SUZI FLEISZIG RESEARCHES THE CORNEA’S RESISTANCE TO INFECTION
WE ARE BLESSED TO LIVE IN “INTERESTING TIMES”!
At this writing, the U.S. economy is in the tank, the state of California is in the red, and I’m sure I don’t need to tell you that the budget situation at the University of California continues to be challenging.

In this environment, our priorities are to preserve and maintain our fundamental missions—teaching, research, and public service. And I’m pleased to say that Berkeley Optometry continues to excel in all of these through the efforts of our dedicated faculty and staff. In this spirit, it seems timely to celebrate some of the highlights of the last year.

Among other things, in this issue of Berkeley Optometry Magazine you will see that we have a new faculty and student exchange agreement with Peking Medical University (PKU) Third Hospital; one of our students, Brian Snydsman, won the 2008 Essilor Optometry Superbowl at the annual meeting of the American Optometric Association and American Optometric Student Association; Professor Clifton Schor received the Charles F. Prentice Medal from the American Academy of Optometry at its annual meeting last October; and Professor Suzanne Fleiszig (see cover) and David Evans won a grant from the Bill and Melinda Gates Foundation as part of the global Grand Challenges Explorations initiative.

Recent increases in tuition at optometry schools across the nation are expanding student debt and placing huge strains on both students and the optometric profession. At Berkeley Optometry we have made enormous strides in addressing this challenge. Our private support has increased significantly, especially through gifts to the Berkeley Optometry Annual Fund and through the establishment of new student support endowments, including the Class of 2008 and 2009 Professional Student Support Funds, the first endowments created by graduating classes. These are certainly welcome developments and worthy of celebration—thanks to all of you for your support.

As you read this and future issues of Berkeley Optometry Magazine, you will see that Berkeley Optometry continues to make an impact on the world through breakthroughs in optometric research and by reaching out internationally and locally to provide quality eye care. I look forward to hearing from you and always welcome your thoughts at dlevi@berkeley.edu.
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I would like to thank three recent graduates who helped provide the framework for our work in External Relations at Berkeley Optometry: Ben Cheung ’09, Eileen Ng ’09, and Matt Wilkening ’09 conducted a survey entitled “What Berkeley Optometry Alumni Expect from Their Alumni Association.” We are also grateful to the California Chapter of the American Academy of Optometry (CAAO) and Curt Keswick ’75, Alumni Association Immediate Past President, for their assistance in this study. The survey showed that our alums expect Berkeley Optometry to provide communication, camaraderie, and continuing education.

As a result, the Office of External Relations and Development created this magazine, among other efforts. It appears from the letters that would be very proud. I could not put it down. I learned more about Berkeley and optometry’s roots in the magazine than I learned my whole 11 years at Berkeley. Page 3 (“Thanks to Berkeley . . .”) gave a wealth of information about the campus and the new entering class in optometry. The articles on the research at the school and the “Faculty Spotlight” emphasize why it is still considered one of the major research universities in the world. You can’t read this issue without feeling the excitement for everything that is going on at Berkeley. It makes you want to support the school even more.

I also like the “Endowed Chairs” section. It certainly spotlighted the significant gifts that have been given to the school. I also enjoyed reading “Why I Give to Berkeley.” Dr. Chahine certainly spoke from the heart and provided a rationale for giving in addition to his emotional attachment. Finally, the article about Tammy certainly illustrated the power behind the Director of Philanthropy’s position. It certainly seems like she is the right person for the job.

Congratulations again on this fine publication. You have every right to be very proud. You have set the bar very high and I am already waiting for the next issue.

David G. Kirschen ’72

Last week—just before I left for the Academy meeting—I received Vol. 1, No. 1 of Berkeley Optometry Magazine. You can hardly imagine how much pleasure and good memories the magazine brought to this old grad of the Class of ’41! I maintain my contacts with the Academy and optometry through our son (David Kirschen ’72) and his many activities in the field. In fact, at the Academy meeting he took a picture of Irv Borish and me and captioned it “Closing in on 150 years of optometry!” [see “Class Notes”].

Good luck with future issues of the magazine! There is an expression in Hebrew, Kol Hakavod, which translates literally as “all the honor” but really means “way to go!” So Kol Hakavod!

Morrie Kirschen ’41

My thanks to whoever placed my name and address into the mailing system. I received a copy of Vol. 1 of Berkeley Optometry Magazine and read it cover to cover, nonstop. I offer my heartiest congratulations upon producing a stunning inaugural edition. I believe it is outstanding and I am proud for the school.

I also was very pleased to read the approach and reference to the Optometric Oath as the theme of Dean Levi’s remarks. I thought it was outstanding and very special.

Dick Hopping

Just finished reading the new magazine, and I thoroughly enjoyed it! The writing, the layout, the photography, even the quality of the paper—all first-rate. I especially liked “The Early Years of Berkeley Optometry” and the information regarding the current research taking place at the school.

Although I am now retired (after 37 years of practice in San Mateo), I would be proud to place this magazine in my waiting room.

I am very much looking forward to the next issue.

Daniel P. Grayson ’66

I read your first issue of Berkeley Optometry Magazine when I got back from California, and you did an outstanding job. Since I am the editor of UAB Optometry, I know how much time and effort goes into “birthing” one of these babies. Congratulations on your inaugural issue. I am very impressed.

Peggy D. Striplin, M.A.
Sr. Director of Development
Director of Alumni Affairs
UAB School of Optometry

Nice job with the new Berkeley Optometry Magazine! My thesis advisor was Meredith Morgan, and I want to continue to support his awareness at the school.

Dave Halsey ’75
The PhotoBooth Project

More than 1,000 students, alumni, faculty, parents, friends, and staff have taken part in the “Thanks to Berkeley…” PhotoBooth Project—a unique visual expression of the many individuals who make up the Cal community. We’ve displayed a sampling of the photos and quotations of the Berkeley Optometry community here. The full collection can be viewed online at the Campaign for Berkeley website (campaign.berkeley.edu). This site is also the main source for campaign information, including giving opportunities for the School of Optometry.

This project will continue for the next five years of the campaign. We encourage all members of the Berkeley Optometry community to step into the PhotoBooth to add their “Thanks to Berkeley…”
New Agreement with Peking Medical University

In fall 2008 we established a new faculty and student exchange agreement with Peking Medical University (PKU) Third Hospital. As the first phase of this agreement, we have established a certificate program for new Berkeley Optometry graduates to spend two to three months at PKU. The plan for 2010 is that this PKU experience will become part of a new Community Health Residency program.

Student and Faculty Awards

Our students continue to be the best and brightest. Student Brian Snydsman won the 2008 Essilor Optometry Superbowl at the annual meeting of the American Optometric Association and American Optometric Student Association in Seattle. The Essilor Superbowl pits a representative of each school of optometry against the others in this very entertaining "quiz show," which tests overall optometric knowledge.

On the faculty side, Professor Clifton Schor received the Charles F. Prentice Medal from the American Academy of Optometry at the October 2008 annual meeting in Anaheim. Established in 1958, this is the Academy's highest honor and is given annually to recognize an outstanding scientist who has contributed significantly to the advancement of knowledge in the visual sciences.

In addition, Professor Xiaohua Gong received the National Foundation for Eye Research Cataract Research Award at the ARVO meeting in Ft. Lauderdale. This award recognizes Xiaohua's outstanding research on cataract, in particular his study of potential biological and/or chemical tools to prevent the formation of cataract.

One of Berkeley Optometry's highlights this year was the announcement that Professor Suzi Fleiszig and David Evans have been awarded a grant by the Bill and Melinda Gates Foundation as part of the global Grand Challenges Explorations Initiative. This very competitive award (only 1.5 percent of the applications were funded) is for projects using innovative approaches toward fighting diseases of the developing world (in this case, protection against infectious disease). Suzi and David are using the eye as a source of novel, broad-spectrum anti-infectives. (See this issue's cover story on page 8.)

Student Financial Aid

One of the challenges all schools and colleges face is student debt load. Nationwide, optometry students graduate with an average debt well in excess of $100,000. The recent increases in tuition (at Berkeley Optometry tuition is now over $20,000 per year for California residents and over $30,000 for nonresidents, and rising) will likely drive this up. Increasing student debt places huge strains on both students and the optometric profession. In last year’s issue of Berkeley Optometry Magazine, we described the newly created Chancellor’s Challenge. Seven classes of Berkeley Optometry graduates have now established class scholarship funds, including the Class of 2009 Professional Student Support Fund, the second endowment created by a graduating class.

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Admissions
Applications for the Class of 2013 were up 11 percent over the previous year. Of 273 applying, 124 were interviewed and 77 admitted. Sixty-seven students have accepted admission. Because our initial yield was over 90 percent, this is the first year we have not had a waitlist for admission. For those admitted, the average Optometry Admissions Test score was 363; average GPA for prerequisites was 3.53. Eleven of the incoming students had also attended Berkeley Optometry’s summer Opto-Camp program.

Beginning with the Class of 2014 applications, Berkeley Optometry will participate in the Association of Schools and Colleges of Optometry (ASCO) centralized admissions system. This will give applicants an efficient and convenient way to apply to multiple optometry programs using a single web-based application, eliminating the need for duplicate transcripts and letters of recommendation. The system provides an electronic tool for applicants to request letters of recommendation and will also serve as a repository for transcripts. The web application uses validation rules to decrease the chance for accidental errors and omissions. Throughout the cycle, applicants have access to assistance from knowledgeable support staff at a single point of contact. This system also provides a real-time tool for checking the status of applications, transcripts, and letters of recommendation.

Third Annual Conference on Translational Research
During the weekend of June 6–7, 2009, the Berkeley Clinical Scientist Development Program hosted the Third Annual Conference on Translational Research. This year marks the 50th Anniversary of the Orinda Study and set the background for the conference theme—Etiology, Prevention, and Treatment of Refractive Error. Professor Gerald Westheimer, a world-renowned giant in vision research and a former colleague of Professor Hank Peters, opened the conference by providing a historical perspective on both Professor Peters and the Orinda Study. Professor Brien Holden then gave a stimulating lecture on preventable world blindness, pointing out that there are over 500 million people who have preventable “blindness,” and for many of these individuals a simple pair of spectacles would restore their sight. Subsequent sessions covered cutting-edge research on visual, environmental, and genetic contributions to myopia; optical control of myopia; retinopathy-induced myopia; refractive error and accommodation development; vision screening; novel amblyopia treatments; clinical applications of wavefront sensing and adaptive optics; and ocular regenerative medicine. The Fourth Annual Conference on Translational Research is being planned for June of 2010; it will focus on the retina.

UC Berkeley Well Represented in Washington
Washington has certainly come to Berkeley in search of brainpower. President Obama has appointed Steven Chu (Physics and Nobel Laureate) as Secretary of Energy and Christina Romer (Economics) as Chair of the Council of Economic Advisors. Maria Blanco (Law), Maria Echaveste (Law), Christopher Edley Jr. (Law), Jacob Hacker (Political Science), Helen Halpin (Public Health), Thomas Kalil (Special Assistant to the Chancellor), Dan Kammen (Goldman School of Public Policy), David Kirp (Goldman School of Public Policy), Goodwin Liu (Law), Ann O’Leary (Law), Michael Nacht (Goldman School of Public Policy), John Quigley (Economics, Business, and Goldman School of Public Policy), Robert Reich (Goldman School of Public Policy), and Laura D’Andrea Tyson (Business) all serve as advisers to President Obama.

White Coat Ceremony for Second-Year Students
Berkeley Optometry held its fifth White Coat Ceremony at the end of the spring semester. As a result of the enhanced second-year curriculum, which provides students with significant patient care experience, a true milestone is reached when they become third-year students. This passage was officially marked by the White Coat Ceremony held on May 22, 2009. The event was highlighted by the presentation of a white clinic jacket (provided by Alcon) to each student, and it included a group recitation of the Optometric Oath.

Commencement under the Big Top
Optometry and Vision Science Graduation ceremonies were held Saturday, May 23, 2009, on Minor Plaza. This year we honored 54 new Doctors of Optometry and four new Doctors of Philosophy in Vision Science.

Congratulations to Dr. Randy Brooks
Dr. Randy Brooks is the new president of the American Optometric Association. Randy (left) is shown with his son Doug, Cal ’00 BA and former captain of the soccer team.
Contact lens-related corneal infections have plagued patients, practitioners, and contact lens manufacturers alike since soft (hydrogel) contact lenses were first introduced over 30 years ago. Prior to that time, corneal infection was rarely seen in healthy people and even then occurred only when there was preexisting corneal disease or injury. Interestingly, the incidence of contact lens-related infectious keratitis has remained surprisingly constant through the years (0.2 percent for extended wear), despite a plethora of new products, including silicone hydrogel materials that transmit physiological levels of oxygen. Thus, research into the pathogenesis of infections has necessarily moved beyond studies of hypoxia and oxygen transmission.

**WHY DO CONTACT LENSES PREDISPOSE USERS TO CORNEAL INFECTION?**

For the past 15 years, the Fleiszig lab has focused their research efforts on that question. In a multidisciplinary effort, postdoctoral fellows and undergraduate students work side by side with graduate students enrolled in various programs that include optometry, microbiology, chemical engineering, infectious disease and immunity, and health and medical sciences. The lab is focused on understanding interactions between the ocular surface and the bacterium *Pseudomonas aeruginosa*. This remains the most common contact lens-related keratitis pathogen, despite the much-publicized *Fusarium* and *Acanthamoeba* outbreaks that occurred in recent years. The goal of the lab’s research is to determine why the cornea is normally resistant to infection and the mechanisms by which certain risk factors, such as contact lens wear, enable susceptibility. While the main focus is on the eye, a bold long-term goal is to discover new means to prevent any type of infection.

**WHY IS THE CORNEA RESISTANT TO INFECTION?**

To understand how contact lens wear makes the cornea susceptible to infection, we must first consider why the healthy cornea does not get infected when a lens is not worn. Indeed, the normal corneal surface is unique among exposed mucosal surfaces in that it resists colonization by all types of microbes, including new and emerging pathogens. Our other mucosal surfaces not only have a normal flora of microbes, but in some instances these microbes are actually essential for maintaining health. The Fleiszig lab is exploring the idea that the healthy...
ocular surface possesses unique antimicrobial activities that might be harnessed to protect the eye (and possibly other body sites) against infection. Indeed, the Gates Foundation recently provided funding to the lab to begin to explore that very idea, as part of their Grand Challenges Explorations (GCE) initiative.

Lab members involved in the project include assistant research scientist Dr. Connie Tam, graduate student in vision science James Mun, and staff research associate Dr. Julio Ramirez. The lab's research is a joint effort with Dr. Fleiszig's principal collaborator and husband Dr. David Evans, who holds an appointment at UC Berkeley and is also a professor of pharmacy at Touro University (Vallejo, CA). They are testing the hypothesis that there are unique antimicrobial factors at the ocular surface that reduce the viability of virtually any microbe that comes into contact with the cornea. There are several pieces of evidence that support this hypothesis.

**EVIDENCE OF UNIQUE ANTIMICROBIAL FACTORS IN THE EYE**

- **Despite the daily barrage of microbes, corneal infection is practically nonexistent unless there is preexisting corneal injury, disease, or contact lens wear. In contrast, infection of the adjacent conjunctiva (which is not required for vision and has the luxury of conventional immunology at its disposal) is quite common.**
- **When the adjacent conjunctiva does become infected, the infection rarely spreads to involve the cornea.**
- **Immunocompromised patients who have an increased risk of infection at other sites do not necessarily have an increased incidence of corneal infection, suggesting unique (local) protective factors at the eye.**
- **Inoculation of healthy animal eyes (mouse, rat, rabbit, guinea pig, pig, hamster) does not result in infection even if extremely large inocula are used. Researchers studying a wide variety of pathogens have all found that the full thickness of the corneal epithelium must first be injured or bypassed by injection for infection to occur. Even that is not enough for some pathogens that easily infect other sites; indeed, researchers have often had to resort to using chemicals, inhibitors, or contact lenses in addition to injury to enable their pathogenic microbe of interest to cause corneal disease.**
- **Bacteria added to the ocular surface quickly lose viability. However, in-vitro experiments show that interaction between tear fluid and corneal epithelial cells is required for this defensive function; tear fluid alone is not effective at controlling growth of P. aeruginosa, and cells without tear fluid are vulnerable to bacterial-induced damage.**
- **The corneal surface can retain its remarkable resistance to microbial infection even if the cellular barrier function of the cornea is disrupted (as evidenced by fluorescein staining), suggesting that there are antimicrobial defenses beyond physical barriers.**

The Fleiszig lab proposes that evolution drove development of a unique system at the corneal surface because of the need for corneal transparency (critical for vision and thus survival). This has required the cornea to do without features of the immune system (and blood vessels) that other organ systems use to defend against infection. It is true that the cornea can ill afford to become infected, because even a tiny scar at the central cornea can cause functional blindness.

Current approaches to preventing infection include immunization, which is highly specific—different vaccines are required for different pathogens and sometimes even for different strains of the same pathogen. Similar problems are associated with strategies aimed at blocking microbial-host cell interactions. Antimicrobials, which function by killing microbes or suppressing their growth, generally suffer from the challenge of antimicrobial resistance. The eye appears to have developed an effective means to combat microbes in a broad-spectrum and biocompatible fashion, which has stood the test of time through evolution in diverse species without suffering loss of activity against its intended targets, including emerging new pathogens. Thus, the Fleiszig lab believes that their efforts in deciphering the molecular mechanisms of defenses used by the cornea could lead to innovative strategies to combat infectious disease in general.

**FACTORS THAT IMPACT SUSCEPTIBILITY TO INFECTION DURING CONTACT LENS WEAR**

For many years, the Fleiszig lab has also been working toward understanding how contact lens wear compromises the ocular surface and the strategies that bacteria use to exploit those changes to cause disease. Other lab members involved in this aspect of the lab's research include postdoctoral fellow Dr. Victoria Hrintenko and several graduate students, including three microbiology program students, Annette Angus, Danielle Augustin, and Irania Alarcon, infectious diseases and immunity program student Amanda Ackerman-Lee, and chemical engineering program student Victoria Tran. The work has been assisted by a multitude of talented and dedicated optometry students, who include Sarah Lewis ('09), Eric Li ('10), Avanti Ghanekar ('11), and Chelsia Leong ('12).

Corneal epithelial cells infected with *Pseudomonas aeruginosa* can be studied by microscopy, and until recently much of the lab's work involved the use of cultured corneal cells and other in-vitro models, due to the lack of a suitable in-vivo contact lens model. But in the past year, the Fleiszig lab has been able
to obtain contact lenses custom made to fit the rat eye. Data collected to date using these low DK hydrogels show that when the lens is contaminated with P. aeruginosa and then placed on a healthy rat eye, the cornea becomes infected without any additional manipulation or the use of any lens-care solutions. Interestingly, the data show that the onset of visible disease is delayed by 5–14 days. Even more surprising is that superficial injury to the corneal surface using tissue paper (which enables fluorescein staining) prior to adding the contaminated lens does not reduce that time delay. Equally intriguing, control experiments revealed that in the absence of lens wear, superficial injury to the epithelium does not render the cornea susceptible to infection. Together, these data show that loss of “barrier function” as determined by fluorescein staining does not necessarily impact susceptibility to infection either with or without contact lens wear. They also suggest that a complex set of events precede contact lens-related infection, and that these take time to unfold.

Fleiszig’s lab is now trying to determine the barriers that prevent bacterial infection even when there is fluorescein staining. The lab is also working toward understanding the delay in disease onset for contact lens infections in the animal model, which could relate to why extended wear is a risk factor for humans. Importantly, since contact lenses turn a resistant rat cornea into a susceptible rat cornea in an otherwise healthy animal, this model provides the lab with a new method in their efforts toward pinpointing local molecular factors that affect susceptibility, which could provide new strategies for preventing infection of the eye and other sites.
MARIANNA MKRTCHYAN ‘11

Born in Armenia, Marianna Mkrtchyan moved to the United States with her family at age 15. Her parents, a lawyer and an engineer, had high expectations for her. Facing numerous challenges and adversities, trilingual Marianna learned to be strong, open-minded, and persistent.

In 2004 Marianna graduated from UCLA with Departmental Honors, BS, in molecular, cell, and developmental biology. She took a job at UCLA as a research assistant studying stem cells in Drosophila, where she coauthored articles in Nature and Development Genes Evolution. Although research was enticing, Marianna wanted to develop the skills to work in direct patient care. Her interest in optometry was confirmed at the Jules Stein Eye Institute in UCLA, where she witnessed numerous patients diagnosed with keratoconus, often difficult cases, being fitted with rigid gas-permeable lenses.

Marianna started at Berkeley Optometry in fall 2007. In the summer of 2008, as the recipient of an NEI T35 research grant, she joined Austin Roorda’s lab. Marianna focused her research on imaging patients with acute zonal outer retinopathy (AZOOR) using the adaptive-optics scanning laser ophthalmoscope (AOSLO), which makes it possible to analyze the structural properties of individual cones (density and spacing) and determine the possible correlations between retinal structure and function.

At this point Marianna plans to apply for a residency program in a field related to ocular disease. She also enjoys drawing and fashion design.

JOY HAREWOOD ‘11

Born and raised in Ottawa, Canada, Joy Harewood retains strong ties to the Caribbean. From Antigua and Barbados, her parents immigrated to Canada to attend university and settled there to raise five children. Joy attended the University of Toronto, where she specialized in genetics. She was awarded two summer research grants to study the interaction between cancer and diet, and she completed a thesis on the transmission of the malaria parasite. She also tutored underprivileged youth from high schools in Toronto and worked at the Centre for Urban Health Initiatives, where she coordinated a citywide discussion series on food justice issues. Although she had always planned to pursue research in genetic disease, her involvement in community outreach projects directed her toward a career with more public interaction.

When a family member was diagnosed with glaucoma, Joy began to consider optometry as a career. A family history of diabetic retinopathy and glaucoma made the study of the eye fascinating as well as deeply personal.

At Berkeley Optometry Joy is the treasurer for the Class of 2011, an officer in the Beta Sigma Kappa Optometric Honor Society, and an active member of the Black Graduate Students Association. She also works as the alumni network coordinator for the Bears Environmental Leadership Program at the College of Natural Resources. Joy hopes to marry her passions for optometric and international work by participating in a VOSH trip to Kenya later this year. She enjoys pursuing a career that suits so many of her interests while allowing her to improve the quality of life for others.

TARAS LITVIN ‘09

Taras Litvin was born and raised in Lviv, Ukraine. After his first semester at university, he moved to Boston as an international student. The move came as he was beginning to realize that his chosen profession, law, was not for him. Taras decided to explore health care and became a registered nurse. It was a perfect place to gain exposure to various health-care disciplines, and it validated his career choice. Over time he gravitated toward optometry.

Those years of career exploration also allowed Taras to pursue his interest in martial arts. He became a member and instructor at the Wah Lum Kung Fu Athletic Association. After years of competing at various national and international tournaments, the high point of Tara's competitive career came in 2001, when he earned a bronze medal at the 7th International Shaolin Wushu tournament in Zhengzhou, China.

While in Boston, Taras also volunteered for the Chernobyl Children Project, an international organization with chapters in various cities in Western Europe and the United States. The organization’s objective is to provide respite and medical care for children affected by the Chernobyl nuclear power plant explosion in 1986. At Berkeley Optometry, Taras approached the clinic director, who was enthusiastically receptive to creating a connection between the local chapter of the Chernobyl Children Project and Berkeley Optometry. As a result, children from the Chernobyl Children Project have been receiving free eye exams and glasses at our clinic for the last two summers. Taras sincerely hopes that this collaboration continues after his graduation, when he will be pursuing a residency in ocular disease at Berkeley Optometry.

ANDREA BUITRAGO ANTONELLI ’09

Andrea Buitrago Antonelli was born in Bogotá, Colombia and raised in Marietta, Georgia. She received a BS in biology in 2001 from the University of Georgia. Andrea became interested in optometry while working for a small group of optometrists as an undergrad. Her career path took a turn when she moved to New York City shortly after September 11, 2001, but she always kept optometry in her goals as she gained important experience in business and nonprofits.

Andrea was attracted to Berkeley Optometry for its strong clinical program and excellent faculty and students. Andrea has volunteered at the Berkeley Suitcase Clinic, participated in a VOSH trip to Nicaragua, and attended various Bay Area health fairs. Andrea also helped start the optometric Spanish class, served on the ’07-’08 admissions committee, and was a class co-president during her third year. In the spring of 2008, Andrea was selected to attend the University of California Women in Health Services Conference.

In her fourth year Andrea completed externships at the Bascom Palmer Eye Institute, the Miami Department of Veterans Affairs Medical Center, and Omni Eye Services of Atlanta. Andrea’s goal is to provide excellent vision care to the community and underserved individuals.
AN IMPORTANT AND RAPIDLY GROWING FIELD

Lymphatic research has experienced exponential growth during the past few years, largely due to the advancement of modern technology and the recent discovery of several lymphatic-endothelium specific molecules, such as VEGFR-3, LYVE-1, and Prox-1.

Unlike blood vasculatures, lymphatic vessels are not easily visible. As a major circulation system in the body, the lymphatic network penetrates most tissues and plays critical roles in many functions, including immune responses, cancer metastasis, vitamin and fat absorption, and body fluid regulation.

Numerous disorders are therefore associated with lymphatic dysfunctions, such as inflammatory diseases, cancers, transplant rejection, diabetes, autoimmune diseases, AIDS, and lymphedema. To date, there is no effective treatment of these lymphatic-related disorders, so it is a field with urgent demand for new therapeutic protocols.

REGULATING THE LYMPHATIC PATHWAY TO CONTROL CORNEAL INFLAMMATION AND TRANSPLANT REJECTION

Lymphatic and blood vessels are not normally present in avascular structures like the cornea. However, they are induced during corneal inflammation after infectious, traumatic, chemical, or toxic insults. Figure 1 shows an inflamed cornea where lymphatic vessels have developed.

Once induced, corneal lymphatic vessels enhance the high-volume delivery of antigens and antigen-presenting cells and accelerate inflammation and transplant rejection. As shown in Figure 2, the immune reflex arc in corneal transplantation consists of the afferent pathway of lymphatic vessels (yellow),
allowing for antigens and antigen-presenting cell migration to the draining lymph nodes, and the efferent pathway of blood vessels (red), facilitating T-cell homing to the targeted corneal grafts.

Therefore, although corneal transplantation is the most common and successful form of solid tissue transplantation in humans and enjoys a two-year survival rate of 90 percent on uninflamed corneas, the rejection rate of corneal grafts on inflamed and lymphatic-rich corneas can be as high as 90 percent. Unfortunately, many patients who are blind from corneal diseases fall in this high-rejection category. To date, there is no effective treatment for these patients. While we know that surgical severing of the lymphatic pathway leads to universal and indefinite corneal graft survival, this method is not practical in the clinic. Dr. Chen is therefore interested in identifying alternative molecular and cellular strategies to regulate this pathway, a necessary prerequisite to developing new therapeutic protocols. Very promisingly, results from her past and current studies have demonstrated that several lymphatic factors play critical roles in corneal lymphatic growth and transplant rejection. Her studies have also shown that molecular blockade of these factors reduces corneal inflammation and promotes transplant survival, holding the promise of developing new pharmatherapy strategies.

**CLINICAL SIGNIFICANCE**

Vision is the most vulnerable of our five senses, and lymphatic growth accompanies many corneal diseases. The graft rejection rate on inflamed corneas can be as high as 90 percent, regardless of the treatment delivered. The pharmatherapy of corneal transplants has changed little over decades, despite the fact that corticosteroids are known to have serious side effects, such as glaucoma, cataracts, and opportunistic infections. Lymphatic research promises to provide potential novel strategies to combat these disorders.

In addition, research on corneal lymphatics has broader clinical implications beyond the treatment of ocular diseases alone. Indeed, the lymphatic system is becoming an emerging focus of cancer research. As mentioned earlier, numerous diseases are associated with lymphatic dysfunction, which can be disfiguring, disabling, or even life threatening. Dr. Chen hopes that beyond the contributions to eye diseases, her research in corneal lymphatics will also shed some light on the development of new therapeutic strategies for other lymphatic-related diseases in the body.

**MULTIDISCIPLINARY TEAMWORK**

Dr. Chen’s keen interests in ocular inflammation and immunology research started years ago during her residency training, when she was exposed to a large number of patients who were blind from corneal diseases and suffered recurrent transplant rejections. Those experiences inspired her to become a clinician scientist in vision research. Her current research team of molecular biologists, cell biologists, and ophthalmologists is fully geared to perform comprehensive studies in this cutting-edge research field. Dr. Chen has also established wide collaborations with other pioneering scientists in the field, both nationally and internationally.

![Figure 1: Newly developed lymphatic (orange) and blood (green) vessels in the inflamed cornea.](image1)

![Figure 2: The immune reflex arc of corneal transplantation demonstrates the importance of the lymphatic pathway.](image2)
Berkeley Optometry has a strong philanthropic presence both locally and internationally. It should not be surprising that so many of our faculty, students, and staff are involved in public-service efforts aimed at improving the lives of those less fortunate, given that our lives have been enhanced by the privilege of attending the public-supported University of California.

In the words of Chancellor Robert Birgeneau, “Berkeley’s role as a model public university is so important that we must summon ourselves to its highest aspirations. Any failure to lead as a pre-eminent research and teaching university not only diminishes Berkeley but also diminishes the standards to which public education in this nation aspires. As a land-grant institution, UC Berkeley has a longstanding commitment to serving the public good, and it achieves this lofty goal through many small and large initiatives by its faculty, staff, and students. This spirit of public service is manifested very directly in the fact that, historically, UC Berkeley has produced more Peace Corps volunteers than any other university in the country.”

In this article we have highlighted a few of the efforts in which Berkeley Optometry, our faculty, staff, students, or alumni have been involved. In future issues we will be highlighting yet other efforts, including student and faculty participation in Volunteer Optometric Services to Humanity (VOSH); the school’s efforts working with our partners in China; the founding of the Elite School of Optometry and Rural Eye Hospital in Chennai (Madras), India; and alumni involvement with Guide Dogs for the Blind and Children’s Hospital Oakland Research Institute (CHORI).

EyePACS Saves Vision


Michael Cheng-Thao’s vision blurred, his hearing dimmed, and he often felt dizzy and faint as he stacked magazines and phone books at his minimum-wage job in the San Joaquin Valley. Though doctors told the 40-year-old father of eight that he should see an eye specialist immediately, the only appointment
he could find in his hometown of Merced was two months away.

Cheng-Thao, a Hmong immigrant from Laos who speaks little English, became afraid. As his condition worsened, he started to worry that he would lose his job—his family’s main source of income. So he called his cousin, who worked as a photographer at a nearby clinic in Merced. This clinic had started using a digital camera to take pictures of patients’ retinas. His cousin took pictures of Cheng-Thao’s eyes, posted the images to the clinic’s web site, and five minutes later received a response from an optometrist several hundred miles away. He recommended that Cheng-Thao go to the emergency room immediately. Two weeks later surgeons operated on a nonmalignant tumor in Chen-Thao’s brain, which could have caused permanent damage had it been left to grow.

Though Cheng-Thao’s diagnosis may have been extraordinarily rare, his difficulties with the healthcare system were not. The San Joaquin Valley includes some of the poorest areas in the state and has the fewest number of primary-care physicians and specialists per capita. That’s why a socially conscious Berkeley Optometry faculty member, Jorge Cuadros ’80, has created and started to install technology that has been nothing short of revolutionary for low-income people throughout California. The relatively cost-effective, digital medical technology that possibly helped save Cheng-Thao’s life is now helping thousands of people without insurance or money to access eye-care specialists, and it will likely help tens of thousands more in coming years.

Dr. Cuadros, a Berkeley Optometry informatics researcher, developed EyePACS (Eye Picture Archive Communication System), a web-based system that allows people with limited access to health care to get diagnoses on the web from eye clinicians across the state or country. The main focus of EyePACS is to identify complications from diabetes, the leading cause of blindness in the United States for people 20 to 74 years old. Every year in this country, the equivalent of UC Berkeley’s entire student body, faculty, and staff go blind from preventable diabetic complications. In many cases these people are poor rural workers who don’t have access to regular eye exams. EyePACS focuses primarily on indigent populations in the Central Valley, where diabetes is common. During checkups at small local clinics, nonphysician technicians can take photos of the retina and put the images on the web, where Dr. Cuadros and now other doctors examine them. Occasionally, the photos show problems other than diabetes, such as elevated pressure inside the eye (glaucoma), retinal tears or holes that can lead to retinal detachments, or ocular tumors.

Dr. Cuadros initially got involved with this project through a Cal Health Care Foundation Grant while finishing his PhD. He found that the number of people not able to see specialists for proper testing and diagnosis is so huge that he now spends his free time traveling and training primary-care physicians to use this technology. For example, in Seguro Popular in the State of Guanajuato, Mexico, a network of clinics is responsible for roughly two million uninsured indigent people in the state. Dr. Cuadros set up the physicians with accounts and passwords in EyePACS (which he designed as a license-free imaging web application), so that they could capture and transmit digital retinal images to himself and Dr. George Bresnick, a retinal specialist. When the clinics began sending images of their patients, Dr. Cuadros realized that he needed to write a computer program for them to install on their computers that would enhance the images and transmit them faster (their Internet connection was often extremely slow).

In one year alone (August 2006 to August 2007), these physicians screened nearly 7,000 diabetic patients. Dr. Cuadros was not able to keep up with the readings, so he enlisted a group of three optometrists and two ophthalmologists, who volunteer their time along with Cuadros to read the images. Ultimately, this project will empower local providers to provide complete retinopathy detection services without relying on foreign volunteers. Dr. Cuadros has now expanded his focus to teach these same primary-care clinicians in Guanajuato to be able to read the retinal images themselves. To that end, he has developed an online course in Spanish (available at no charge) that teaches the health-care providers how to identify sight-threatening diabetic retinal lesions.

The EyePACS retinopathy reading program has now expanded to the State of Jalisco, Mexico, as well as the Island of Antigua, the Republic of Colombia, and the states of New Mexico (through the University of New Mexico), Michigan (through Michigan State University), and New York (through Columbia University).

Dr. Cuadros continues to volunteer his time and expertise while he travels the country and Mexico, bringing high-tech diagnostic capability to those who have no conventional access to the health-care system. He analyzes the results and makes sure that those who need follow-up care to save their vision know their condition and the urgency of seeking intervention, as he did for Cheng-Thao.

Nearly 20 years ago Larry Thal ’75 traveled to Guatemala as part of a team of doctors working for a charity hospital called Hospital de la Familia (HDLF). He has been asked many times why he keeps returning. He responds with the story about his first patient there, José Engel Santos Colomo.

José lives in a small indigenous village over 300 miles to the east of Nuevo Progreso, a small town in northwest Guatemala where a San Francisco–based foundation established HDLF. José does not have access to medical care. He heard that there would be a group of American doctors providing care in Nuevo Progreso,
and at dinner one night he told his family that he wanted to go. However, José could no longer tell day from night; he had been without vision for 10 years, since the age of 40. José’s 10-year-old grandson, Miguel, promised to take him to the American doctors. For two weeks, Miguel and José walked to Nuevo Progreso, occasionally hitching rides in the backs of pickups and begging for food along the way. José fell so many times on the journey that by the time he got to the hospital, doctors did not know whether he was there for his scabs and bruises or for his vision.

Upon examination, Dr. Thal determined that José had cataracts, as mature as he had ever seen, especially for a man of 50. Cataract surgery was performed the same afternoon, but the results were not known until the bandages were removed the following morning. Miguel tried to sleep next to his grandfather, but when morning came Miguel said that he did not sleep because he was too busy praying. When Miguel led José into the examination room so Dr. Thal could remove the bandages, it was hard to tell at first if José could see anything—he was trying to blink away the mucous that had collected under the bandages. Then he looked down, and it was obvious to everyone in the room that he could see a little boy looking up at him. José ran his hands along the little boy’s cheeks and realized that this little boy was Miguel, whom he had never seen before. José began to cry, as did everyone else.

There are many people like José in Guatemala. The differences in health between indigenous and nonindigenous Guatemalans are obvious. Indigenous Guatemalans lead Central America in infant mortality, at over 84 deaths per 1,000 children less than one year old. Infant malnutrition lingers at the astronomical rate of 82 percent, and over one hundred thousand children have eye disease as a consequence of malnutrition and a lack of vitamin A. Many of Guatemala’s indigenous people speak only Quiche, Mam, or other indigenous languages. Illiteracy is rampant, at 95 percent of indigenous women, and Guatemala leads Central America in the least amount of money spent on education. When work is available, this population makes the equivalent of less than two dollars per day, certainly not enough to be able to pay for health care in addition to feeding a family.

While Dr. Thal cannot address the reasons indigenous Guatemalans have no access to medical care, he can help restore vision for those who would be deprived otherwise, and that is why he continues to return. Dr. Thal and the others who participate in humanitarian efforts like this one are rewarded with the boundless gratitude of the patients and the knowledge that they have changed lives. Every year several teams of doctors (optometrists, ophthalmologists, pediatricians, general surgeons, OB/GYNs, plastic surgeons, nurses, and surgical technicians) visit Hospital de la Familia to care for the many people like José, who often undertake lengthy journeys to see the American doctors.

Berkeley Optometry has a long history of supporting the mission of HDLF, starting with retired clinical faculty member Bernie Faibish, who accompanied some of the very first teams, even during Guatemala’s civil war. Among other faculty, students, and staff supporting HDLF over the years are Mike Arao ’77, Al Bliss (optician), Sara Chiu ’06, Brian Chou ’99, Russell Cotteral ’88, Philip Gardner ’60 MD, Kristen Griggs ’99, Dave Holcombe ’84, Larisia Hladun ’01, Rod Keener ’71, Martha Klufas ’04, Kim Matsubara ’02, Hien Nguyen ’09, Paul Peng ’86, Lee Schwartz MD, Linda Song ’99, Andrew Sorenson MD, Robert Sorenson MD, and Lynn Valdez ’03.
The town band comes out to welcome the American doctors (note the American flags).

Cataract surgery is one of the procedures provided at HDLF.

Patients often travel far, using various modes of transportation. This arthritic patient cannot walk and arrived in a lawn chair in the back of a pickup truck. The cause of her vision loss was severe myopia and astigmatism. Glasses were able to correct her vision, thanks to the ophthalmic laboratory provided by generous contributions from Carl Zeiss Meditec, Essilor, Hoya, Marchant, Signet Armorlite, and Spectera United HealthCare.

Patients begin lining up at 6:00 a.m. in order to be examined that day.

Cataract surgery is one of the procedures provided at HDLF.

One day after cataract surgery, patients await instructions regarding medications and future visits.
Over four years ago Berkeley Optometry assembled clinic faculty, staff, and students to travel to New Orleans in the aftermath of Hurricane Katrina, the costliest and one of the deadliest hurricanes in U.S. history. Though the most severe portion of Katrina missed the city, hitting nearby parishes on August 29, 2005, the storm surge caused more than 50 breaches in drainage canal levees. Eighty percent of New Orleans flooded, with some parts under 15 feet of water. Ninety percent of the residents of southeastern Louisiana were evacuated. Many remained (mainly the elderly and poor), and those who remained in their homes had to swim for their lives, wade through deep water, or remain trapped in their attics or on their rooftops.

Berkeley Optometry responded to the disaster with two seven-member teams, who provided free vision care to hurricane victims who had been relocated to a Red Cross shelter in Monroe, a small town in north-central Louisiana. The first team was headed by Dr. Ed Revelli ’77, associate dean for patient care; joined by Drs. Mika Moy ’97 and Meredith Whiteside ’97; staff member Rob Herrick; and then-student interns Tina Cheng ’06, Lesley Kwan ’06, and Tony Toy ’06. Steve Stockton, a staff member from Give the Gift of Sight, accompanied the team. The mission was generously supported by Vision Service Plan (VSP) and Luxottica Group. Local lodging was provided by the Red Cross.

Many of the hundreds of patients examined by the team had lost their glasses during the evacuation, while others had never had an eye examination. Thanks to Luxottica, the team was able to fabricate lenses on-site, which allowed patients to receive their glasses immediately instead of having to wait a week.

Rob Herrick brought along 200 stuffed animals to hand out to the kids, and they were a big hit. Both parents and children were extremely grateful. Dr. Moy remarked on how joyful the patients were. “They were very appreciative of our presence, passing the time while waiting by joking with one another. They watched us scarf down our lunches so we could see more patients, and were concerned that we should take more of a break. We heard sad stories all day long, but they were usually told with gumption and resolve to survive.”

Many patients were very sick—with diabetes, hypertensive retinopathy, out-of-control glaucoma, and anterior segment disease. One gentleman with end-stage glaucoma had never had an eye exam. Dr Moy explained to him that his reduction in vision was permanent, and that he might be blind within a year if he didn’t receive treatment. He never would have gotten his eyes checked if not for the hurricane and the ease of getting care in the shelter. He looked at the hurricane in a whole new light after that.

The students gained quite a bit from the experience as well, particularly through the evening discussions reviewing some of the cases they had seen. Their compassion and work ethic were impressive, not wanting to quit at the end of the day and ready to go on the next day. They were constantly looking for ways to help the general flow as well as each individual patient.
Berkeley students are known for their commitment to public service—according to the Office of Student Research, more than a third of undergraduates volunteer in the community during the school year. That percentage is much higher at Berkeley Optometry, where nearly every third- and fourth-year student is involved in philanthropic activities. Every Tuesday night, optometry students provide free vision screening in the Suitcase Clinic, a nonprofit, student-run organization in Berkeley that serves the area’s homeless and low-income individuals, who often lack access to adequate primary medical care. Provided by Berkeley undergraduates, graduate students, and local practitioners, services include medical, chiropractic, dental, legal, and optometric. Free haircuts and footwashing are also provided and are very popular. Donations to the clinic provide free bagels and coffee while the patients wait. Optometric services include free eye exams and eyeglasses. Suitcase Clinic patients who are screened and found to need glasses are scheduled for comprehensive exams at the UC Berkeley Meredith W. Morgan Eye Center.

According to Pam Satjawatcharaphong ’11, “My initial experiences at the clinic were extremely worthwhile. In my first few weeks of optometry school I was able to build my confidence as a clinician and see some interesting cases. I also had the satisfaction of knowing I was helping people restore their functional vision and improve their quality of life. This motivated me to run for the position of UCOSA [University of California Optometric Student Association] Philanthropy Chair during my second year of school and to become more fully involved in this organization. I soon discovered that optometric services were the most popular services provided, and that each week more patients came than the Suitcase Clinic could treat. It seemed a shame to me that people in need of eye exams and glasses were turned away each week. Working together with another volunteer at the clinic, we were able to increase the Suitcase Clinic’s commitment to the community to 20 pairs of glasses provided to low-income individuals with a valid prescription each month. Our clinic here at UC Berkeley rose to the challenge and increased the number of complimentary appointments for those patients in need of a prescription. With just a small amount of effort from a few different parties, we were able to help many more people receive the care they need, and we hope that we have set in motion a program that will continue for years to come.”

On one day in February 2009 Dr. Joy Sarver ’84, working with a dedicated crew of ten, screened 130 homeless patients, provided intermediate exams, and ordered glasses for 60. Some patients were referred to the Lions Eye Foundation for further ophthalmologic care. Over 350 pairs of reading glasses were provided! For the past year, Lions Club member Karen Flynn, a San Francisco optician, has coordinated the optometry services offered through San Francisco’s Project Homeless Connect. This project, conceived by Mayor Gavin Newsom in 2004, has since spread to 170 cities across the country, as well as Australia, Canada, and Puerto Rico. The idea is to pair volunteers with services provided by corporate sponsors and city agencies to create a one-stop, large-scale gathering for the homeless every other month.

According to Dr. Sarver, “Although we were able to screen 130 patients that day, over 700 people arrived requesting eye care. At future gatherings we hope to begin screening some of the estimated 1,300 homeless children in SF, along with their accompanying family members. With more volunteer optometrists and equipment, our goal is to accommodate everyone seeking vision care.” (Joy can be contacted at Lions in Sight, telephone 925-899-3416.)
SUSANA CHUNG, MScOptom, PhD, FAAO

Susana Chung received her optometry training at Hong Kong Polytechnic University. Her passion for low-vision rehabilitation grew as an optometrist at the Hong Kong Society for the Blind’s low-vision clinic. Her master’s work at the University of Melbourne focused on low-vision reading. At the same time, she gained invaluable experience working at the Kooyong low-vision clinic. Realizing she needed a stronger background in basic vision science to seriously pursue low-vision research, Susana joined the graduate program in physiological optics and vision science at the University of Houston. There her mentors, Drs. Harold Bedell and Dennis Levi, helped develop her interests in visual psychophysics and applying that technique to understanding how the visual system works. Upon completing her PhD, Susana did a postdoc with Dr. Gordon Legge at the University of Minnesota, after which she joined the Indiana University School of Optometry as an assistant professor. She later joined the University of Houston College of Optometry as a tenured associate professor. In summer 2008 Susana joined Berkeley Optometry as a full-time faculty member.

At Berkeley Optometry, Susana’s research focuses on understanding the factors that limit visual performance (acuities, contrast sensitivity, reading, ability to search for targets, driving, etc.) in people with impaired vision. A primary ongoing project, funded by a research grant from NIH, is to examine the factors that limit reading performance in people with age-related macular degeneration (AMD)—the leading cause of irreversible vision loss among people over 65. AMD often culminates in central vision loss, so people with AMD must rely on their peripheral vision for visual tasks such as reading, driving, and watching TV. By understanding the limiting factors of peripheral vision, Susana’s ultimate goal is to develop effective visual rehabilitation strategies for patients with AMD that can improve their functional vision. As a clinician-scientist, Susana is excited by the opportunity to integrate new discoveries in the lab into patient care in the low-vision clinic at Berkeley Optometry.

KATHY TRAN, OD, FAAO

Born and raised in San Jose, CA, Kathy Tran graduated magna cum laude from the University of the Pacific in 2000. She received her OD from Berkeley Optometry with honors, Beta Sigma Kappa, in 2005. She then completed a residency at Berkeley Optometry in cornea-contact lenses with a secondary emphasis in ocular disease.

Dr. Tran joined the clinical faculty at Berkeley Optometry in summer 2006, teaching primarily in the contact lens clinic but also in the primary care clinic and the pre-clinic. Her residency training provided experience in specialty contact lens fittings, including astigmatism, multifocal, keratoconic, post-surgical, pediatric, cosmetic, and orthokeratology/corneal refractive therapy lenses. This allows her to manage a variety of patients in the clinic and to impart her knowledge to student clinicians. Dr. Tran also handles direct patient care in Berkeley Optometry’s Refractive Surgery Center on a fill-in basis, providing consultations and pre- and post-operative patient exams.

In addition to her position at Berkeley Optometry, Dr. Tran works with Drs. Robert and Rosemary Melrose (Class of ’82) at Brookside Optometric Group, a large group private practice in Stockton. Dr. Tran is also employed by Optima Ophthalmic Medical Associates, Inc. and Mark Mandel, MD in Hayward, where she co-manages refractive surgery care alongside ophthalmologist Dr. Mandel.

Kathy loves the fast pace of the clinic, and the students and patients keep her on her toes. Though challenging and energy consuming, she also finds it fun and rewarding. The students are eager to learn and appreciative of the instructors. She remembers being in their shoes and can relate to their curiosity, challenges, and accomplishments. She strives to provide the highest quality of patient care while teaching student clinicians effectively. She stresses the importance of clinical skills, differential diagnoses, treatment plans, and patient management. Kathy finds that each day she too learns how to improve as an instructor.

KUNIYOSHI KANAI, OD

Dr. Kanai is a Japanese native who spent most of his life in Tokyo. He grew up in a family that runs an optical retailing business, and his father is a U.S.-trained optometrist. Kuni received his BS in physics at Waseda University in Japan. There he helped design a computer-simulated eye model and intraocular lenses. This experience, as well as his family background, led him to pursue the field of optometry. As the options for optometric education in Japan are limited, Kuni decided to study in the United States, and he completed the optometry program at Berkeley Optometry in 2007. His fourth-year clinical rotation included Kaiser Point West in Sacramento and Bascom Palmer Eye Institute in Miami. After graduation, his passion in clinical optometry guided him to the residency program in primary care and contact lenses at Berkeley Optometry.

Dr. Kanai is currently a member of the clinical faculty at Berkeley Optometry as well as a private practitioner in Antioch, enjoying a balance of teaching and direct patient care. He is also an image evaluator for EyePACS (Picture Archive Communication System; see article on page 14), which provides eye care to diabetic patients at remote clinics through Internet-based telemedicine. He receives fundus photos daily from several clinics located from Fremont to Los Angeles and provides management advice for those patients.

Optometry is an integral part of Kuni’s family. His brother Hiromasa recently graduated from Pacific University College of Optometry and practices in Japan. His father, Akio, has been promoting optometry in Japan and has also been deeply involved in volunteer activities worldwide. During Dr. Kanai’s fourth year, he joined the volunteer team led by his father to provide optometric care to refugees in Azerbaijan.
alumni benefits

ALUMNI AND FRIENDS TRIP TO CHINA
Due to demand for another alumni trip to China, we are planning a second trip in 2010 or 2011. Some have requested a shorter trip than 17 days, and some have requested a different time of year. Of course, we would still want to include as many of the following as possible: the Great Wall, Terracotta Warriors, Summer Palace, Forbidden City, Three Gorges Dam, Beijing, Xian, Temple of Heaven, Shanghai, Guilin, Yangshuo, 2008 Olympic sights, Hong Kong, and a Yangtze or Li River cruise. Please let us know if you have a preference. Stay tuned and be sure we have your e-mail address for further information.

OPTOMETRIC TECHNICIAN TRAINING
Having a skilled workforce is critical to effectively delivering services to patients and maximizing your time as an eye-care professional. Consider the value of having your staff complete training with a curriculum developed and designed with your needs in mind. Boston Reed College, the largest provider of allied health training nationwide, is now offering programs for tech training throughout California (Northern California: Redding, Sacramento, San Jose, Berkeley; Southern California: Mt. San Jacinto, Los Angeles, Santa Clarita, Lancaster, Victor Valley) as well as in some additional states where requested.

The course combines 148 hours of classroom instruction (21 weeks) with a 120-hour externship to provide students with a comprehensive learning experience. The program is designed to provide thorough practical instruction and training to prepare participants to work as optometric technicians, optical assistants, or ophthalmic technicians under the supervision of licensed eye-care professionals.

Course fees include books, student tool kit, consumable supplies, externship, and course completion certificate. Graduates can take the optional Certified Para-optometric Examination (CPO) offered by the American Optometric Association (AOA) or the National Opticianry Competency Examination (NOCE) offered by the American Board of Opticianry (ABO). Programs are designed for working adults, so classes are held on evenings, afternoons, and/or weekends. Externships are coordinated by Boston Reed College.

For more information about course fees, schedules, locations, and registration information, contact Boston Reed College directly at 800-201-1141 or visit them online at www.BostonReed.com.

FREE LEGAL SERVICE CONSULTATIONS
We are pleased to announce that we have renewed our arrangement with two prominent law firms in San Francisco for reduced legal consultation fees for alumni and faculty who might need legal services. This has been a popular alumni benefit that has generated outstanding feedback! If you think you might need an attorney or have a quick legal question, you may call 888-392-1960 to receive a free 15-minute consultation from attorneys at Sideman & Bancroft LLP and Futterman & Dupree LLP. Many matters can be dealt with in that amount of time. If more time is needed, you may choose to take the information you’ve already received to any attorney of your choice, or you may engage the attorney you just spoke with at rates discounted 20 percent or more. The services offered cover both transactional and litigation matters and encompass employment/human resources, state board regulatory issues, state and federal tax, commercial law, business contracts, real estate, professional liability, partnership formation and dissolution, and leasing, among others. Again, if you have any questions, please feel free to call 888-392-1960.

BERKELEY OPTOMETRY HISTORY PROJECT
Thanks to archivist/historian John Fiorillo, who has spent nearly three years working on the project, a comprehensive, illustrated, hardcover book on the history of our school is nearing completion! The history includes a discussion of early optometry and offers a fascinating look into the pioneering efforts of the optometrists who negotiated with the University for 16 years until Berkeley Optometry was established in 1923. Subsequent chapters provide a wealth of detail about the significant events and leaders of our school from 1923 until the present. Those who have had the privilege of reading portions of this history have agreed that this is a “must-have” addition to our libraries. Check your e-mail for ordering information as soon as it is available.

GLAUCOMA CERTIFICATION
Berkeley Optometry will soon be offering online courses for Glaucoma Treatment and Glaucoma Case Management that will be in compliance with the new glaucoma law SB 1406 for California optometrists. Please visit Continuing Education at http://optometry.berkeley.edu for more details as they become available.

ALUMNI REFERRAL SERVICE
Through the University Alumni Association (approximately 450,000 members), you can publicize your practice contact information to be listed as a referral resource for alums or faculty and friends of Cal. This service is only available for Berkeley Optometry alums and faculty. Whether in the Bay Area, Los Angeles, New York City, or Wheatland, Wyoming, UC Berkeley grads want to find Berkeley-trained optometrists. Go online and list yourself at http://u泊erceleyoptometry.findanalum.com.

GRAND ROUNDS
In February 2009 the school-wide Grand Rounds, offered to alums without charge, featured Dr. Harry Quigley, a world-renowned lecturer who gave a truly exceptional grand-rounds presentation on glaucoma. This was a special treat for all who attended. Stay tuned for an e-mail announcement about the next Grand Rounds once a date and topic is known.
Morris Kirschen was a member of the California State Board of Optometry, as well as chairman of the committee on admittance of the American Academy of Optometry for 13 years. After a professional practice of some 40 years he retired. He has served as president of the California Academy of Optometry for 13 years. After a professional practice of some 40 years he retired. He has served as president of the California Academy of Optometry for 13 years.

FREDERICK W. HEBBARD served as president of the Optometry Alumni Association of the University of California School of Optometry for three years in the early 1950s. Fred is the originator of the annual alumni meeting in conjunction with a home football game. It would be appropriate that for the 2013 season he would return to Berkeley, when Ohio State (where Fred serves as a professor and Dean Emeritus at The Ohio State University College of Optometry) will play Cal. (Cal plays Ohio State at Ohio State in 2012.) If there is any doubt about whom he will root for, contact him at 2100 Haverford Rd., Upper Arlington, Ohio 43220 or by phone at 614-451-0546.

Dan Grayson retired from his San Mateo practice in 2003 after a wonderful career in optometry. In 2004 his wife Sandy and he moved to Anderson in Northern California, where they bought a new home on 30 acres with a beautiful view of Mt. Lassen.

Sandy continues to work from home, while Dan is involved with community projects. They’re still able to find time for golf, riding their motorcycles, and skiing at Mt. Shasta, less than one hour from their front door. Their son lives in the Bay Area and their daughter in Arizona. Contact Dan at 530-365-4115 or dangray2@aol.com.

David Halsey continues to enjoy Wyoming and the mountains it offers. His wife, Lisa, is a grade school guidance counselor, and they have two daughters, Sarah and Cortney, both in college playing golf and softball. Dave is in a solo practice and also spends time hiking and playing music, to the delight of himself.

Janet Carter is still enjoying life in Las Vegas and keeping busy on the NBEO and ARBO board of directors. This year she is again serving as NBEO president. Her husband Jerry is doing well and both sons graduated from UNR this year. Ed is now working toward a teaching certificate in ELL (what we used to call ESL), and Andy is a first-year student at Tulane Medical School! Thirty-year reunion this year!! If you’d like to help plan something special, want more reunion information, or simply want to keep in touch, contact Janet at jkumar167@aol.com.

Michael Gallap has lived on Maui four years now with his wife Trina Sabin, who works at a local credit union. His son George and daughter-in-law Kim also live there. They have a 2-year-old son (Evan) and are expecting a daughter (Keighleigh Noelandi). George is an X-ray tech. Michael’s daughter Julie and hubby Richie Wachtel are in Littleton, CO and have a daughter (Katie, 17) and a son (Jack, 10). Julie works in real estate. Michael earned a law degree in 2001 as a hobby, but he still works as an OD at Costco and Lenscrafters on Maui.

On Mother’s Day weekend 2008, Pete Taylor and wife Marna Taylor trekked (by plane, not bicycle!) from San Jose to Columbus, Ohio to join Don Mutti, Karla Zadnik and husband Kurt Zadnik, and Berkeley Optometry honorary alum Mark Bullimore (Ian Bailey postdoc from 1988–1996) to ride the 47th annual Tour of the Scioto River bike ride from Columbus to Buckeyes Country.

Join the next generation of alumni who are committed to keeping Cal the premier public university in the world! The New Alumni Challenge invites all undergraduate and graduate alumni from the Classes of 2005 through 2010 to participate in a first-ever match that quadruples all contributions up to $1,000. A donation of $25 will increase to $100, while $1,000 will increase to $4,000! Every gift you make—no matter what size—will help preserve the vital programs that directly impact the Berkeley experience.

Times are tough for everyone, so this is a great way to make even a small gift go a long way. And there’s strength in numbers, so join the 60,000 alumni who already give to Cal—and ensure that Berkeley remains Number 1!!

Who’s eligible?
■ All alums—undergraduate and graduate—from the Classes of 2005 to 2010 (including current students who expect to graduate this academic year).

Which gifts count?
■ All gifts up to $1,000 to any school, college, or program until June 30, 2010.

To take part in the Challenge, visit newalumnichallenge.berkeley.edu.
Portsmouth, Ohio, on the Ohio-Kentucky border. The ride is a double century: 105 miles each day for two days. Drs. Mutti and Zadnik are old hands at this, having ridden the TOSRV twice before. They left Columbus early Saturday morning on a sunny, warm day. The next day it turned cold, rainy, and very blustery—with tornado sirens howling nearby! The tired riders returned victorious to a Mother's Day dinner fixed by Karla and Kurt’s 22-year-old daughter, Andra. The perfect weekend ended with the cyclists watching the romantic comedy Enchanted, which Marna, the mother of two nearly grown sons, observed was a movie she never would have gotten to watch at her house, even on Mother's Day!

Having taught first-year optics for 15 years at Berkeley and Ohio State, Mark Bullimore has moved to the second year of the program and now teaches ophthalmic optics.

Deanna Alexander was awarded AOA’s highest award on June 25, 2009—Optometrist of the Year. She specializes in low vision in her private practice in Ft. Collins, CO. She is a past president of the Colorado Optometric Association and is slated to become the first female president of the Southwest Council of Optometry. She was recognized for her notable legislative efforts on behalf of optometry at both her state and national level, as well as for numerous community volunteer activities. Congratulations, Deanna!

Deborah Steinberg has been climbing all of California’s mountains over 14,000 feet for STOP CANCER, which raises money for cancer research. Their project is called “Climb for a Cure,” and in 2008 she summited five of the 15 California “14ers”—Mt. Shasta, Mt. Sill, Middle Palisade Peak, Mt. Whitney, and Muir Peak. “This has been a humbling experience, and sometimes I feel completely over my head with this project, but knowing I’m climbing to help others keeps me focused on putting one foot in front of the other to make it to the summit.” To find out more about her adventures, visit the Climb for a Cure website: www.goldrushar.com/14ers.htm

Victoria Mar relocated to Las Vegas in 2000 and opened a practice in 2004. She joined the Vision Source group in 2007. Her husband Gordon and their two sons, Max (age 11) and Sam (age 9), enjoy life in the southwest. Victoria ran her first marathon in December 2008 and hopes to run many more in the years to come. She has a nice collection of cacti and succulents, which she enjoys on the weekends.

Rodney Lum practices in Campbell, California, and is Director of Communications for the Santa Clara County Optometric Society. Rod’s run of annual attendance at the COA House of Delegates was interrupted in 2006 by a broken hip from a cycling accident. His luck changed later that year, however, when he met his future wife, Kris. They recently celebrated their first anniversary in China and Hong Kong.

Diane Griffith See was diagnosed with breast cancer in October, 2008 after routine mammography. She had two surgeries to remove invasive cancer. Unfortunately, it was found that the lymph and vascular systems were already infiltrated by metastatic cancer cells. She began a heavy course of chemotherapy in January 2009. She has been overwhelmed and humbled by the loving support of friends and family. For more information or to contact Diane, go to her website at www.caringbridge.org/visit/dianesees.

Ross Redding and Deborah Steinberg ’88 have been married for quite some time and reside in Modesto, CA. When he’s not playing with his band and she’s not climbing California’s “14ers,” (see Class of 1988 notes below) they enjoy watching their two daughters grow, traveling, and volunteering. They both practice in multispecialty group practices and enjoy the variety, camaraderie, and challenges they provide.

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The Campaign for Berkeley officially launched on September 19, 2008. This $3 billion comprehensive campaign will support the Chancellor’s overall goals for the campus as well as the fundraising priorities of Berkeley’s schools, colleges, and campus departments.

Berkeley Optometry’s Campaign Advisory Committee will work with Dean Levi through the duration of the campaign. Members of the committee will provide their expertise and advice to ensure the success of the Campaign for Berkeley Optometry.

The three major goals of the Campaign for Berkeley Optometry include increasing endowment for student support, increasing endowment for faculty recruitment and retention, and capital enhancements (renovating the third floor of Old Minor Hall and adding a surgical suite in the Meredith Morgan Eye Center).

Editor’s note: Stacy Bracken Jacobs serves as a trustee of the UC Berkeley Foundation. The Foundation serves as an advisory group for the Chancellor, which includes providing support and advice for fundraising programs and managing and overseeing the Foundation’s endowment funds and trusts. Thanks, Stacy!

USAf Lieutenant Colonel Steve Weekes finished a four-month tour in Bagram, Afghanistan in January 2009, where he served as the optometrist in a SuperMax facility holding enemy detainees from Operation Enduring Freedom. He was replaced by none other than classmate USAf Lieutenant Colonel Patrick Clark, who inherited not only his patients but also his 9mm handgun holster. One advantage of such a practice location is that very few of their patients are “lost to follow-up.”

95 Tony Chahine reports that life and private practice are good; he just can’t understand where all the years went! Married for five years, he has no kids yet. In 2007 he became a diplomate in the Cornea and Contact Lens section of the American Academy of Optometry. He also joined the board of the Berkeley Optometry Alumni Association, which has reconnected him with Cal from sunny Los Angeles. Speaking of sunny, Tony converted his office to solar power; now his electric bill is zero. He has finished upgrading three lanes, so everything is shiny, digital, and new. This, however, contrasts with his display of antique eyeglasses going back to the late 1600s!

08 After graduating from the Vision Science program last May, Jason Ng PhD, “Longitudinal Study of Retinal Neural Function by Multifocal Electroretinograms in Diabetic Patients with and without Diabetic Retinopathy,” returned to his other alma mater, SCCO, taking a position as an assistant professor. He is enjoying his new position, although he and his family miss the cool weather and faculty club breakfasts.


Stacy Bracken Jacobs ’89 reunites with some of her former faculty—Michael Harris ’66, Don Sarver ’71, and Larry Thal ’75—at the Cal–Colorado State football game: Cal 42, CSU 7!

Berkeley Optometry is saddened to learn of the passing of the following alumni: Dr. Joseph Singer ’38 Dr. Richard Peters ’40 Dr. Harry Springer ’42 Dr. Kenneth Gove ’49 Dr. Takao Shishino ’51 Dr. Robert Turcios Sr. ’57 Dr. Victor R. Young ’67 Dr. Keith Young ’78 Dr. Elizabeth Grenier Smider ’96

We are grateful to the following individuals who have agreed to serve in this important role:

Dr. Michael G. Harris, ’66, Chair
Dr. Tony Adams
Dr. Weylin G. Eng, ’66
Dr. Kristen Griggs, ’99
Mrs. Marily A. Howeckamp
Dr. Leonard Osias, ’48
Dr. Paul H. Peng, ’86
Dr. Donald S. Sarver, ’71
Dr. Lesley L. Walls, ’58
Dr. Sheldon Wechsler, ’52
The following have made gifts, pledges, and pledge payments to funds at Berkeley Optometry other than the Meredith W. Morgan Society Annual Fund from July 1, 2008 through June 30, 2009

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Please join us in our fundraising campaign to ensure that Berkeley Optometry has the facilities and infrastructure to continue leading the profession in optometric education and vision research!

- Lecture Hall Chairs $1,000
- Clinic Teaching Modules $5,000
- Clinic Examination Rooms $10,000
- Berkeley Optometry History Archive Room $20,000
- Research Labs $20,000
- Berkeley Optometry Foyer $50,000
- Business Office $50,000
- Hall of Fame Endowed Scholarships $50,000
- Specialty Service Reception Areas $50,000
- Student Lounge $50,000
- Tang Student Health Center $50,000
- Dean’s Suite $100,000
- Eyewear Center $100,000
- 489 Lecture Hall $100,000
- Courtyard Plaza $100,000
- Surgical Center $1,000,000

The Minor Hall Capital Campaign

Contact: Tammy Spath, Director of Philanthropy, School of Optometry, 302 Minor Hall, University of California, Berkeley, CA 94720-2020
Phone: 510-642-2643; Email: tspath@berkeley.edu
http://givetocal.berkeley.edu/makeagift/optometry/
Berkeley Optometry’s Endowed Scholarships

Chancellor Robert Birgeneau has observed that “The vast majority of Americans are educated in public universities that cannot provide the financial aid packages of private universities with large endowments. Ironically, it could become more expensive for a student from a family of low or moderate means to attend a public university than for a student from a well-to-do family to attend a private college.”

Why are scholarships important to Berkeley Optometry? Scholarships are important for several reasons: they help the school stay competitive with other schools and colleges of optometry that have many scholarships to offer, they help keep student indebtedness down, and they help attract the best students to the school.

What is an endowed scholarship? Funds generated by an endowed scholarship are used in perpetuity to provide financial assistance to students who meet certain criteria specified by the donor in a gift agreement with the school. The minimum amount to establish such an endowment is $50,000.

How are these funds generated? The donated funds are invested in the University Pooled Endowment Fund in order to earn interest. Roughly five percent of the annual interest earned is disbursed as scholarships, with the remainder going back into the corpus of the scholarship, allowing for future growth.

What is a gift agreement? Gift agreements are designed to ensure that a donor’s gift is used exactly as the donor intended. The gift agreement specifies explicit details regarding the uses and limitations of a donor’s contribution. For example, the donor may wish to give preference to students who excel in a certain area of practice.

How many endowed scholarships does the school need? In a perfect world, the school would have one for each student, with each one large enough to cover all student costs. Our short-term goal is to provide 60 endowed scholarships, which would benefit 25 percent of the school’s students.

How many endowed scholarships does the school have currently? Forty-three are endowed; however, at the current time none of these scholarships cover the full cost of tuition. All of the scholarships provide partial assistance. With the cost of education rising, students are grateful for any amount of help they can receive!

For further information contact Tammy Spath, 510-642-2643 or tspath@berkeley.edu.
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Class year denotes year of OD degree.
All other degrees as noted.

FALL 2009
The Benjamin Ide Wheeler Society was established in 1987 to recognize and thank visionary individuals whose planned gifts have provided essential philanthropic support, enabling Cal to become one of the world’s great universities. Planned gifts include bequests in wills or living trusts; life income plans such as gift annuities and charitable trusts; and beneficiary designations of retirement plans, brokerage accounts, and life insurance policies.

The society is named for Benjamin Ide Wheeler, president of the University from 1899 to 1919. Not only did President Wheeler transform Berkeley from a small western public university to one of the most distinguished centers of learning in the nation, he also was responsible for arranging the first life income gift to the University of California—a charitable trust from Jane K. Sather.

With proper planning, these gifts allow alums to make significant investments in Berkeley Optometry without adversely affecting their retirement, the education of their children, or future inheritances. The funds for these gifts come from what, for some, may end up being taxes paid to the state or federal governments. As Dr. Ernie Takahashi ’68, president of the Optometry Associates of the Benjamin Ide Wheeler Society, observes, “These gifts are a very fulfilling way to give something back to our school and profession.”

Berkeley Optometry appreciates receiving information from members of the Wheeler Society regarding the specific purpose of any planned gift. This allows the University to review your gift language to ensure that your philanthropic intention for the school can be implemented. If you have provided for the University in a planned gift but have not yet informed us, please do. We are very grateful to members of the Wheeler Society for carrying on a vital tradition of support. If you would like to speak with someone about your gift planning needs, please contact Tammy Spath at Berkeley Optometry: 510-642-2643 or tspath@berkeley.edu.

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Frank Johnson Jr. ’51 †
Barbara and Marshall Kamena ’65
Suga and Henry Kawahara ’46 *
Cynthia and Jeffrey Ko ’73
David Leibel ’48
Dennis and Marilyn Levi
Joyce and A. Saul Levine ’52
Jeffrey Lieberman ’59
Edward R. Ligon ’48 and
Aloha L. Ligon
Henry Linker ’48
Warren LoPresti ’51
Jimmy Low ’52
Robert Mandell
Edwin Mehr ’41 †
Meredith Morgan Jr. ’42 * †
Thomas Nagy ’49
Lillian and Benjamin Nerenberg ’41 * †
Maurice Newman ’52
Winston Nielsen ’49 †
Leonard Osias ’48
Paul Peng ’86
Jeanette and Edward Revelli ’77
Donald Sawyer ’71
Dorothy Bates Snearles †
Charles Seger ’48
Elliott Shane †
Leonard Shenkan ’44 * †
Sylvia and Irvin Silverstein ’42
Bette and Mervyn Simon ’37 * †
Curtis Simmons ’82
Richard Simserian ’54
Branna and Irving Sisenwein
Robert Smith
Harry Springer ’42 †
Eleanor Sweigert †
Jenny and Ernest Takahashi ’68
Betty and Bernhardt Thal ’48 * †
Esther and Lawrence Thal ’75
Charlotte Tlachac ’78
Bryan Vanesian ’59
Lesley Walls ’68 and Mary Ann
Keverline-Walls ’67
Sheldon Wechsler ’52
William Wong ’73

* Founding member
† Deceased
I have often been asked why I give to Berkeley Optometry. The answer is quite simple. It’s part of my responsibility to the next generation of optometry students to help them get the best education possible. I give because I want to give, but also because my heritage has taught me to consider it a duty. In the Jewish religion, there is a tradition called Tzedakah, a Hebrew word usually thought to mean charity. However, it actually means righteousness or justice. Helping others is an obligation; it’s the right thing to do.

Why is supporting the school and its students the right thing to do? My Berkeley education opened my eyes to two wonderful professions, optometry and teaching. I have loved and practiced both for some 45 years. I can’t imagine a better job than helping young people become the best optometrists they possibly can be. I often tell people that the secret to success in life is to “do what you love and love what you do.” I’ve had the good fortune to do both every day of my professional career. As a faculty member, I awoke each morning with a passion for teaching optometry to our students. (Okay, there might have been some mornings when I woke up with a passion to just stay in bed. But those were few and far between.) Teaching students the profession you love is fun. Watching students understand new concepts and apply them in a clinical setting is an awesome feeling. Seeing the doctor-patient relationship develop between young students and our clinical population shows me that our patients and our profession will be in good hands with the next generation of optometrists.

When watching students succeed gives me such joy, helping them in any way I can also gives me joy. For nearly half a century, I helped by being one of their teachers. Now I can help them financially by providing scholarships and fellowships to ease the financial burden of an optometric education. I received a great education at Berkeley, and it was free. All I had to do was work hard, learn all I could from a truly great faculty, and enjoy taking care of patients. I didn’t have to worry about paying off student loans after I graduated. Unfortunately, today’s students do.

So why do I give to Berkeley Optometry? There’s no way I can repay the school for the wonderful opportunities it provided me. But I can help future optometrists receive the same great education and the same wonderful opportunities. Supporting the school and our students helps do this. Quite simply, it’s the right thing to do!

Michael G. Harris, OD, JD, MS
Clinical Professor Emeritus
What are your responsibilities?

My position as Executive Assistant can be categorized into three main areas: communications, events, and administrative support for the Office of External Relations. But with only three people in our “shop,” there is a lot of opportunity to do a little bit of everything. I feel really fortunate to have had opportunities to interact one-on-one with alumni and develop relationships with them.

How did you get started?

My original experience in development was somewhat accidental. I had been working at a research unit in another department on campus when we lost our funding from the state. I was fortunate to be kept on and put to work wherever there happened to be any, and one of those opportunities was in the development office. Over the course of the next few months, I had the opportunity to help organize very prominent events, attend those events and meet some of the alumni and supporters of the school, as well as work on stewardship projects. I was hooked. I enjoyed being a part of the dynamic between the school and its community so much that when this opportunity opened up at Berkeley Optometry, I was thrilled.

What do you like most about working at Berkeley Optometry?

Berkeley Optometry is unlike any other unit on the UC Berkeley campus. We have some fascinating, cutting-edge research taking place here, and at the same time our instructors are preparing our students with the most advanced skills possible to treat their future patients. I enjoy watching the students progress from their first year, when they are eagerly learning and practicing exams on each other, to their third year, when they move to the clinic and examine their first patients. It’s inspiring, and it makes me confident knowing that the future of vision care is in very good hands.

I’ve also found that optometrists are innately good people and a pleasure to work with. When it comes down to it, a basic part of their work is serving people to make their lives better. It’s academic, practical, and humanitarian—all in one place.

What accomplishment in your job are you most proud of?

I have had so many wonderful experiences since I started working here in 2006. I treasure the personal relationships I’ve developed with some of our alumni, and it’s a rewarding part of my job to know that I facilitate the relationship with our alumni and their school. I know I’ve done my job well when we see alumni become engaged or provide positive feedback.

I believe that a large part of this dynamic is our increased communications with alumni. Our first issue of Berkeley Optometry Magazine was a labor of love, and it truly was the most complex and involved project I have ever been an integral part of. I am very proud to have been a part of publishing and sending this to all our alumni, and discovering how pleased most were with our effort and with the overall direction of the school. It was satisfying and rewarding to work with my director, the writers, the editor, the designer, and the several colleagues who willingly gave their time and input to take this magazine from a vision to a reality.

What do you like most about working with alumni?

There’s so much to like about working with Berkeley Optometry alumni! Our alumni are a dynamic group of people who genuinely care about the direction of the field, who are involved in their communities, and who are proud to have been students at Berkeley Optometry. Many of them tell inspirational stories from all around the world and from all eras. I not only get to facilitate their relationship with the school, I also benefit by learning from their amazing experiences. I’m also very proud that our alumni are the best ODs you can find!
Tina Pham ’09 and Justin Kwan ’09 unpack supplies at the VOSH 2008 vision screening in Ratchaburi Province, Thailand.