma patients, practitioners, and manufacturers have struggled with for years.

In an effort to compensate for the eye’s natural ability to accommodate, manufacturers have chosen to utilize simultaneous optics that attempt to correct for distance, intermediate, and near vision. The simultaneous optics design of bifocal contact lenses represents the overwhelming majority of available contact lenses on the market today for patients with presbyopia. Although these contact lenses allow both distance and near vision, they do so through a means in which the patient may not be accustomed.

Figure 1: Pupil size decreases with age.

It is important that manufacturers and clinicians recognize anatomical obstacles that directly impact the optics of these lenses, including pupil size and line of sight.
Pupil Size

The aging eye undergoes many changes that present significant challenges to successful delivery of simultaneous multifocal optics. One of these changes is pupil size. With aging comes a phenomena known as senile miosis, an age related decrease in pupil size and dynamics (Figure 1 and Table). At age 20 years, the average pupil size in daylight is 5.0 mm. By age 50 years, this is reduced to 3.5 mm. Of course, the only optical images available to the patient will be those presented over the pupil. Therefore, as the patient ages and the pupil size diminishes, it is necessary to provide all of the distance, intermediate, and near multifocal optics within the center 3 to 4 mm of the contact lens. This is a significant power distribution within a small area.

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Pupil Diameter in Daylight (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>5.0</td>
</tr>
<tr>
<td>40</td>
<td>4.0</td>
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<tr>
<td>50</td>
<td>3.5</td>
</tr>
<tr>
<td>60</td>
<td>3.0</td>
</tr>
<tr>
<td>70</td>
<td>2.5</td>
</tr>
<tr>
<td>80</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Line of Sight

Perhaps the greatest obstacle to the effective delivery of multifocal optics is the position of the line of sight. Humans do not see through the center of our pupil but instead must view objects 3 to 11 degrees nasally, a measurement known as angle lambda (Figure 2). Additionally, angle lambda may change as the pupil size changes.

*Figure 2: Difference between the center of contact lens optic (yellow circle on upper images, green dot on lower image) compared to the line of sight (red circle on upper images, red dot on lower image).*
Multifocal Contact Lenses (continued)

At Pacific University we conducted a study to visualize the optical placement of traditional soft multifocal contact lenses as it relates to the patient's visual axis. All eyes in the study had normal corneal curvatures (range 42.50 – 44.50 D), normal horizontal visible iris diameters (range 11.6 – 12.0 mm), and less than 1 D of corneal astigmatism. Figure 3 shows the geometrically centered soft lens optics (yellow ring) and a patient's actual line of sight (pink ring). All of the soft lenses depicted were centered when evaluated using the slit lamp. However, the patient’s line of sight was consistently displaced nasally.

With the combination of nasal displacement of the visual axis and age-related decrease in pupil size, it is clear that resulting optical aberrations of simultaneous multifocal optics present a challenge to the aging optical system. These findings should heighten awareness of the eye care practitioner’s need to recognize and attempt to overcome these challenges.

Need for Low Vision Specialists

CHRISTI CLOSSON, OD, FAAO | LOW VISION SERVICE CHIEF

One of the fastest growing areas of need in optometry today is Low Vision. The main reason, of course, can be attributed to the tremendous number of baby boomers. According to AARP, approximately 10,000 baby boomers turn 65 every day.

With age often comes vision issues. The Vision Council states that 1 in 28 North Americans older than 40 years have a level of irreversible vision loss that prevents basic daily living tasks, and the number of people with low vision is expected to double in the next 15 years.

This provides an opportunity to make a drastic difference in these patients’ lives. In every low vision exam, basic goals are the same: increase contrast, control glare, magnify the image, and help patients learn to use their vision more productively.
Professor Bradley Coffey ReWIREs

HANNU LAUKKANEN, OD, MEd, FAAO, FCVD-A | VISION THERAPY SERVICE CHIEF

It is with both sadness and gladness that we report a transition within our Vision Therapy Service. We were saddened that our distinguished Dr. Bradley Coffey announced his retirement, effective May 2017. Despite this huge absence on our Service, we are gladdened by his joy and positive attitude towards the next phase in his development. On behalf of our entire Vision Therapy Service, we offer sincere thanks to Dr. Coffey for all he has done and accomplished for our Service, College, and University. On a personal level, I will miss Dr. Coffey's clinical brilliance, his wonderful laugh, and his extraordinary gift for making every person feel special. In the paragraphs that follow, Dr. Coffey shares personal highlights from his prodigious academic career.

Professor Bradley Coffey began his affiliation with the College of Optometry 40 years ago and has been a member of the optometry faculty for 35 years. The College matriculated the Class of 20/20 this year, and Dr. Coffey took the confluence of these numbers as a sign that it is time to reWIRE and move on to other pursuits.

After graduating from Pacific University College of Optometry, Dr. Coffey entered both private practice and a PhD program at the University of Oregon. Dr. Coffey's PhD mojo waned after a year in the program, and he shifted his attention to a part-time position at Pacific University for a couple years while continuing to build his practice. When a faculty member left the College with short notice, Dean Wid Bleything invited Dr. Coffey to join the faculty full-time on an interim basis. That interim position evolved into a tenured professorship.

Dr. Coffey's career interests have been generally centered on visual performance enhancement — the idea that vision is learned and can be improved through vision therapy or visual neurorehabilitation. He has taught courses in this area, provided clinical supervision of interns in related specialty clinics, conducted ongoing research related to visual performance, and maintained a part-time specialty consulting practice emphasizing sports vision, binocular vision, and visual neurorehabilitation. He created the first year course, Behavioral Optometric Science, convinced the faculty to adopt it into the core curriculum, then taught it for more than thirty years. Many students still recall their personal moments of terror when Dr. Coffey provided them an opportunity to introduce themselves on the first day of class or may recall the secret optometric greeting that was divulged in the course.

Dr. Coffey assisted in expanding the scientific literature during his 16 years as an Associate Editor of Optometry: The Journal of the American Optometric Association. He also helped shape international optometry through presenting continuing education courses in ten different countries. He published widely and especially
Professor Coffey ReWIREs (continued)

enjoyed working with students to complete their thesis research. While cleaning out his office, he counted over fifty different theses involving over eighty individual students.

Dr. Coffey was named a Distinguished University Professor in 2011 and has proudly carried the University mace as University Marshal during commencement for the past seven years, leading the faculty into the commencement ceremony. He is grateful to colleagues and staff in the College and University for enabling a fantastic career filled with excellent memories. Dr. Coffey said that one of the very best aspects of a career in academic optometry is the opportunity to be surrounded by really smart colleagues who are on their own missions of discovery and, at Pacific, are also focused on facilitating the success of fellow faculty members and students.

This culture of collaboration at Pacific is very uncommon in academic circles and is something to be nourished and treasured.

Post-reWIREment, Dr. Coffey anticipates spending more time in the Pilates studio, hiking, studying the changing of the tides at the beach, and hopefully doubling the count on his lifetime bird list.

For local practitioners who have referred patients to Dr. Coffey, you may rest assured that similar expertise remains available at Pacific EyeClinic Portland. Dr. Paula Luke, a residency-trained Pacific graduate who has held faculty positions at Southern California College of Optometry and Arizona College of Optometry, has returned to Pacific and has assumed responsibility for Dr. Coffey’s teaching clinic.

Managing Unexplained Vision Loss

DENISE GOODWIN, OD, FAAO | NEURO-OPHTHALMIC DISEASE CLINIC

One of the most common reasons for referrals to the Neuro-Ophthalmic Disease Service is unexplained vision loss. It is critical to not ignore even the smallest amount of vision loss, as this can have critical implications. Occasionally, some meticulous detective work is necessary to determine the cause of the patient’s symptoms. The extensive workup necessary to localize and diagnose the reason for vision loss can be very difficult and time consuming.

The image to the right is from a 17-year-old female referred to us due to a small missing spot in the central vision of her right eye. She had seen a couple specialists before being referred to us and had been told everything was normal. Visual acuity was 20/20-1 in that eye. Ocular health, including a careful fundus examination, was normal. However, the OCT showed the reason for her symptoms: solar retinopathy. Although there was nothing we could do to improve vision, the patient was very grateful that the referring doctor was persistent in wanting to find the cause of her symptoms. It also gave us an important opportunity to discuss not looking at the sun, to which she later admitted.

At the Neuro-Ophthalmic Disease Service we can aid in determining the cause of unexplained vision loss. If necessary, we can perform electrodiagnostic testing, as well order laboratory testing or neuroimaging. If a systemic disease is responsible, we work with other specialists to best manage the disease. If you would like some input on your patients, don’t hesitate to contact us at 503-352-7300.
OCT Angiography

LORNE YUDCOVITCH, OD, MS, FAAO | MEDICAL EYE CARE SERVICE CHIEF

As technology evolves, optometry evolves with it. Pacific University College of Optometry continues this evolution with the recent acquisition of the ZEISS Meditec AngioPlex™ OCT-angiography (OCT-A) in our Forest Grove EyeClinic.

This technology allows exquisite detail of the retinal and choroidal vasculature, without the need for injection of fluorescent dye. In addition to providing high-definition OCT scans, the instrument can isolate vascular structure on a 3-dimensional level. This allows true separation of retinal and choroidal vasculature analysis, which is not possible with traditional fluorescein angiography. This layered approach to analyzing blood vessels on a detailed level may allow greater identification of subtle pathologies such as retinal microaneurysms, early choroidal neovascular membranes, retinal or choroidal non-perfusion areas, and many other conditions.

Our application of this instrument is just beginning, and plans are to utilize this exciting technology in patient care, research, and education. Please feel free to contact our Forest Grove EyeClinic for more information.

Trouble with Eyelash Growth Serums

TRACY DOLL, OD, FAAO | PACIFIC DRY EYE SOLUTIONS COORDINATOR

The release of the prescription Latisse® sent the cosmetic industry rolling into the realm of serum eyelash enhancement to meet the demand for more aesthetically pleasing eyelashes.

Patients might not be aware that over-the-counter eyelash serums may actually contain synthetic prostaglandins with the same side effects as the by prescription version, including conjunctival hyperemia, skin or iris pigmentation, itching, lash loss, and lowered intraocular pressure. Prostaglandins have also been identified as a potential causative factor for meibomian gland dysfunction, as well as other eyelid anomalies, including thinning of eyelid margins and narrowing of the palpebral fissure.

Identifying a prostaglandin can be difficult. Names of synthetic prostaglandin analogs include isopropyl cloprostenate, ethylcloprostenolamide, methylamido dihydro noralfaprostal, and 17-phenyl trinor prostaglandin E2 serinol amide.

While it is easy to recognize a patient using mascara in a clinical examination, the use of an eyelash enhancing serum may go completely undetected. Most serums are colorless and applied before going to bed. In patients diagnosed with ocular surface irritation and dryness, a conversation about cosmetics and the use of such serums could prove to be enlightening.
Service at Oregon Special Olympics

JP LOWERY, OD, MEd, FAAO | PEDIATRIC SERVICE CHIEF

For the 18th year, faculty, staff, students, and alumni of the College of Optometry provided comprehensive vision screenings for athletes competing in the Oregon Special Olympics at the OSU campus in Corvallis.

Each year, Special Olympics partners with local health care professionals to provide Healthy Athlete screenings during state and international events. The screening groups include Opening Eyes, Special Smiles, Fun Fitness, Healthy Hearing, Health Promotion, and Fit Feet.

Children and adults with intellectual disabilities are at higher risk for many health problems and often experience barriers to health care. The State Games is the perfect opportunity to provide comprehensive health screenings to the approximately 1600 athletes participating in the competitive fun. The Healthy Athletes program has been very successful in detecting health conditions and linking athletes and caregivers to appropriate professionals for ongoing treatment.

The Opening Eyes Program provides a comprehensive vision screening including testing of visual acuity, binocular vision, ocular motility, color vision, intraocular pressure, refraction, and anterior and posterior segment health. Athletes who need updated or new glasses are given a more in-depth refraction and provided with new glasses that are made on site with our mobile optical lab.

This year, four faculty, two alumni doctors, 25 students, four opticians, and several additional helpers provided vision care for over 100 athletes. The new Pacific Eye Van was on site to provide more in-depth testing when athletes required full refraction or further ocular health testing. Many athletes received new glasses or were referred for follow-up care with local optometrists. The screening was a great success and, as always, was a rewarding service learning opportunity for all involved.
Practice Management Tips

CINDI RAPP, RDH  |  DIRECTOR OF CLINICAL OPERATIONS

Performance Coaching – 5 Methods to Achieve Peak Performance

Working with all types of people, across multiple generations, abilities, and skillsets leads us to wear many “hats” as we attempt to bridge gaps and strive for peak performance from those working with us and for us. There are generally five paths that can be taken to support our efforts. Here are the definitions and suggestions for when you might want to exercise your coaching skills.

The Nurturer: All of us need this at some point. It is especially important to nurture the new employee, those moving into a new position, and those that need you to provide growth and development opportunities. Nurturing often means providing insight, direction, shadowing, and support.

The Trainer: Training can be the catalyst for a person embracing and succeeding at added responsibilities. This involves creating a plan, teaching skills, and providing continuous communication. This method often results in increased confidence, self-esteem, and positive morale.

The Counselor: This “hat” is used with those experiencing personal problems or with those with whom you wish to build rapport in order to enhance their growth and success. To counsel, one should be prepared to provide advice, show empathy, identify obstacles, and offer options for overcoming problems that are preventing quality and productive performance.

The Confronter: When confronting, be respectful. Remain focused on possible solutions and positive results. This can be used when counseling has not worked. Remember to separate the issue from the person, clearly instruct the individual toward improved behavior or attitude, and provide both positive and negative consequences.

The Mentor: Mentoring individuals can elevate performance from good to great. This can be a formal program for helping to develop a person by setting clear goals and monitoring progress. Providing support, but not doing it for them, is important when mentoring.

Coaching for success can be done in as little as minutes by providing statements of support or feedback. It can also be a more formal performance development plan by expert trainers. Whichever route you take to achieve peak performance, coaching is time well spent! This is about who you are and how you speak and act as you build towards a trusting, collaborative team environment. It takes work, but the pursuit is worthy of all your effort!

CE Opportunities

September 2017:
- Great Western Council of Optometry; Oregon Convention Center, Portland, OR; Sept. 28-Oct. 1.

October 2017:
- PUCO Homecoming CE; Jefferson Hall, Forest Grove, OR; Oct. 7.

January 2018:
- PUCO Glaucoma Symposium; Willows Lodge, Woodinville, WA; Jan. 6.
- PUCO Island Eyes Conference; Ritz-Carlton, Kapalua, Maui; Jan. 14-20.

April 2018:
- Coeur d’Alene CE; Coeur d’Alene, ID; April 27-28.
Referral Service Contact Numbers

Pacific EyeClinic Forest Grove
2043 College Way, Forest Grove, OR 97116
Phone: 503-352-2020; Fax: 503-352-2261
    Vision Therapy and Pediatrics: Scott Cooper, OD; Graham Erickson, OD; Hannu Laukkanen, OD;
    JP Lowery, OD; Paula Luke, OD
    Medical Eye Care: Ryan Bulson, OD; Lorne Yudcovitch, OD
    Low Vision: Karl Citek, OD; JP Lowery, OD
    Contact Lens: Mark Andre; Tad Buckingham, OD; Patrick Caroline; Amiee Ho, OD; Beth Kinoshita, OD;
            Hannah Shinoda, OD; Steve Turpin, OD

Pacific EyeClinic Cornelius
1151 N. Adair, Suite 104 Cornelius, OR 97113
Phone: 503-352-8543; Fax: 503-352-8535
    Pediatrics: JP Lowery, OD
    Medical Eye Care: Tad Buckingham, OD; Amiee Ho, OD; Jeung Kim, OD; Caroline Ooley, OD

Pacific EyeClinic Hillsboro
222 SE 8th Avenue, Hillsboro, OR 97123
Phone: 503-352-7300; Fax: 503-352-7220
    Pediatrics: Ryan Bulson, OD
    Medical Eye Care: Dina Erickson, OD; Amiee Ho, OD; Michela Kenning, OD
    Neuro-ophthalmic Disease: Denise Goodwin, OD

Pacific EyeClinic Beaverton
12600 SW Crescent St, Suite 130, Beaverton, OR 97005
Phone: 503-352-1699; Fax: 503-352-1690
    3D Vision: James Kundart, OD
    Pediatrics: Alan Love, OD
    Medical Eye Care: Susan Littlefield, OD
    Contact Lens: Matt Lampa, OD
    Dry Eye Solutions: Tracy Doll, OD

Pacific EyeClinic Portland
511 SW 10th Ave., Suite 500, Portland, OR 97205
Phone: 503-352-2500; Fax: 503-352-2523
    Vision Therapy and Pediatrics: Ben Conway, OD; James Kundart, OD; Paula Luke, OD
    Medical Eye Care: Ryan Bulson, OD; Candace Hamel, OD; Scott Overton, OD; Carole Timpone, OD
    Contact Lens: Mark Andre; Candace Hamel, OD; Matt Lampa, OD; Scott Overton, OD; Sarah Pajot, OD;
            Neeru Shore, OD; Steve Turpin, OD
    Neuro-ophthalmic Disease/Strabismus: Rick London, OD
    Low Vision: Scott Overton, OD

Pacific EyeClinic Vancouver
2214 E. 13th Street, Suite 212, Vancouver, WA 98661
Phone: 360-947-3302; Fax: 360-737-2120
    Low Vision Service only: Christi Closson, OD