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An Audacious Goal: Restoring Sight to the Blind

For most of us, sight is how we connect to the world around us. But for the 285 million people around the globe that are blind or visually impaired, the joys and benefits of sight are unattainable. Now, a bold new initiative to restore vision by regenerating neurons and neural connections in the visual system that have been lost or damaged, is underway. In the first round of funded projects, the National Eye Institute (NEI) has committed $87.9 million toward building and testing innovative new ophthalmic imaging systems that will be essential for evaluating new treatments as they are developed. Of those funds, $5.2 million are going to a retinal mapping project led by Austin Roorda, a UC Berkeley professor of optometry and vision science.

The Audacious Goals Initiative brings together scientists from around the country who, specializing in diverse fields of vision science, will work simultaneously toward more than one solution.

“These ambitious projects will give us a window into the visual system,” said NEI Director Paul A. Sieving, M.D., Ph.D. in an NEI press announcement. “Tools developed will enhance the study of functional changes in the retina and optic nerve, in real-time and at the cellular level, and will be indispensable when evaluating new regenerative therapies for eye diseases.”

Dr. Roorda is the principal investigator of the retinal mapping project. He will be working with E.J. Chichilnisky and Daniel Palanker, both professors of ophthalmology at Stanford University, and B. Hyle Park, an assistant professor of bioengineering at UC Riverside.

According to NEI, “the mapping project will enable scientists to stimulate individual neurons and observe other cells as they become active in response. Mapping these intricate signaling patterns will help explain how the retina processes visual information before it is sent to the brain, and will be an important tool for monitoring function in regenerated cells.”

Shown is a human retina with suture optic nerve. (Image courtesy of Lawrence Sincich and Kathy Bruce, University of Alabama Birmingham.)
Breaking the Vicious Cycle of Blindness in Djibouti

Here’s the catch: a person with Diabetic Retinopathy—the leading cause of blindness in working age adults around the world—can still see well when they are in the early stages of the disease. But if they wait until visual symptoms appear to seek help, it’s often too late, and the treatment is unlikely to work. Then as vision becomes further impaired, they blame the treatment for the blindness, which discourages others from seeking treatment. It’s a vicious cycle of blindness.

The solution, explains Berkeley Optometry’s Dr. Jorge Cuadros, is early detection and patient engagement: “If you treat it early, 90% of people can maintain good vision. You can avoid vision impairment.” But in many places around the world—including underserved communities in this country—the screening of diabetic patients is hampered by both a dearth of equipment and clinicians trained to do the assessments. Djibouti, for example, has only two ophthalmologists for the entire country.

With this in mind, Dr. Cuadros traveled to Djibouti, an east African country of 800,000 located on the Red Sea, last year to train a group of nurses and other clinicians to operate a digital retinal camera and to detect Diabetic Retinopathy using a free and non-proprietary software called EyePACS—a program developed by Dr. Cuadros and Dr. Wyant “Tillie” of UCSF.

Dr. Ethan Chorin, founder and director of Perim Associates, the Berkeley-based international policy consultancy that helped introduce EyePACS in Djibouti, says “EyePACS is a great example of technology in service to development. It is simple to use, responds to a widespread need, and empowers local clinicians to do their own screening and treatments, rather than relying on external aid.”

During the initial screening of 140 people, the group found that 64 had some diabetic retinal disease and will need to be counseled and monitored closely to avoid vision impairment in the future, and 20 had severe diabetic retinopathy requiring immediate treatment. For these 84 people, the screenings have likely prevented blindness. But it was too late for 5 of those 20 patients—the disease had progressed so far that treatment is unlikely to help. A devastating reminder that early detection is critical.

In the next phase of the project, Cuadros anticipates that newly trained health care professionals—traveling around the country—will be able to screen 20% of Djibouti’s diabetic population. That’s about 40,000 people. Dr. Cuadros is early detection and patient engagement: “If you treat it early, 90% of people can maintain good vision. You can avoid vision impairment.” But in many places around the world—including underserved communities in this country—the screening of diabetic patients is hampered by both a dearth of equipment and clinicians trained to do the assessments. Djibouti, for example, has only two ophthalmologists for the entire country.

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Bono Aims to Rock Blindness

Bono, lead singer for the rock band U2, and sunglasses manufacturer Revo have partnered to create the “Buy Vision, Give Sight” program. For each pair of Revo sunglasses sold, $—up to a total of $40 million—will be donated by Revo to the “Buy Vision, Give Sight” initiative. The goal of the initiative is to help prevent vision impairment and blindness in more than 5 million people by 2020. Bono was diagnosed with glaucoma 20 years ago, and although he has had access to excellent treatment, the experience inspired him to seek ways increase access to basic eye care for others. “Thanks to good medical care my eyes are okay, but tens of millions of people around the world with sight problems don’t have access to glasses, or even a basic eye test. Poor eyesight may not be life-threatening, but it dramatically affects your life and your livelihood if you aren’t able to fix it,” said Bono in a Revo press release announcing the partnership.

Revo and Bono are partnering with the non-profit Bitten Holden Vision Institute, who believe that sight is a fundamental right for all humans. The group’s mission is to provide sustainable solutions for eye care and end avoidable blindness and vision impairment in under-served communities. According to Revo, the funds collected will help pay for basic eye care services, such as eye tests and prescription glasses, and build stronger eye care services in target communities for the long term by training local people to provide eye care and detect eye disease in their communities.

Bono’s line of sunglasses are now available at the Berkeley Optometry eye clinic.

UP NEXT: Online Education!

Change is afoot at Berkeley Optometry, and one of our most exciting new endeavors is online education. Soon optometrists around the state, country—and even the world—will have access to interactive cases and stimulating courses via the Berkeley Optometry Online Education program. Earning Continuing Education credits is just got a whole lot easier—and more interesting! Coming to a laptop near you in 2016!

This Dean’s a Lifer

The College of Optometrists has invited John Flanagan, Dean of UC Berkeley’s School of Optometry, to become a Life Fellow of the College in recognition of the outstanding contribution he has made to the profession of optometry. Specifically, the award recognizes Dean Flanagan’s contribution to research into glaucoma and diabetic eye disease, and to the development of optometric education in the UK and Canada.

Before coming to UC Berkeley in 2014, Dean Flanagan held faculty positions at the School of Optometry and Vision Science, University of Waterloo, and the Department of Ophthalmology and Vision Sciences, University of Toronto. He was Director of the Glaucoma Research Unit, Toronto Western Research Institute, and a Senior Scientist at the Toronto Western Hospital, University Health Network.

The College of Optometrists is the professional, scientific and examining body for optometry in the UK, working for the public benefit.

Opto Dog!

You are studying for your optics and anatomy classes in the beautiful, cozy, and sunlit Pamela & Kenneth Fong Optometry Library, but your eyes wander every now and then, and you catch a glimpse of two large and colorful paintings of Snoopy, the beloved Peanuts character created by Charles Schulz. You think to yourself: what is Snoopy doing in our Optometry library? It’s a good question—there are no ordinary paintings.

The two lithographs were donated in 2006 by Dr. Pamela Fong ’77, whose generous donation in 2000 helped establish the Fong Library. They were created by artist Tom Everhart, the only fine artist legally authorized to use characters from the Peanuts comic strip. Everhart met Schulz in 1980 and they instantly forged a bond that would become a lifelong friendship. Everhart’s paintings and lithographs have been exhibited worldwide at the Louvre in Paris, Los Angeles, New York, Montreal, Tokyo, Rome, Venice—and at the Fong Library! By JANE POUVARANUKOAH
Ashley’s List  Our Ian L. Bailey Low Vision Resident, Dr. Ashley Katsikos, finds that her patients are reaping huge benefits from both iPhone and Android apps designed to make basic tasks such as reading, getting places, or counting money a whole lot easier. There’s even an app that will show family and friends what it feels like to have low vision! Here’s Dr. Katsikos’ top ten list.

1. KNFB Reader $99.99
   **Having trouble seeing documents? Have KNFB Reader do the work for you!**
   It’s not always convenient to use a powerful magnifying glass like the one being displayed by Dr. Katsikos in the photo above. The KNFB app converts printed text into high quality speech to provide accurate, fast, and efficient access to both single and multiple page documents with the tap of a button on the iPhone. So easy!

2. MedHelper $Free
   **Your personal healthcare assistant**
   Track your prescription medications, treatment, and appointment schedules. Set alarm reminders and log all of your past doses. It’s easy to install and MedHelper is ready to become youragy healthcare assistant.

3. TapTapSee $Free
   **Can’t identify the objects around you?**
   TapTapSee is a mobile camera application designed specifically for the blind and visually impaired. The app uses the device’s camera and VoiceOver functions to photograph objects and identify them out loud for you!

4. CamFind $Free
   **Search the physical world!**
   This mobile visual search engine allows you to search for anything from your mobile phone just by taking a picture.

5. Bigger and Brighter $Free
   **Need a magnifier but on a budget...Bigger and Brighter to the rescue!**
   This application helps you to read small letters by making the images bigger, brighter and clearer with scientific color changing methods.

6. Glucose Buddy $Free
   **If you are diabetic with low vision, this app is waiting to help you stay healthy!**
   Glucose Buddy is a data storage utility for people with diabetes. Users can manually enter glucose numbers, carbohydrate consumption, insulin dosages, and activities. Then, you can view all of your data on a free glucosebuddy.com online account.

7. Vision Sim $Free
   **Having low vision can be frustrating, especially when friends and family cannot relate!**
   For those suffering from macular degeneration, diabetic retinopathy, glaucoma, or cataracts, this app shows people the world through your eyes. VisionSim turns on the camera of the iPhone and filters the lens with distortion that mimics the selected eye condition.

8. Dragon Dictation $Free
   **Stop typing and start speaking!**
   Use your voice to dictate a text message or email, create Facebook status updates or a Tweet, and anything in between—simply speak and see your text content appear. Dragon Dictation recognizes and transcribes your words quickly and easily.

9. LookTel $9.99
   **Count your money the new-fashioned way!**
   LookTel Money Reader instantly recognizes currency and speaks the denomination, enabling people with visual impairments or blindness to quickly and easily identify and count bills. Several currencies are supported including the US Dollar, Euro, British Pound, Canadian Dollar, and Australian Dollar.

10. KnFB Reader $99.99
    **More than navigation, lane guidance, junction views, speed info, pedestrian navigation, and much more!**
    Navigon is worth its price, even next to free apps like Google Maps. You’ll get a more extensive feature set, innovative optional plug-ins, and a more informative display.

---

**Top 10 apps from Dr. Katsikos’ top ten list:**

1. KNFB Reader
2. MedHelper
3. TapTapSee
4. CamFind
5. Bigger and Brighter
6. Glucose Buddy
7. Vision Sim
8. Dragon Dictation
9. LookTel
10. Navigon North America
Through our Eyes

Experience the life and times of Berkeley Optometry students through their (smartphone) lens!

STUDENTS

Jane Pouvaranukoah | CLASS OF 2017

Optobears at the Big Game: Cal vs. Stanford #GOBEARS

Maria Jen | CLASS OF 2017

Yay done with finals, practicals, quals, and hopefully second year!! #wemoreyestears #kidsatheart

Milan Lockhart | CLASS OF 2018

The selfie game at Berkeley Optometry is strong!

Richard Phan | CLASS OF 2018

Whachu know about gonioscopy? #berkeleyoptometry

Milan Lockhart | CLASS OF 2018

Optometry rafting trip! Lots of lasting friendships were made this day.

Jane Pouvaranukoah | CLASS OF 2017

Just ran our first 10K together! Team #EyesEyesBaby

Maria Jen | CLASS OF 2017

Two months ago I saw my first Team Care patient with Dr. Chu, and today, I saw my LAST patient for the semester! This semester is passing by so quickly... #berkeleyoptometry

Richard Phan | CLASS OF 2018

Keratometry... yo mama tree.
A look at the class of 2019, and what they will experience over the course of their four years at Berkeley Optometry.

Class of 2019

Applicants

- 284 Applications
- 124 Interviews
- 69 Students matriculated

Academics

- >3.49 Average GPA in Bio, Chem and Physics
- >4.00-2.75 Overall GPA range
- >351 Academic Average on the OAT
- >3.57 Undergraduate GPA

Student Profile

- 52 In-State
- 12 Out-of-State
- 60 Women
- 9 Men
- 23 Average age

- 1 from China, 1 from Iran, and 3 from Canada

Student Experience

- 440 hours Preclinical Laboratory Training
- 2nd year in program
- 100% Number of students who learn how to do a full eye exam by end of first semester
- 2,500 Individual patient encounters by graduation
- 40% Of grads go into coveted residency slots throughout the US
Josephine Devanbu was a sophomore neuroscience major at Brown University when she hit her head at a dance party two years ago. “I knew I’d hit my head too hard, but I didn’t expect there to be serious consequences,” she says. When she described her symptoms to student health services over the phone a couple of days later, they wanted to rush her to the hospital in an ambulance. “From the beginning, there was a lot of tension between different assessments of what I could and couldn’t do, about what I was and wasn’t up to,” she says now. “I didn’t want to go to the hospital at all. I had a lot of studying to do. Little did I know that I wasn’t going to be doing much coursework for months,” she adds.

Hits to the head—on the athletic field, in the dorm, and on the street—are a common form of student injury. About 500 concussions are diagnosed by the UC Berkeley student health center each year (less than one-tenth of those are suffered by athletes). And yet the injury is notoriously tricky to diagnose and treat. Two UC Berkeley doctors, one a sports physician and the other an optometrist, are deploying the tools of optometry to help bring greater clarity to the field and to ease the way for all students, whether athletes or not, back into their academic saddles.

Concussion symptoms are due to a complex pathophysiologic change in the brain, and at times these symptoms may be subtle, says Dr. Casey Batten, MD, UC Berkeley Head Team Physician, and co-investigator of a new study examining the use of optometry measurements to evaluate mild head injury patients. “Concussions do not entail structural damage, but only functional disturbance,” Batten says. If you’re experiencing profound visual changes, or have other signs or symptoms suggestive of possible swelling or bleeding inside your skull, you may not be concussed but may have another, more serious traumatic brain injury. However, if none of those more salient signs of damage are present after a hit to the head, and yet you are experiencing amnesia, say, or dizziness, nausea, headaches, exhaustion, or confusion, then you may have a concussion, says Batten.

Currently, diagnosis is based largely on subjective patient reports and these range all over the map, often depending on both the extent and the context of the injury, says the project’s other co-investigator, Dr. Jacqueline Theis, OD, FAAO, a Clinical Instructor and previous resident in the UC Berkeley Binocular Vision and Neuro-Optometry clinic. An athlete chomping at the bit to return to play, for example, may minimize his symptoms, while a cyclist hit by a car may feel an equivalent injury more keenly. With this project, the researchers are hoping to employ optometric measurements, currently not a key part of concussion diagnosis, to create a standardized, quantifiable, and portable way to diagnose the shape-shifting disturbance. If the researchers are right, the work will be a major new contribution by optometry to the study and treatment of concussion, a territory pretty much uncharted for optometrists except those specifically treating vision-related concussion symptoms. A standardized vision-based evaluation protocol would be extremely valuable to any medic, sports doctor, military field doctor, or coach who regularly needs to diagnose, evaluate, treat, or advocate for those who have hit their heads, says Batten.
before they incur a concussion. So the first challenge to overcome is a head effects each of the visual pathways involved, but it is
is over. This was precisely when it ended. ‘Although we are a
be possible to tell when recovery is achieved. “We hope to use
focus and the degree of the injury. Just as importantly, it may
kind of problems you detect, it may be possible to infer the
in any of those pathways, it will show up in the patient’s visual
processing in parietal and temporal lobes. If anything is wrong
position of the muscular and neuronal systems. If this system
swelling in the brain, it is likely this system could be affected,”
says Thes.

The Need for Baseline Data

The first step is to get reliable baseline data on normal eye movement patterns, says Thes. Currently, there are a lot of promising studies noting post-concussive changes in vision, but without baseline data, it is hard to verify that these changes are directly from the concussion. At their new, well-scrubbed UC Berkeley Sports Vision Institute, housed in the Simpson Center for Student Athlete High Performance, adjacent to Memorial Stadium, Thes has already conducted baseline screenings on 10% of UC Berkeley’s Division 1 athletes. In coming months she is hoping to screen 300 to 400 more.

The baseline screening, composed of ten simple tests, takes only 12-15 minutes. Thes first checks visual acuity to make sure each subject has 20/20 vision. Most student athletes do. Next, she performs a series of tests that check each eye’s ability to focus—including the gross amount, accuracy, and ability to repeatedly engage and relax focus. After concussion, Thes expects “a fatigue component” to be involved, which would explain why concussed students can get exhausted in class just looking back and forth from their notes to the blackboard.

Some studies suggest that the ability to bring your eyes together, known as convergence, is decreased after a concussion. Using a Bennew Convergence/Attention Accommodation test, Thes moves a small target closer and closer to the subject’s face, recording how much the eyes can converge, and then how quickly they can recover from their break in convergence.

Thes also tests saccadic motor coordination by investigating how the two eyes work together when looking at both distant and near objects. Perceiving a single vision with two eyes is a complex accomplishment requiring coordination of muscles, nerves, and muscles. If this system fails, a patient will have double vision. “If you have injury or
swelling in the brain, it is likely this system could be affected,”
says Thes.

The researchers will also test visual tracking. “To look at something and keep your eyes fixated in one place, a lot of different neurons have to fire,” says Thes. Just by asking a subject to track a visual target moving from side to side she can test multiple pathways in the brain. The neural pathway governing the eyes to move from the middle to the right is different than the one going to the left, or up from the midline, or down, says Thes.

Finally, administering the Developmental Eye Movement Test, Thes first measures how quickly subjects can read numbers listed in vertical columns. Then she times them reading number sequences arranged horizontally, but irregularly interspersed as words would be in a book. “If the subject has trouble with their saccades [rapid eye movements], or has trouble with their larger regression eye movements,” she says, “it will take disproportionately longer for them to do this test than to read the vertical columns. That would indicate binocular vision related eye-tracking problems.”

“We know that, unfortunately, some small percentage of our athletes are going to get concussions while engaged in sports,” says Thes. “If an athlete’s tracking ability changes post-concussion compared to their baseline measurements, it would support that eye-tracking movements are impaired by the concussion. If this is the case, one could argue that it would be unjust to mandate someone with a concussion to be expected to participate with the same scholastic rigor as they did pre-concussion.”

“Currently, optometry doesn’t play a role in concussion management,” Batten says. “Yet the literature shows that a multidisciplinary approach in evaluation is the way to go. You can’t just do vision symptom scores only, or balance tests only, or computer tests only. You need to assess multiple domains, and standardized visual tests could prove to be vital.”

In addition to developing techniques for better identifying and quantifying the severity of concussions, Thes and Batten also hope to develop methods and practices for helping athletes, and other students, make the smoothest possible transition back to their studies.

“In the past, the majority of focus has been on creating student athletes to play sports,” says Batten. “But we’re finding that concussion can have a significant negative affect on their academic performance. A lot of people who’ve had concussions can often quickly return to training without experiencing any symptoms. Yet, weeks or months later, they run into trouble.”

“One thing brings me to filter out irrelevant information by dampening certain neuronal signals,” says Thes. “After concussion it seems that a lot less signal dampening is going on. After injury patients may complain that they are visually overstimulated. Memory is affected, too. Without filtering, it’s harder to distinguish what’s important and what’s not, as well as visual malfunction which is key to productive studying. People also tend to be very light sensitive, and have trouble keeping their place while reading, or reading for prolonged periods of time,” says Thes. Combined, all of these symptoms can have a big impact on academic performance.

Optometry may be especially well positioned to help detect concussions because the network of muscular and neuronal systems that govern the movement of eyes is so thoroughly distributed throughout the brain.
Infections can turn corneas from clear to cloudy and can even cause permanent vision loss.

Fleiszig studies bacteria called Pseudomonas aeruginosa, the most common cause of eye infections in people who wear contact lenses. Most of the time, eyes are remarkably infection-free. "You can put your finger in the middle of the eye and it's not going to get infected," says Fleiszig. "The human contact lens is a master of adaptation—it's a hostile environment." Like corneas, the insides of the eyelids are lined by epithelial cells that resist bacteria but we don't get infected, she notes. "We walk around all day long and are exposed to bacteria. "We're surrounded by bacteria, but we don't get infected," she says. "It's a hostile environment." So far, she knows that bacteria can be attracted to the corneas and want to invade them. But their efforts are usually thwarted thanks to the eye's defenses. For example, the cells bristle with peptides—short amino acids chains—that are antimicrobial. "Bacteria don't swim to the epithelial cell surface, they try to stay a distance away," Fleiszig says. But in the eye they can't get very far away. The tear fluid on our eyes is so thin—about a tenth of the thickness of a hair—that the bacteria have nowhere to go. "They're squeezed between the cornea and the epithelium," she says. "It's a hostile environment." Like corneas, the insides of the eyelids are lined by antimicrobial epithelial cells.

Fleiszig thinks contact lenses make this environment friendlier by giving bacteria another place to live. If she's right, contact lenses serve as launching pads where bacteria figure out how to get around the defenses of the cornea's outer layer. "They're far enough away not to be affected by the antimicrobial peptides, but could be close enough to read and adapt to them," she says. "Pseudomonas aeruginosa is a master of adaptation—it's a huge problem in hospitals, it's a terrible, deadly bug." If bacteria adapt to the peptides, they could penetrate the surface of the cornea and enter the vulnerable layer underneath, which is called the stroma. "That has the potential to destroy the cornea, so it's better to prevent infection rather than treat it once it's ongoing," she says. In the past year, Fleiszig's lab has developed a microscope that can track infections in eyes. "We can see individual bacteria in the eyes of living mice," she says. And, more recently, she got another critical tool. "We just got a batch of contact lenses for mice," she says. "They're tiny—a tenth of the thickness of a hair."

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Her work could also have implications beyond the eye. That’s because all of our body surfaces—including our corneas, skin and digestive tract—share an outer layer of epithelial cells that resist bacteria. "We walk around all day long and are exposed to bacteria but we don't get infected," she notes. "We want to identify the factors that maintain eye health." Understanding how eyes resist infection could help us ward off infections in other parts of our bodies as well.

"Understanding how eyes resist infection could help us ward off infections in other parts of our bodies as well."
How to Frame a Career

Blake talks about creative inspiration, the importance of paying attention to the little things, making the transition from clinician to frame designer, and who to take to dinner.

A celebrity favorite, Kuwahara’s designs are worn by Brad Pitt, Sandra Bullock, Catherine Zeta-Jones, Halle Berry, and many others.

Q & A WITH BLAKE KUWAHARA, ’86

Q What inspired you to make the transition from seeing patients to designing frames?
A I was the junior partner with two other optometrists where in addition to patient care, each of us took on the responsibility of overseeing one area of our practice. I was responsible for overseeing our optics, optical boutique, and the buying for our dispensary. I very soon found that I enjoyed being in the “front of the house” assisting patients with their eyewear selections and working with frames more than being in the dark exam rooms all day.

Q Where does your interest in design come from?
A I’ve always had an interest in design—mainly interior and graphic design. At UCLA, I was the Art Director for the campus yearbook and also did an internship at an interior design firm my senior year. In fact, they offered me a full-time position upon graduation but I actually was faced with the decision to matriculate to Berkeley Optometry or go down a different career path as an interior designer. After a lot of consideration, I decided to pursue optometry but always kept an active interest in interior design.

Q Did you have early influences as a child growing up in LA?
A Both my mother and grandmother are artists so I was always exposed to the arts. While I did grow up in a very “Ozzie & Harriet” suburb of LA, my grandparents lived overseas—Bolivia, Jakarta, Yemen, Saigon, and Bangkok—so I was fortunate to still get exposure to a variety of cultural influences. I definitely got the travel bug from my grandparents.

Q Transitioning from seeing patients to designing frames is a big change. What gave you the confidence that you could pull it off, and the courage to actually try it?
A But I had absolutely no idea if I could! I was in completely new territory! It was one of those “at-a-crossroad” type of decisions that I needed to make. While I loved optometry, I knew that I needed to explore a more creative outlet and frame design seemed like a natural extension of my career path rather than a totally divergent one. I knew that if it wasn’t right for me, I still had my OD degree and could return to private practice if I wanted to. It’s always easier to make a decision when you know you have a fall back position.

I had the very good fortune of having a mentor in Dick Haft, the owner of Lit Chabone Optics, who gave me my first opportunity as its Creative Director to delve into the world of frame design. He taught me the technical aspects of frame design and production, and I relied on my previous experience in graphic and interior design to manipulate aesthetics. While very different, there’s still a sense of balance, proportion, and color that extends to all areas of design—including frame design—that I was able to tap into...

Q When you spoke at last Spring’s Professional Development Day here at Berkeley Optometry, you told the students that they should “sweat the small stuff.” Can you elaborate on that here for our readers?
A There is an amazing book written by Chris Hadfield titled “An Astronaut’s Guide to Life on Earth.” If you ever want to feel like a total underachiever, read it! He explains that it’s often the little things that ultimately make a big difference in the success of a mission or in life. When I was practicing, being in a dark room everyday seemed at first like a very little thing, but it became a big issue for me. I’m not sure why I didn’t come to that realization earlier, but it was only after being in practice a few years that I did. Not being able to be spontaneous with my schedule was another. I was in a very busy practice, and we had a backlog of about a month which meant that I couldn’t just spontaneously take any day off—it had to be scheduled months in advance. So, my enjoyment of optometry as a career really had less to do with the actual practice of seeing patients and being a primary eyecare provider, it was the little things—like being in a dark room—that made me realize that I needed to make the right career decision for me.

Q We’ve read that you are inspired by architecture. How does that inspiration manifest in your frames?
A To me, architecture is a wonderful source of inspiration and reference for frame design. Like architecture, we need to focus not only on the aesthetics, but on the engineering and ergonomics of what we are designing. A pair of glasses needs to not only look good, but fit and function properly. One architectural reference in my own collection is the use of 45 degree miters which allows the break in the temple to be completely hidden in the end piece.

Q Looking back on your time at Berkeley Optometry, can you see the beginnings of the thought processes that ultimately led you to become interested in designing frames?
A After I made the decision to go to Berkeley Optometry rather than pursue interior design, I really concentrated on the academic and clinical curriculum and didn’t give design a lot of serious thought. Having said that, I was editor of our senior yearbook so I got to stretch some of my creative muscles and was voted “Most Likely to Prescribe Gucci Contact Lenses” so my classmates must have known something that I didn’t!

Q Now that you are reflecting back, if you could go back to campus and take any Berkeley Optometry faculty member to dinner, who would it be, why would you chose them, and what’s on the menu?
A Can I invite two? I’d love to have dinner with Karla Zadnick and Debbie Chew. Both of them were my clinical instructors, and I learned so much from both of them. And, more importantly, they made me laugh and made clinic enjoyable. I think that dinner would be a hoot! I think that’s important in life in general. To laugh and have a good time. It would be a really casual dinner of beer and pizza since that was the meal of choice when I was in clinic (although I’m sure Deb would be horrified at that thought!).

Q What are you most proud of?
A This really sounds corny, but relative to Berkeley Optometry, I’m most proud of the fact that as a class (’86) we’ve remained close friends and in many cases, our friendship has gotten stronger as we’ve gone down the path of life. Next year it’ll be 30 years since we graduated, but it seems like almost no time has passed at all!

“[I] was voted ‘Most Likely to Prescribe Gucci Contact Lenses’ so my classmates must have known something that I didn’t!”
Our young alums are doing big things! We’re so proud of them that we had to brag. Here are a few of their stories.

Looking Back Where Are They Now

Providing Free Healthcare Around the World
Kelly Kao ’09

WORK: CEO, See the Lord
HOME: Santa Clara, CA
WEB: seethelord.org

After receiving her degree, Dr. Kao hit the ground running; first seeing patients in the Berkeley Optometry eye clinic, doing research for Google Glass, and now running See the Lord, a non-profit Catholic ministry that provides free comprehensive eye exams and patient education to underserved populations in Taiwan, the Philippines and here in the States. Soon they will expand their services to Latin America!

Advice for current students: “Keep trying different things until you find something that sticks. Knowing what makes you miserable is just as important as knowing what makes you happy.”

Ophthalmology Medical Science Liaison
Avanti Ghanekar ’11

WORK: Medical Science Liaison, Genentech
HOME: Oakland, CA
WEB: gene.com

Dr. Ghanekar works as a Medical Science Liaison at Genentech, providing medical support to pipeline products, phase 3 and post-market trials, and investigator-initiated trials. She also works on projects looking at genetics, imaging, and functional endpoints for dry and wet AMD, diabetic eye disease, and retinal vein occlusions.

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Developing the Next Generation of Display Panels
David Hoffman, PhD in Vision Science ’10

WORK: Samsung Display America Lab
HOME: Fremont, CA
WEB: samsung.com/usbibs

David worked with Professor Martin Banks to develop technology needed to create volumetric 3D displays and explored how these systems change the way we perceive depth and how it impacts our comfort when viewing 3D imagery. At Samsung he researches core technologies for display panels that produce appreciable improvement in visual quality—ultimately leading to new and exciting user experiences.

Advice for current students: “It’s easy to feel like you are developing a specialized skill set, but more often than not, in the process you have built up strong competencies in a broad swath of different areas. You never know until much later just which of these areas will be valuable.”

Serving the South Bay
Sonia Menchavez ’13

WORK: Optometry Director, Ravenswood Family Health Center
HOME: San Jose, CA
WEB: ravenswoodfhc.org

After receiving her MPH in 2014, Dr. Menchavez joined Ravenswood—a community health center operating in the mostly uninsured and underserved community of East Palo Alto—where she sees patients full time and directs the optometry program.

Advice for current students: “Figure out what it is you are passionate about in optometry and pursue it. Try not to compare yourself to others in optometry school. Everyone is trying their best and learning at their own speeds.”

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AlumniNotes

1952
Saul Levine says “the years keep flying by while enjoying the best of all professions—what a ride it’s been!” He has reduced his workload to two mornings per week, and is still trying to perfect his golf game.

1968
Ernie Takahashi and his wife Jenny recently traveled to Machu Picchu. Dr. Takahashi was the California Optometric Association’s 2014 Optometrist of the Year!

1973
Clark Abramson and Gary Nelson went fly fishing together on the Missouri River in Craig, Montana. (A long way from Berkeley) Dr. Nelson caught the biggest fish!!

1975
Jerry Chan runs a full service optometry practice in Grass Valley, CA. Dr. Chan is still accepting new patients, as you can see in the photo.

1981
Dr. Julie Helmus, daughter of Dr. Mark Helmus, and Dr. Joann Helmus, ‘86, has joined the practice of Helmus + Baker Optometry in Davis, CA. Julie graduated with distinction from Pacific University College of Optometry in May.

1982
David Brew, & Anita Scheffler, ’85 retired from Lenscrafters in 2005 and now enjoy traveling to places such as Istanbul, where they visited in May of 2015.

1986
Dr. Jeff Azus, Paul Jensen, Blake Kunoahara, Paul Peng, and Rick Robinson (Class of 1986) together with Drs. Alice Azus and Jane Ogawa-Tsuetaki (Class of 1987) took part in a Lions in Sight mission in Aguascalientes, Mexico.

1988
In March, a team of all-Cal Optometry grads along with Deborah Steinberg, headed to Bolivia to do vision screenings on school children in Cotacachi and surrounding communities with a grant from Rotary International, where they had a 12% referral rate. Phase 3 of the project provided extended care for the children that failed the screening and low cost glasses. Phase 3 of the project brings Rotarians from Italy to train Bolivians on making glasses and providing new lab equipment. While in Bolivia they screened 1787 children from 30 different schools. The screening team was Wayne Nishio, ’81, Devinder Grewal, ’81, Ross Redding, ’87, Deborah Steinberg, ’88, and Tony Giannotti, ’79.

2007
Introducing the newest member of the Kanai family! Kuniyoshi Kanai presents Leo (left) born in November 2014, and Alisa (right), 4 years old.

2008
This year Debora Lee Chen, and husband Terry welcomed their first daughter, Mia Chen, into their family. Mia was born on April 7, 2015. Debora is working in the Binoscopic Vision Clinic at Berkeley Optometry.

2009
Justin Kwan married Lora Kim on April 11, 2015 on board the historic and majestic Queen Mary in Long Beach, CA. It was a super fun day celebrating with friends and family. Dr. Kwan currently is in his fifth year teaching full time at Southern California College of Optometry at Marshall B. Ketchum University in corneas and contact lens. He also heads the dry eye and refractive surgery clinic.

2012
Melanie Akau completed a 2-year post-residency optometry research fellowship at the Boston VA Hospital and married Matthew Taliaferro in August, whom she met during her last year of optometry school. They were each other’s first and only E-Harmony date! The couple reside in the greater Boston area and Melanie will be joining a private MD/OD practice in Nashua, NH this Fall.

Hey Alumni!
Do you have a story to tell? About your career or you life? We’d love to hear from you! Send us pics and details.
optoalumni@berkeley.edu

Our Alumni do amazing things—in and out of the clinic! Here’s a sampling of what they’re up to...
Berkeley Optometry alumni and friends have never been more generous with their time and talent! Over the past year more than 300 Berkeley Optometry alumni volunteered at or on behalf of the school. We hosted a whopping 3,000 participants in Alumni, CE, Career Management, student and patient care events. The voices of Berkeley Optometry alumni are loud and clear, and our ears are open!

**Total Giving**

$1,103,661.55

**Total Unrestricted Giving**

2014: $474,144

2013: $316,825

+$157,319

**Number of Donors**

792

**Alumni Donors**

462

**Student Donors**

89

**New Donors**

249

**Looking Back**

17%

14%

9%

2%

58%

10%

5%

43%

42%

10%

Dean’s Initiatives (Annual Fund)

Research

Learning Environment (Facilities)

Student Scholarship (PSSF)
Invest in our Vision

The path to outstanding patient care and vision science research begins in our classrooms and clinics.

Learn more and make your gift online.

optometry.berkeley.edu/give