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ACADEMIC PROGRAMS: ADMINISTRATION, FACULTY, STUDENTS

Administration

John Flanagan became Dean of the School of Optometry, for a five-year term beginning June 1, 2014. The prior Dean Dennis Levi returned to being a Professor of Optometry and Vision Science. Chris Wilmer became Associate Dean for Clinical Affairs in July 2014 replacing Ed Revelli who retired from the University. Rick Van Sluyters remains as Associate Dean for Student Affairs and Gunilla Haegerstrom-Porntnoy remains as Associate Dean for Academic Affairs.

Eric Leal left for Washington DC and Monica Porter was appointed as Assistant Dean of Operations and Anna Lim was appointed Assistant Dean of Finance in October 2017 and Meg St. John was appointed as Assistant Dean for Admissions and Student Affairs to replace Sharon Joyce who moved to Utah. Kristen Williams is Assistant Dean for Development and Alumni Relations. Eric Craypo is the Director of Communications.

Faculty and Alumni

No long-time faculty members have retired this last year. Two new faculty members joined us officially in July 2016: Assistant Professor Teresa Puthussery, OD, PhD and Professor Rowland Taylor, PhD. We are currently searching for more full-time tenure track faculty and expect to make 1 or 2 appointments in the spring of 2018. The School now has 32 full time clinical faculty members with a total faculty FTE count of 73 (including optical faculty members), which translates to 106 people since many
clinical faculty members are part-time.

Faculty member Melanie Mason was President of ACCCOS in 2016 and Sarah Kochik (now a VS graduate student) became president in 2017.

Former UCB faculty member Don Sarver was honored as the Alumnus of the Year for 2017 at the Alumni Reunion in October 2017. He also retired in 2017 after 46 years in practice. Faculty member Ian Bailey received the Mert Flom teaching award from the 25-year reunion class.

Professor Suzanne Fleiszig received the Max Schapero Memorial Lecture Award from the American Academy of Optometry, in 2017 and gave a presentation at the Academy Annual meeting in Chicago in October 2017.

**Optometry Faculty Research**

From July 1, 2016 through June 30, 2017, optometry faculty members generated $9.1 million in direct costs for 47 different projects. Most projects are 3–5 years and funding was received from various federal agencies (NIH, NSF, DOD) as well as private foundations and industry. Basic research accounted for 63% while clinical and translational research received 30%. The remaining was for training. This is an outstanding performance given the difficulty of receiving research funding these days.

The NEI T32 Training Grant has been continuously funded for 40 years, and the Core Grant has been funded for 39 years. The School of Optometry has one other research training grant for optometry students (T35) which is now in year 24. The T32 and T35 grants were submitted for competitive renewal in May 2017 and the Core grant was submitted for competitive renewal in September 2017.

**Professional Student performance**

Our students continue to do well on the National Board Exams required for licensure. For each of the 3 parts, UCB students perform considerably better than the national average

<table>
<thead>
<tr>
<th>NBEO Part</th>
<th>Berkeley Pass Rate</th>
<th>National Pass Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>I: Applied Basic Science</td>
<td>84.6%</td>
<td>62.9%</td>
</tr>
<tr>
<td>March 2017 (3rd year students) Class of 2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II: Patient Assessment and Management</td>
<td>98.3%</td>
<td>79.0%</td>
</tr>
<tr>
<td>December 2016 (4th year students) Class of 2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III: Clinical Skills</td>
<td>89.1%</td>
<td>77.4%</td>
</tr>
<tr>
<td>Fall 2016-Spring 2017 (4th year students) Class of 2017</td>
<td></td>
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</tr>
</tbody>
</table>
Residents

A high proportion of graduating optometry students apply for and receive a match for further residency training. For 2017, 70% of 33 applicants from the graduating class matched in the ORMS round and 5 found positions post-match for a total of 85% of the residency applicants of the 2017 graduating class placed into residency positions. 57% of the class applied for a residency position.

Vision Science graduates

Over the last 5 years, the Vision Science program has graduated 24 PhD’s and 2 MS students. Four of the PhD’s had prior health science training (OD or MD). The program currently has 42 PhD students of which 6 have prior health science training.

ADMISSIONS AND STUDENT AFFAIRS OFFICE

Staff

The academic year 2017-2018 has been positive, productive, and full of change. The office began the year staffed by Assistant Dean Sharon Joyce, Heather Iwata, Director, Assistant Director, Kait Guthrie, and Carissa Caloud, is the Coordinator of Admissions and Student Affairs position. We will end the year staffed by Assistant Dean Meg St. John, Associate Director Kait Guthrie, Associate Director Carissa Caloud, and a soon to be hired Coordinator.

Admissions Statistics

We collected 237 applications for Fall 2018 entry. Our Interview Day is on Saturday, February 3, and we plan to interview approximately 115 candidates. With the introduction of Multiple Mini-Interviews (MMIs) three years ago, we have the most holistic file review of all optometric programs. Our quality remains high, as reflected by the first year Class of 2021, average OAT AA = 358 Biology/Chemistry/ Physics (BCP) GPA = 3.47 respectively.

Ask an Advisor

The ASAO has continued the “Ask an Advisor” program, which began in spring 2005. “Ask an Advisor” was created to meet the needs of prospective students who want to set up one-on-one appointments to discuss admissions and the application process. The staff has set aside specific days each week when either a phone or in-person advising session can be arranged. This program continues to be a successful avenue in providing prospective students with information and guidance as they prepare for
the application process. We have also expanded our website to offer tips and advice to be a successful applicant.

**Diversity Outreach**

Our National Optometric Student Association (NOSA) chapter is thriving. NOSA members at Berkeley Optometry continue to host instructional workshops to teach optometric Spanish and assist with vision screenings in underserved communities. NOSA also organized and presented for the ASAO at summer visits, targeting underrepresented minority high school and middle school students to learn about STEM fields.

**National Student Leadership Conference**

The School of Optometry hosted four groups of 150 high school students from the National Student Leadership Conference (NSLC) in July and August of 2017. The conference aims to broaden the horizons of top-notch high school students, from rising sophomores to seniors, who are interested in careers in health and medicine. Participants listened to an overview of the admissions process at Berkeley Optometry, participated in an interactive presentation on visual illusions and perception, led by Vision Science PhD students, and joined activities with current Berkeley Optometry students, which included exploring the slit-lamp and testing for eye-dominance.

**OptomCAS**

Launched on July 15, 2009, all Optometry applicants now utilize the Optometry Centralized Application Service (OptomCAS). This service, which offers applicants an efficient and convenient way to apply to multiple optometry programs using a single web-based application, has been hugely successful for collecting richer data regarding applicants to OD programs in the United States and Puerto Rico. Additionally, the OptomCAS portal eliminates the need for duplicate transcripts and letters of recommendations and provides “real-time” tools for applicants to check the status of their applications. All Schools and Colleges of Optometry are participant programs; Optometry is the only health-science program that boasts full participation for all member schools and colleges.

**WebAdmit**

Admissions applications are now being processed and reviewed through WebAdmit, an extension of the OptomCAS application service that allows Schools and Colleges of Optometry to process their applications through a secured online portal; the use of WebAdmit at Berkeley Optometry has simplified the review process and increased efficiency for our Admissions Committee members. It has also significantly reduced our paper waste.
Opto-Camp

In 2006, the Admissions and Student Affairs Office launched "Opto-Camp." This past summer, we celebrated Opto-Camp’s Twelfth year! The goal of Berkeley Optometry's Opto-Camp is to introduce first generation, underrepresented pre-health science majors to optometry as a potential future career track and to prepare them to be successful applicants to optometry school. The objective of Opto-Camp is to present an "in residence" experience that will provide participants with opportunities to learn about the profession of optometry and the process of becoming an optometrist. Historically, at least half of the attendees are first-generation college students and students from low-income households.

As shown in the table below, Berkeley Optometry is seeing an increasing yield of Opto-Campers into the professional degree program, starting with 2 from the inaugural 2006 Opto-Camp and increasing to 15-16 in the last two years. Furthermore, each year, admittees who were former Opto-Campers are being selected to receive prestigious Graduate Opportunity Program (GOP) Fellowships from the Graduate Division. These GOPs provide a $25,000 scholarship for the first year of study to incoming graduate students whose backgrounds, life experiences, and/or work contribute to diversity within their discipline or in the graduate community at large.

<table>
<thead>
<tr>
<th>Class Year</th>
<th>Opto-Campers</th>
<th>GOPs Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>2013</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>2014</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>2015</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>2016</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>2017</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>2018</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>2019</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>2020</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>2021</td>
<td>15</td>
<td>0</td>
</tr>
</tbody>
</table>

Friday Visit Program

The Friday Visit Program, hosted by the Admissions and Student Affairs Office and the Berkeley Optometry Ambassadors (BOA), has been up and running since its inception in the fall of 2005. This visit program has been a successful way to introduce prospective students to the School and our program. The program is offered on Fridays, from 9:30am-12pm during the fall and spring semester and 12noon-1:30pm during the summer months. It consists of three parts: a student-led tour of the clinical and non-clinical areas of the school, Q&A with the Admissions staff, and observing pre-clinic with First Year optometry students. Our Friday Visit Program is made possible thanks to the first, second and third year Optometry students who volunteer each week to guide our visitors and share their experiences. We hosted approximately 100 individual visits last year, as well as groups from local colleges/universities and high schools.
Webinars

Our free online sessions are designed to prepare prospective students for applications and interviews and require no travel to the UC Berkeley campus. All sessions are one hour of presentation with Q&A time afterward. The topics ranged from an admissions overview to essay-writing, etiquette, and interviewing skills.

Career Management Conference

All first-year students take 4ProsOptos, a graduate course in professional development offered by the Associate Dean, Assistant Dean and ASAO staff members. 4ProsOptos includes a one-day Career Management Conference. This year, students heard from subject matter experts from the Haas School of Business. David Riemer, Haas Executive-in-Residence, gave a talk on “Personal Branding Through Storytelling,” followed by Katy Crawford, from the University’s Career Services Center, who walked the students through “Unlocking the Power of Linkedin.” The Class of 2021 also participated in talks about resume writing, networking, interviewing tips and “The First Lady's Guide to Good Graces -- Professional Etiquette & Dress for Success,” a lively lecture presented by Dr. Kathy Dumbleton.

Scholarships and Awards

In 2016-2017, the School of Optometry offered its students a wide range of both external scholarships and internal awards to help make the cost of an optometric education more affordable and accessible, and to recognize student accomplishments.

Additionally, this year the Admissions and Student Affairs Office hosted individual financial aid counseling sessions for incoming students in the Class of 2021.

Professional Student Support Funds

Thanks to the generous support of faculty and alumni, 75 Professional Student Support Funds (PSSF's) were awarded to 154 current students in the Spring of 2017.

Departmental Aid

In order to offset some of the recent fee increases, it is the goal of Berkeley Optometry to award its current students, in good academic standing with a cumulative GPA of 3.0 or above, departmental aid as available. Students are awarded a flat amount depending on their class year, ranging from $4,000 to $10,000. Awards are applied solely towards tuition and fees, and are posted directly on students’ accounts for the subsequent fall and spring semester.
Awards for Third-year and Fourth-year Students

In Spring Semester 2017, awards were announced to recognize third and fourth year students who demonstrated excellence in academics and/or clinical proficiency at the annual “New Home Night.” This annual event is a combination of an awards ceremony and a send-off social before students move on to their external rotation sites.

Fourth-year awards were announced at the annual Fourth Years Awards Ceremony. Recipients were also recognized in the Commencement Program.

The White Coat Ceremony

To celebrate the achievements of the second-year class and their transition into the third year, Berkeley Optometry hosts the “White Coat Ceremony” at the end of Summer Clinic. This year’s White Coat Ceremony will be in late August.

Starting in the Fall of 2016, all entering Berkeley Optometry students are given their White Coats as an acknowledgment of their formal entrance into the field of optometry, and to set the tone of professionalism for the next four years and beyond.

Graduation

Graduation for the Class of 2018 will be on Saturday, May 19, from 10am to 12 noon at Zellerbach Hall, followed by a hosted reception on Minor Hall Plaza, from 12pm-3pm.

Social Networking

We have over 2,000 friends on our Berkeley Optometry Facebook® page and have added an Instagram® account that is gaining momentum.

CONTINUING EDUCATION

Administration

The Continuing Education Office has transitioned to being called Continuing Education & Events. Content for Continuing Education is organized by the Continuing Education Committee, chaired by Dean John Flanagan with faculty members, Drs. Patsy Harvey, Harry Green, Anne Tasaki, and Pam Satjawatcharaphong. Lyuda Martello has assumed the role of Director, Continuing Education & Events and is joined by Program Coordinator, Quelani Penland. The office continues to provide a variety of high-quality courses for optometrists to expand their knowledge as well as
fulfill the requirements of licensure renewal by the California State Board of Optometry.

Accreditation for Participants

In 2017, the UC Berkeley Optometry CE Office oversaw and accredited over 22,000 hours of continuing education for which it issued over 3,500 accreditation letters and certificates, making it the largest CE program at an optometry school in North America.

CE Programs

The CE Programs are continually expanding to meet the ever-changing needs of today’s optometrists and the modified certification requirements. UC Berkeley Optometry’s two largest CE programs continue to be the Berkeley Practicum and the Morgan-Sarver Symposium. In 2017, optometrists from all over the United States and several other countries attended the programs. Renowned speakers, including optometrists, ophthalmologists, and physicians from across the country, provided innovative presentations on a variety of topics.

28th Annual Berkeley Practicum

The Berkeley Practicum was held on January 14-16, 2017. The attendance of over 550 optometrists and 1,080 “Doctor Days” indicated that most optometrists attended an average of two days. They came from 12 states and graduated from 16 optometry schools, with graduation dates spanning an impressive 64 years from 1950 to 2014.

The 145th Annual Karen Walker-Brandreth keynote lecturer was Dr. Claude Burgoyne, MD, Clinical Professor of Ophthalmology at the Oregon Health and Sciences University and. His lecture, “New Paradigms for Understanding, Imaging and Treating the Optic Neuropathy of Glaucoma”, provided valuable information and insight glaucoma. Among the outstanding comments he received were:

“Great, very informative. I found this an amazing lecture relevant to my patients and practice.”

“Wow – one of the most intense, passionate lectures I've ever heard; very thought provoking”

“Brilliant!”

32nd Annual Morgan-Sarver Symposium

The Morgan-Sarver Symposium was held on April 28-30, 2017, drawing 600 optometrists and 1,186 “Doctor Days.” Optometrists came from 15 states and graduated from 16 optometry schools, spanning 62 years from 1955 to 2017.

The Meredith Morgan Memorial lecturer was Dr. Andrew G. Iwach, MD. Dr. Iwach, MD is an associate clinical professor of ophthalmology at the University of California at
San Francisco (UCSF) and a faculty instructor at the California Pacific Medical Center Department of Ophthalmology. Dr. Iwach is a Fellow of the American Academy of Ophthalmology and has been its Secretary of Communications. His lecture titled “Glaucoma: News and Views” garnered high praise from Morgan-Sarver Symposium attendees as shown in their evaluation comments:

“Excellent speaker.”

“Great information and presentation, knowledgeable.”

“Good practical information/tips, interesting talk.”

**Fifth Annual Berkeley Glaucoma Day**

The 2017 Morgan-Sarver Symposium also brought the return of Berkeley Glaucoma Day, which was again presented by Drs. Carl Jacobsen, OD and Todd Severin, MD with a special lecture from Dr. Edward Chu, OD. The five-hour course featured updates on Optic Nerves, Normotensive Glaucoma Update, Contemporary Strategies for Glaucoma Treatment and, Sleep Apnea and Glaucoma. It provided 5 of the 10 Glaucoma-CE hours required for glaucoma-certified ODs in California.

**Glaucoma Grand Rounds**

The Berkeley Optometry Continuing Education office continues to provide qualifying courses to California optometrists seeking glaucoma certification. Through the Online CE Office and the Glaucoma Grand Rounds, California optometrists may take glaucoma-certification courses and examinations that are in compliance with glaucoma law SB 1406 and the California State Board of Optometry’s requirements.

Berkeley Optometry 16-hour Grand Rounds Course is the onsite “live program” at the Meredith Morgan University Eye Center. The Grand Rounds Course is equivalent to treating 15 patients for the 25-patient Case Management requirement. In 2017, one session of the Glaucoma Grand Rounds course was provided, serving 45 optometrists. During the course, the ODs examine glaucoma patients, determine treatment protocols, create management plans, and collaborate with the faculty and mentors.

**Additional CE Courses and Events**

In addition to their primary “live programs”, the CE office also participated in accrediting, administering, marketing, and facilitating other UC Berkeley Optometry CE courses, including:
Dr. Harvey continued to work directly with the California State Board of Optometry regarding recommendations and changes in CE requirements. She also attended the COA Key Person Day in Sacramento and met with a member of the State Board of Optometry to discuss and better understand optometric bills under consideration.

Dr. Harvey also described Continuing Education for Optometrists to recent graduates and students to address issues regarding CE requirements, responsibilities, and glaucoma laws, and to encourage new graduates to seek high-quality CE programs, including those provided by Berkeley Optometry.

The staff continued to provide information about the Glaucoma Certification requirements for optometrists in California as well as optometrists across the country considering the glaucoma certification in California.

For the Glaucoma Certification and Optometry Preceptorship processes, the staff assisted optometrists, addressed questions and problems, monitored the documentation of their multiple-hour requirements, and worked in conjunction...
with the California State Board to verify documents for TPA and Glaucoma licensure.

All of these CE programs enable the CE and Events Office to meet its goal to offer a broad range of CE programs for the wide variety of needs of optometrists who have graduated during the past 60 years.

**ONLINE CONTINUING EDUCATION**

**Administration**

This program is directed by Harry M. Green, OD, PhD and coordinated by Connie McCullah. Adjunctive administrative support involved Dean John Flanagan, OD, PhD and Assistant Dean of Operations, Monica Porter. This program seeks to provide continuing education of the highest quality through online delivery.

**Online Glaucoma Certification Courses**

The glaucoma certification program lectures and exams were first created in 2011 by Dr. Patsy Harvey, who updated and expanded them in 2013. In 2017, UC Berkeley continued to provide the innovative video-based online courses to optometrists seeking glaucoma certification and TPA-CE. Through this program, California optometrists may take glaucoma-certification courses and examinations that are in compliance with glaucoma law SB 1406 and the California State Board of Optometry's requirements.

Although demand for certification is expectedly waning, over 1,200 optometrists throughout California have enrolled in UC Berkeley's online glaucoma certification courses, enabling them to better detect and co-manage glaucoma patients in their clinical practices. The online glaucoma certification courses were the first CE program to provide video-based online lectures that allow optometrists to feel as if they are attending live lectures with the presenters speaking to them. The lectures are presented in 15-minute segments with intermittent “Check Point Questions” so they may learn and review the material and test themselves at their own pace.

Completing and passing the following two UCB courses (plus a third live CE program) and exams enable optometrists to become certified to treat glaucoma patients in California.

**24-hour Didactic Glaucoma Course:** Fulfills the didactic requirement by providing video-based online lectures on the detection, diagnosis, treatment, and management of glaucoma.

**16-hour Glaucoma Case Management Course:** Fulfills 15 of the 25-patient Case Management Requirement via its video-based online presentations. The course
provides over 50 cases, which range from moderate to advanced levels of glaucoma and vision loss. By completing the course and passing the exam, optometrists earn the equivalent of treating 15 of the required 25 patients.

Expansion of the Online CE Program

As our ever-changing world shifts to information delivery via the internet, it is crucial that UC Berkeley’s School of Optometry develops, and leads the field of online continuing education for the profession of optometry.

Our mission is to provide superior education by leveraging multimedia formats that not only engage the learner, but also provide methods by which education is more effective. Our approach is to use many different forms of media in a manner that produces natural flow to the content, all the while changing presentations at short intervals to maintain the learner’s attention. Keeping the quality of the education commensurate with UC Berkeley School of Optometry’s standards, however, remains paramount.

In 2017, we have engaged with a third-party vendor, Haymarket Education, which can provide a turn-key solution to the development and publishing of high quality online content. Together, we have submitted for an unrestricted educational grant from Allergan, Inc. for a multi-unit CE program on Dry Eye Disease that will include online and live content to provide a cohesive learning curriculum. In addition, Haymarket is interested in partnering with UC Berkeley to develop a fee-based CE curriculum. This partnership should be finalized in early 2018.

CLINICAL RESEARCH CENTER

Mission Statement

The mission of the Berkeley Clinical Research Center (CRC) is two-fold: (1) to explore new models and strategies for diagnosis, treatment, and prevention of ocular anomalies by conducting patient-based clinical studies/trials as well as translational research and, (2) to provide training for young professionals who are interested in, or want to pursue careers in, clinical research.

To achieve its mission, the CRC:

1. provides an infrastructure, professional staff, and examination space as well as cutting-edge equipment for advanced clinical research;
2. promotes translational research and improves patient care by accelerating translation of lab discoveries into the clinical setting;
3. bridges the gap between academia and private industry; and
4. provides research opportunities to undergraduate and optometry students, optometry residents, and clinicians (OD, MD) through internships offered to
undergraduate students, OD honor thesis students, post-doctoral clinical research fellows, and vision science PhD candidates.

Currently, the CRC provides training at all levels that includes research rotations available for OD residents 1 day/week for 1 semester; a 1-year Clinical Research Fellowship for post-OD, MD and PhD trainees; and opportunities for conducting honor OD-thesis research projects. Through these programs, trainees and clinicians gain first-hand experience in understanding challenges that come with clinical, patient-based research and obtain skills necessary for achieving different stages of clinical trial/study as well as acquiring experience in various levels of study designs and data management and analysis. Having worked in a multi-disciplinary research team like the one in the CRC has proven an invaluable experience for our trainees.

**Faculty, Researchers, Administrative Staff and Trainees**

**Director/Principal Investigator:** Meng C. Lin, OD, PhD, FAAO

**Administrative Staff:** Uyen Do (office manager); Anoop Sownderraj (study coordinator); Omowumi Oladipo (study coordinator)

**Research Staff:** Nina Tran, OD (research manager); Tiena Leung OD; Tatyana Svitova, PhD (Research Specialist); Bo Tan, PhD (Research Specialist); Yixiu Zhou, PhD (Data Analyst); Andrew Graham, MS (Bio-statistician); Tan Truong OD, PhD (Clinician Scientist); John Fiorillo (Communications Specialist); Pam Satjawatcharaphong, OD (OSIC clinic faculty)

**PhD Graduate Student:** Thao Yeh, OD (PhD candidate, UC Berkeley Vision Science); Jose Vega, OD (PhD candidate, University of Valencia Vision Science); Young Kim, BS (1st year PhD student, UC Berkeley Vision Science)

**Post-doctoral Fellow:** Wing (Eric) Li, OD, PhD; Vivien Tse OD

**Optometry Resident:** Celia Gong OD; Teresa Nguyen OD;

**Optometry Student Employees:** Kristina Lin, Jessica Vu, Lilian Thoi, Dorothy Ng, Tim Oh, Sally Wu

**Undergraduate Student Employees:** Crystal Guo, Bansri Patel, Sarah Yi, Michelle Hoang, Lauren Ong

**Research**

In 2017, we have expanded our industry collaborative relationships. In addition to our usual industry R&D collaborators such as Cooper Vision Inc, Johnson & Johnson, and Essilor USA, we have established new collaborative relationships with Verily Life Sciences, Leo Lens Technology Inc, Orinda Pharma Inc. The CRC has continued to successfully secure funds to fully support its research activities and PhD/Post-doctoral training.
The CRC continues its partnership with the Icahn School of Medicine at Mount Sinai, New York, and the University of Pennsylvania Center for Preventive Ophthalmology and Biostatistics, in understanding the effects of omega-3 fish oil on dry eye symptoms in a multi-site clinical trial Dry Eye Assessment and Management (DREAM supported by NIH NEI). DREAM is a multicenter, double-masked, clinical trial involving both optometrists and ophthalmologists from a total of 27 academic and private clinical sites.

In August 2017, we also obtained a patent for our innovative ophthalmic topical formulation (Patent number: WO 2017/147470; "Bicontinuous microemulsions") for optimizing stability of the tear-lipid layer.

Publications & Presentations

In 2017, the CRC has submitted 10 manuscripts to scientific peer-reviewed journals – 7 published and 3 currently in revision process. The CRC has also had 13 paper/poster presentations at various domestic and international meetings.

Manuscript Publications

2. Telles R, Li W., Dursch TJ, Lin MC, Radke CJ. Human Tear-Production Rate from Closed-eye Schirmer-Strip Capillary Dynamics. Colloids and Surfaces A: Physiochemical and Engineering Aspects. 2017 v.521 pp. 61-68; ISSN: 0927-7757
5. Dursch TJ, Li W, Taraz B, Lin MC, Radke CJ. Human Aqueous Tear-Film Evaporation Rate from Simultaneous Ocular-Surface Temperature and Tear-Breakup Area. Accepted. OVS 2017 November
6. Li W, Lin MC. Pain sensitivity associated with the length of the maximum interblink period. IOVS 2018

Conference Presentations


Ocular Surface Imaging Clinic

Since the inception of the Ocular Surface Imaging Clinic (OSIC) in 2012, this specialty clinic continues to receive both internal and external referrals from our optometry and ophthalmology colleagues. Aided by cutting-edge technology, this clinic has been widely recognized as an important referral clinic in the San Francisco Bay Area while establishing a synergistic alliance with the Dry Eye Clinic of the Meredith Morgan University Eye Center. To help the growth of the Dry Eye Clinic, OSIC will donate its Lipiflow (Tear Science Inc) to the Meredith Morgan University Eye Center. Effective January 1, 2018, all the referred Lipiflow treatments will be conducted in the Dry Eye Clinic, instead of the OSIC. Additionally, all administrative responsibilities and revenues generated from Lipiflow treatments and managements will be transferred from the OSIC to the Meredith Morgan University Eye Center.
**DEVELOPMENT & EXTERNAL AFFAIRS**

**Donors**

Fiscal Year 2017 saw both an increase in donors and friends as well as the expansion of areas of investment of philanthropic dollars. Berkeley Optometry alumni, students, patients and friends made new gifts and pledges adding up to over $1.4 million. The total number of new donors increased significantly and helped to make 2017 a year of outstanding support. Alumni donations are at an all-time high.

**Camaraderie**

In 2017, Berkeley Optometry’s Development and Alumni Team hosted 16 events in 9 different cities and 5 states. This year, over 1,900 people attended these events, which made for a very successful year.

Our Annual All-Alumni CE and Berkeley Optometry Celebration event sold out in record time. The CE Conference was headlined by the Thomas Peters Memorial Lecturer, Dr. Don Korb. Dean John Flanagan was able to bestow the Alumnus of the Year Award on Dr. Don Sarver, widely recognized by his colleagues and peers for his tremendous influence on the practice of optometry in the Bay Area. The class celebrating their 25th reunion presents the Annual Mert Flom Teaching Award. This past year the class of 1992 selected Dr. Ian Bailey as the teacher with the most positive influence on their optometric careers. Dr. Bailey is most deserving! Dean Flanagan was also able to honor Dr. Pamela Fong with the Michael G. Harris Service Award for outstanding service to the school of optometry. We were thrilled to see over 500 people in attendance at our celebration event. The Cal Band even joined us to help celebrate those in their reunion years.

**Website**

A total overhaul of the Vision Science website is underway and expected to be completed by Feb 1, 2018. Changes include a new design, simplified navigation structure, and a new content management system that is accessible by all key program areas.

**Magazine**

The 3rd edition of our award-winning magazine features articles on the rise of myopia and strategies for controlling it; the groundbreaking work of Dr. John Flannery, whose lab is developing gene therapies that could one day cure blindness; an interview with alumnus Dr. Vicki Hughes; and a report from Berkeley Optometry's Dr. Kuniyoshi Kanai, who recently traveled to Azerbaijan in a volunteer effort to provide eyeglasses to displaced citizens.
School Videos

Over the summer we produced two new videos on our school, which we hope will give prospective students -- and anyone else interested in our program -- a vivid (and short) overview of what we do here. We're very happy with the outcome. Both videos were made possible by a generous gift from our friends at Paragon Vision Sciences.

Clinic Brochures

We've redesigned our specialty clinic brochures so that the design is consistent across all brochures. The new brochures are two sided cards, which fit into a branded folder. This modular approach allows patients to pick cards for the clinics they are interested in, and place them in a folder for easy transport.

Volunteers

The Board of the Berkeley Alumni Association (BOAA) continues to drive alumni events, design student/alumni interaction, advise Dean Flanagan on top priorities for the school and the profession and serve as Berkeley Optometry Ambassadors beyond the walls of Minor Hall. The 2017 Board was made up of the following members: Drs. Deanne Alexander, Alexander Baker, Bernard Dolan, Ed Elliott, Kristine Eng, David Geffen, Michael Harris, Michelle Hoff, Vicki Hughes, Tim Jankowski, Eleanor Kung, John McNally, Rosemary Melrose, Marina Rocchi, Barry Weissman plus Kristen Williams (Assistant Dean, Development and Alumni Relations) and optometry students Kristi Choy and Kyle McCarthy.

Throughout the year, we had an impressive number of alumni volunteers give of their time, talents and means to work with students and the Dean for the betterment of the Berkeley Optometry community. We hope to continue to expand this program in 2018 to create a broader network of alumni volunteers.

FONG OPTOMETRY & HEALTH SCIENCES LIBRARY

The Fong Library is one of three science libraries in the Life and Health Sciences (LHS) Division of the University Library system. Our division structure extends the information services available to the School of Optometry and the Vision Science program through shared services, expertise, and operations among the Optometry, Bioscience & Natural Resources, and Public Health libraries. The Fong Library also supports the interdisciplinary UCB-UCSF Joint Medical Program.

Library staff includes 1 full-time librarian, 1 full-time paraprofessional, and 1.5 FTE student employees. The Fong Library reports administratively to the Head of the Life and Health Sciences Division.
Facilities

Located on the fourth floor of Minor Hall, the Library comprises 4,784 sq. ft. with a seating capacity of 58. There are four conference and group study rooms available for drop-in use and reservations.

Services

The Library supports the research and learning needs of faculty, students, staff, research laboratories, and clinics of the School of Optometry and Vision Science program through the following key services.

Reference
Library staff responded to 394 questions (FY 16/17) from the School of Optometry community for information retrieval assistance.

Library Instruction
13 classes were conducted with the attendance of 326 participants (FY 16/17). Additionally, online research guides are available for self-instruction.

Collections Circulation and Document Delivery
1057 print items circulated in FY16/17. Materials from the 20+ libraries of the Berkeley system can be delivered to the Optometry Library upon request. If we do not have a publication, the Library will borrow from external libraries through interlibrary loan, expedited document delivery, and the Association of Vision Science Librarians exchange programs.

Meeting Space
The Library is a popular space for meetings and group study by all members of the School of Optometry. Two rooms offer 60" monitors for presentations.

Technology
The Library offers free document scanning as well as for-fee printing services. Off-campus access to our online collections is available through EZproxy and VPN services.

Users

The primary user categories include academic faculty, emeriti faculty, affiliated academic faculty, professors of clinical optometry, clinical faculty, professional researchers, graduate students (OD and PhD), residents (OD), and visiting faculty and post-docs. The Library is also visited by optometrists and vision scientists of the Bay Area and by patients of the clinics.
Access

During the regular semester, hours of operation are:
Monday - Thursday: 9am – 7pm
Friday: 9am – 5pm
Saturday & Sunday: 1pm – 4pm

Collections

The Fong Library collection includes print and digital books and journals in the fields of optometry, ophthalmology, vision science, and health sciences. Included in these areas are anatomy, physiology, neurology, biochemistry, pathology and microbiology of the visual organs of humans and other animals; visual and color perception; ocular pharmacology; occupational and environmental vision; ophthalmic photography; low vision and blindness; history of optometry; and the social, legal, economic, and professional aspects of eye care. The health sciences collection includes textbooks in health and medicine, general resources in health and medical education, evidence-based health care, conduct of research in health and medicine, and selected resources in medical informatics. Major biomedical abstracts and indexes are available online via licensed web-based services. Most databases support the UC-eLinks service that links to the full-text of thousands of scholarly journals licensed by UC’s California Digital Library (CDL) and UC Berkeley. Our digital collections are growing rapidly, and the new materials we purchase are primarily online resources.

As of June 2017, the Fong Library collections include:

- 17,004 volumes
- 44 serial titles (journals, magazines)
- 13,179 slides (35mm)
- 605 videos
- 4,316 volumes are in the Library’s storage facility. Requesting items from storage has an efficient turnaround: <2 business days for digital scans of articles, and 2-3 business days for delivery of a physical volume.

AWARDS AND HONORS

Marty Banks
Otto Schade Prize
Named after Otto Schade – who introduced linear systems analysis to the study of human vision -- this Prize is awarded for an outstanding scientific or technical achievement in, or contribution to, the advancement of functional performance and/or image quality of information displays.

Marty Banks
Honorary Professor, Cardiff University
Cardiff University has conferred the honorary title of “professor,” from the school of Psychology, upon Dr. Martin Banks.
Marty Banks
Borish Scholar, Indiana University, College of Optometry
Scholars are selected based on their history of providing major research and scholarly contributions related to vision, patient care, clinical research, and of interest to Indiana University’s mission and education.

John Corzine
Excellence in Optometric Education Award
Received the California Optometric Association Excellence in Optometric Education Award.

John Flanagan
Distinguished Professor Emeritus, University of Waterloo
The Distinguished Professor Emeritus designation is made to faculty members who have had a distinguished record of service in teaching and research in the University.

Suzanne Fleiszig
Max Schapero Memorial Lecture Award
From the Section on Cornea, Contact Lenses and Refractive Technologies of the American Academy of Optometry, this award was established in 1972 to honor the memory of Max Schapero who was a dedicated member of the Section and the Academy.

Kenneth Polse
Dickson Emeriti Professorship
The award honors an emeritus faculty member who has an outstanding record of post-retirement contributions in teaching, research, or public/university service.

OPTOMETRY CLINICS

Leadership

In March 2017, Joshua Burt joined the clinic leadership team as the Patient Services Manager. His previous background included a recent five year assignment in the US Navy, having served as a department supervisor at the Captain James A. Lovell Federal Health Care Center. His thoughtful, inclusive management style combined with a calm and steady demeanor has provided welcome support for the patients, students, staff, and faculty at the Meredith Morgan University Eye Center.

In May 2017, Vicki Rich and George Russell were appointed as Co-Directors of the eyewear center. Vicki and George are established Berkeley Optometry faculty members and ABOC opticians with over 50 years of combined experience in the optical industry.

Vicki Rich arrived at the school in 1997 after obtaining 21 years of private practice optical experience working with her father, a graduate of Berkeley Optometry. She is an essential part of our program and has integrated her private practice experience
into her teaching, patient care, as well as management of the optical lab at the Tang Eye Center.

George Russell began at the school in 2006 with many years of experience at LensCrafters, Pearle Vision, Kaiser Optical Lab (serving 31 Northern California dispensaries), and a private ophthalmology practice. In addition George managed all aspects of the Tang Eye Center optical program for five years. In 2013, he was appointed as Eyewear Center Lab Manager at Minor Hall and has since developed the Lab Course curriculum for our students.

In June 2017, Optical Faculty member and Eyewear Center Supervisor Patty Lynch retired after 20 years with the school.

New Clinic Faculty

The clinical faculty continues to expand and are providing much needed patient care and clinical teaching for our busy clinics.

- Dr. Stefanie Chan returns to teach in Contact Lens Clinic. She was a Cornea and Contact Lens resident from 2015-2016.
- Dr. Walter Wong returned from a hiatus and is back teaching in Primary Care Clinic on Saturdays.
- Dr. Jill Lobingier completed a Primary Eye Care residency at the San Francisco VA Medical Center in June 2017. She works with us at the LightHouse Primary Care clinic in San Francisco.
- Dr. Angela Shahbazian completed a Primary Care and Community Health residency at Berkeley Optometry in June 2017. She works with us at West Oakland Health Center.
- Dr. Tracy Wang completed a residency in Primary Care, Ocular Disease, Brain Injury Vision Rehabilitation at the VA Palo Alto in June 2017. She works with us at the West Oakland Health Center and the California School for the Blind.

Faculty Changes

- The following faculty members have converted to without salary appointments: Dr. Sarah Kochik and Dr. Tonya Watson.
- The following faculty members have left: Dr. Jing Wickenburg, Dr. Taras Litvin and Dr. Cindy Sakai.

Faculty Development and Support

Clinical Staff and Faculty Meetings
Beginning in September 2017, the clinic held its first of a series of “vertical meetings” for clinical staff and clinical faculty to convene with their respective supervisors, managers, and/or department chairs for dedicated meeting time. Patient care was suspended for two hours either in the early morning or late afternoon on alternate dates to allow as many staff and faculty to attend as possible.
Mandated Reporter Training
In November 2017, the Clinic Administration held a faculty and staff development training session on the topic of Mandated Reporting for vulnerable patient populations. Patient care was suspended for two hours in the morning for this meeting time, of which one hour was reserved for Dr. Yoshiyama to speak to our clinical staff and clinical faculty regarding each member’s duty to report suspected elder abuse, proper protocol and procedures, contact information, and support services. The second hour was reserved for clinical staff and clinical faculty for dedicated departmental meeting time. In total, 44 clinical faculty and staff (22 faculty and 22 staff) were able to attend the mandated reporter training and have dedicated meeting time.

American Academy of Optometry Chicago
There was a strong showing at the American Academy of Optometry meeting in Chicago in November 2017 with 53 in-house and external faculty attending our clinical faculty meeting. Several clinical faculty members presented lectures, symposia, papers and workshops at the annual meeting.

The following clinical faculty presented either a lecture, paper, poster or mentored a workshop at the American Academy of Optometry Annual Meeting:

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Title</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ian Bailey</td>
<td>Speaker</td>
<td>Testing and Treating Reading Vision in Visually Impaired Patients</td>
<td>Ellerbrock Lecture</td>
</tr>
<tr>
<td>Ian Bailey</td>
<td>Co-author</td>
<td>Blur Discrimination in Low Vision</td>
<td>Scientific Paper</td>
</tr>
<tr>
<td>Ian Bailey</td>
<td>Moderator</td>
<td>What's New in Low Vision</td>
<td>Low Vision Section meeting</td>
</tr>
<tr>
<td>Dennis Fong</td>
<td>Co-speaker</td>
<td>Utilizing Advanced Lens Analysis to Optimize Ophthalmic Lens Performance</td>
<td>Ellerbrock Lecture</td>
</tr>
<tr>
<td>Michelle Hoff</td>
<td>Co-speaker</td>
<td>Utilizing Advanced Lens Analysis to Optimize Ophthalmic Lens Performance</td>
<td>Ellerbrock Lecture</td>
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<tr>
<td>Carl Jacobsen</td>
<td>Moderator</td>
<td>Tattoo-associated Panuveitis</td>
<td>Grand Rounds</td>
</tr>
<tr>
<td>Jasmine Junge</td>
<td>First author</td>
<td>Decreased contrast sensitivity is associated with decreased visual acuity due to contour interaction in children with Cerebral Visual Impairment</td>
<td>Poster</td>
</tr>
<tr>
<td>Kuni Kanai</td>
<td>Speaker</td>
<td>Muscle It Up <del>Control Diabetic Retinopathy</del></td>
<td>Ellerbrock Lecture</td>
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<tr>
<td>Kuni Kanai</td>
<td>Speaker</td>
<td>Hypertension in Office <del>When to have a talk, send home, and send to ER</del></td>
<td>Ellerbrock Lecture</td>
</tr>
<tr>
<td>Name</td>
<td>Role</td>
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<tr>
<td>Sarah Kochik</td>
<td>Speaker</td>
<td>Lily and the Big Blur</td>
<td>Grand Rounds</td>
</tr>
<tr>
<td>Sarah Kochik</td>
<td>First author</td>
<td>A Randomized Crossover Trial Comparing Spherical CRT Lenses to Dual Axis CRT Lenses</td>
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<tr>
<td>Eric Li</td>
<td>Moderator</td>
<td>Anterior Segment II Session</td>
<td>Scientific Paper</td>
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<tr>
<td>Meng C. Lin</td>
<td>Co-Author</td>
<td>Lack of Association Between Lid Wiper Epitheliopathy and Ocular Surface Parameters</td>
<td>Scientific Paper</td>
</tr>
<tr>
<td>Meng C. Lin</td>
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<td>Meibomian Gland Dysfunction and Symptoms More Severe Among Past Oral Isotretinoin Users Compared to Non-Users</td>
<td>Scientific Paper</td>
</tr>
<tr>
<td>Meng C. Lin</td>
<td>Co-Author</td>
<td>Examining Ocular Surface Changes and Tear Mixing under a Scleral Lens for Various Scleral Clearances</td>
<td>Scientific Paper</td>
</tr>
<tr>
<td>Meng C. Lin</td>
<td>Co-Author</td>
<td>Ocular Surface Healing with Amniotic Fluid Ophthalmic Solution in a Patient with Keratoconjunctivitis Sicca</td>
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</tr>
<tr>
<td>Meng C. Lin</td>
<td>Co-Author</td>
<td>Tear-Film Stability in Symptomatic and Asymptomatic Subjects Before and After Wearing Daily Disposable Hydrogel and Silicone Hydrogel Contact Lenses</td>
<td>Scientific Poster</td>
</tr>
<tr>
<td>Meng C. Lin</td>
<td>Co-Author</td>
<td>Effects of Single BlephEx Treatment on Cylindrical Collarettes and Ocular Comfort</td>
<td>Scientific Poster</td>
</tr>
<tr>
<td>Meng C. Lin</td>
<td>Moderator</td>
<td>Anterior Segment 1 Session</td>
<td>Scientific Paper</td>
</tr>
<tr>
<td>Maria Liu</td>
<td>Last author</td>
<td>A Randomized Crossover Trial Comparing Spherical CRT Lenses to Dual Axis CRT Lenses</td>
<td>Poster</td>
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<td>Mika Moy</td>
<td>Speaker</td>
<td>A Grand Rounds Series</td>
<td>Ellerbrock Course</td>
</tr>
<tr>
<td>Mika Moy</td>
<td>Speaker</td>
<td>Amniotic Membranes: Current Uses, Future Considerations</td>
<td>Ellerbrock Course</td>
</tr>
<tr>
<td>Mika Moy</td>
<td>Co-Speaker</td>
<td>HSV Epithelial Keratitis: Avoiding the Initial Misdiagnosis</td>
<td>Ellerbrock Course</td>
</tr>
<tr>
<td>Deborah Orel-Bixler</td>
<td>Second author</td>
<td>Decreased contrast sensitivity is associated with decreased visual acuity due to contour interaction in children with Cerebral Visual Impairment</td>
<td>Poster</td>
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<tr>
<td>Pam Satjawatcharaphong</td>
<td>Mentor</td>
<td>Scleral Lens Workshop—Basics of Scleral Contact Lens Fitting: It’s as Easy as 1-2-3</td>
<td>Workshop</td>
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<tr>
<td>Chris Wilmer</td>
<td>Co-Speaker</td>
<td>HSV Epithelial Keratitis: Avoiding the Initial Misdiagnosis</td>
<td>Ellerbrock Course</td>
</tr>
<tr>
<td>Mark Wu</td>
<td>Author</td>
<td>An unusual case of sensory strabismus</td>
<td>Poster</td>
</tr>
</tbody>
</table>

The 2017 American Academy of Optometry Fellowship Recipients from UC Berkeley were Dr. Jennifer Fisher, Dr. Tracy Wang, and Dr. Jenny Tan.
bTalks, Optometry Discussion Series

Monthly bTalks lectures have continued to thrive this year with discussions on current topics in varying specialties. About 20-25 doctors/residents and ~10 students attend each lecture and the positive feedback continues. This year’s bTalks included:

01/2017 - Laurel Hammang, OD, “Revisiting Corneal Warpage: A New Solution to an Old Problem”; Catherine Huang, OD, “To Peel or Not to Peel? (Epidemic Keratoconjunctivitis and Pseudomembrane); Tiffany Khoo, OD, “Visual Phenomena in Patients with Low Vision”; Angela Shahbazian, OD, “Adult-onset Foveomacular Vitelliform Dystrophy”

01/2017 - Lina Han, OD, “Diagnosis and Management of Accommodative Spasm”; Stephanie Jian, OD, “Pediatric Esotropia and Strabismus Surgery: What to Consider Prior to Referral”; Tara Pahlevan, OD, “Normal Tension Glaucoma in an Unexpected Population: A Case Summary and Review”

03/2017 - Mika Moy, OD, “Amniotic Membranes: Current Uses, Future Considerations”

04/2017 - Pam Satjawatcharaphong, OD, “Migraine with Aura: The Role of the Optometrist”

05/2017 - Lina Han, OD, “Double Trouble in Sagging Eye Syndrome”; Stephanie Jian, OD, “Integrating Atropine Eye Drops for Myopia Control Into Your Practice”; Tara Pahlevan, OD, “The Fluorescent Fundus”


07/2017 - Melanie Mason, OD, “Pest Control: Overlooked Eyelid Critters”

08/2017 - Vivien Tse, OD, “Do Corneal Edema and Tear Mixing Occur Under a Scleral Lens?”

09/2017 - Scott Lambert, MD, Strabismus Surgery for Nystagmus: Does it Work?”

10/2017 - Shirin Barez, MD, “Central Serous Retinopathy: Typical, Atypical, and Not”

11/2017 - Andrew Sorenson, MD, “Presbyopia and Refractive Surgery: Dealing with Space Time Distortions in the Aging Eye”
Health and Wellness

In fall 2017, the clinic administration organized the second annual flu shot clinic for all clinical staff and faculty at the Minor Hall campus location. In collaboration with the University Health Services (UHS) Occupational Health Department, the optometry clinic provided this free service to help protect our clinic employees and the patients they serve.

Continuing Education

The Glaucoma Grand Rounds course was offered in March 2017 with 46 attendees. The next offering, the twenty-second one, will be held on March 28-29, 2018. Depending on interest, it may be the last grand rounds program that we will offer. For more information, visit: http://optometry.berkeley.edu/ce/bold-introduction.

In June 2017, we partnered with CEP America to offer two slit lamp laboratory courses to physician assistants and physicians throughout the bay area. The courses were offered on June 7 and 14, 2017. Fourteen people attended the course on June 7th and 22 people attended the course on June 14th. This was the third year the course was offered. The course provided hands-on mentored practice on slit lamp skills, diagnostic eye procedures, and a lecture course on the diagnosis and management of frequently encountered eye conditions in the emergency room.

Clinical Curriculum

In summer 2017, Dr. Yoshiyama converted the classroom case-based seminar series, a component of the 430A Clinics Course, to a one hundred percent on-line, real-time course. Students were able to access all course materials, assignments, discussion topics, and quizzes online. The flipped style format introduced clinical cases and real time clinical questions in a group setting. Clinical questions posed to the class by each guest lecturer were answered by students on their laptop or mobile device in the classroom in real time, allowing students to practice their clinical decision-making and differential diagnostic abilities in a manner similar to clinic, but with more time devoted to group discussion and lecturer feedback. The series continues to feature lecturers from our clinical faculty, each sharing their clinical insights with students and encouraging active clinical thinking. With this web-based format change, the instructors’ administrative burden was greatly reduced, as all responses were automatically recorded to bCourses. Dr. Yoshiyama was able to use her administrative time to review student work and provide individual feedback if necessary.

Ongoing online glaucoma curriculum continued throughout the summer, fall, and spring terms of the 430 clinic course for the third year clinicians. This online glaucoma material enhanced students’ foundational glaucoma knowledge prior to
entering the posterior segment disease course in the spring, where additional instruction emphasized the clinical management of glaucoma.

**Changes to Clinical Training Sites/Externships**

- The West Oakland Health Center (WOHC) [http://www.wohc.org/index.html](http://www.wohc.org/index.html) is a community health clinic that was established in 1967. In August of 2017, Berkeley Optometry began staffing the newly established eye clinic and fourth year students began training at the site as part of their In-House schedule. This Berkeley Optometry run clinic within the well-established WOHC has three fully equipped exam lanes, a technology suite, patient pre-testing area, dispensary and faculty office. The partnership between Berkeley Optometry and WOHC was a celebrated event with a ribbon cutting ceremony attended by the Oakland Mayor Libby Schaaf.
- The Sports Vision Clinic [http://www.caleyecare.org/services/sports-vision-clinic](http://www.caleyecare.org/services/sports-vision-clinic) added a second day of clinic in the Fall with the addition of Dr. Jeremy Schumaker. The clinic continues to focus on sports related concussion evaluations and vision rehabilitation. Concussion vision rehabilitation and sports vision enhancement clinic services are now open to the public and referral networks with outside medical providers are growing.
- Dr. Molly Johnson replaced Dr. Andrea McClellan at the VA Miami effective February 2017.
- Dr. Emily Mathiak replaced Dr. Barbara Cohn at Crow Indian Health Services effective May 2017.
- Dr. Isabel Kazemi replaced Dr. Tonya Watson at Marin Community Clinic San Rafael effective July 2017.
- Dr. Amanda Miskewicz Zastro replaced Dr. Nazreen Esack at Omni Eye Services effective August 2017.

**Changes to Clinical Operations**

In the area of compliance there have been several changes. March 2017 marked the end of our three-year engagement with HIPAA consultant CynergisTek. We teamed with University Health Center (UHS) to enter into a new, more limited, five-year contract with CynergisTek to conduct annual risk analyses and periodic assessments of the Privacy, Security and Technical programs, as well as advisory services. The first of these were conducted in August 2017, with a Risk Analysis and Independent Verification and Validation of our Technical and Security Programs, resulting in draft scores of 81 and 98% compliance, respectively. A campus wide HIPAA compliance group, HI-SPI, continued work on initiatives and presented an annual report to a group including departmental and campus leadership in areas of risk, ethics and legal affairs. A need to standardize ledger entries for accurate reporting was identified. To accomplish these reporting improvements, procedures for ledger entries are being drafted with a planned implementation of early 2018. A campus-wide, external Payment Card Industry (PCI) credit card security audit was conducted in September 2017 and the clinic passed with flying colors.
The Billing Department saw many changes and improvements. In June, Beth Taylor was named Billing Manager, taking on day-to-day responsibility for billing processes. In October, LaTrina Knox joined the team as an in-house biller, bringing over 15 years of experience to the role. This was followed shortly by the departure of Anita Dykes, our remote biller, who had been with the clinic for almost four years. The CMS PQRS program (Physicians Quality Reporting System) was replaced by MIPS/MACRA (Merit-based Incentive Payment System) in July 2017. Eyecare Advantage was updated to accommodate the new reporting system, as required to avoid CMS reimbursement penalties. Write-off procedures were finalized, to include request forms, approvals and reportable entries for different types of write-offs. Billing metrics are being established as a way to track the effectiveness of billing processes. The planned date for tracking metrics is in early 2018.

The Information Technology (IT) department has made many significant improvements in 2017. To stay current with security needs and campus requirements, the IT team has replaced nearly 150 old clinic workstations running Windows 7 with new computers running Windows 10. These new machines provide significant security improvements to the clinic. All Clinic workstations also received a new security system called Whole Disk Computer Encryption. This is an anti-theft security function that prevents an unauthorized user from gaining access to the machine’s data if it were stolen. IT also rolled out Carl Zeiss Forum Server and Reviewer workstations for reviewing Optical Coherence Tomography (OCT) and Fundus images. The forum server allows the Reviewer workstation to pull images from multiple machines throughout the clinic, streamlining the image evaluation process. Throughout the year the IT team upgraded multiple specialty devices including installation of latest software versions for Topographer and OCT Machines. They also installed a new Visucam fundus camera in the clinic. New M&S Systems (Digital Visual Acuity Systems) were rolled out to replace standard bulb projectors in all the exam rooms in the Clinic and half of the exam rooms Pre-Clinic. New M&S Systems are benefit added systems that enhance the contrast, accuracy, and efficiency of visual testing.

The clinic’s practice management software (Eyecare Advantage) database was upgraded to the latest version to improve security. Keeping the Eyecare Advantage database current is highly recommended by the parent software company (Compulink) and is required to utilize software enhancements and features. Several Eyecare software upgrades were performed in 2017, which included significant testing and staff training for new software tools. Eyecare Advantage Version 11.1.0.0 introduced an enhanced scheduler that completely transformed the look of the scheduling screen and offered streamlined scheduling tools. It was a large coordinated effort to train staff and prepare for the upgrade. With the successful upgrade and implementation of the enhanced scheduler, our software can now interface with online appointment software. With this new capability, the IT team was tasked to find third party software systems that interface with Eyecare Advantage to help enhance our customer service and accessibility. The IT team performed extensive security evaluations of several new vendor solutions including CLX (Contact lens ordering software), 4PatientCare (Check-in Kiosks), and Clearwave (Communication
software with integrated online appointments). Implementation of these new systems is expected in 2018.

Working with the Campus Information Services and Technology (IST) department, the IT staff re-engineered our Eyecare Advantage system backup, saving more than 50% on backup costs. Also working with campus, the team performed significant system fine-tuning of the Citrix environment to improve system security and overall performance. IST also got Optometry IT onto the ServiceNow system for submitting and tracking support requests. To prepare Optometry IT for future IST service changes there was significant technical research and evaluation of Amazon Web Service for possible hosting in the near future, with the goal of improving our system security and compliance, improving system performance, and saving on our annual system hosting costs.

Our Patient Services department has experienced some major staffing changes this year. However, throughout the year, the Patient Services team has done a great job in continuing to improve the patient experience. They were able to increase the percentage of answered calls by almost 30% since January 2017. This is due in part to the growth of the team. In the summer of 2017, the patient services team implemented a volunteer program to assist the staff in maximizing the overall efficiency at the Front Desk. This has been a huge success and it appears to have laid the groundwork for a clinic-wide volunteer program geared toward maximizing the efficiency in each department within UC Optometry.

Patient services has also added more student workers to the team this year, which has been a tremendous help. Future optometry students have been able to come into our Clinic and learn more about the field of optometry while also contributing greatly to the improvement of the patient experience at the Front Desk.

The greatest progress made within the Patient Services department this year has been the hiring and training of full time, motivated, quality staff members. Five new full time staff members were added to the team this year and the department has experienced a steady incline in efficiency as a result. Our staff have done an outstanding job in helping to train and incorporate full time, part time, student workers, and volunteers into the UC Optometry team while maintaining a patient experience that is both inviting and productive.

Notable staff departures include Antonia Frankhuijzen of the EyeWear Center and Tom Michelsen of Clinic Administration. Antonia had been with the School of Optometry for 20 years and lent her expertise and fashion sense to frame selection. Tom had been with the School for 11 years starting at the front desk and then transitioning to becoming the Office Manager of Clinic Administration.

Equipment and Facilities Improvements

The effort to refresh and update our clinic spaces continued in 2017. Forty-five new exam stools were purchased to replace their old and worn out counterparts. Also
purchased in 2017 were 34 brand new chairs and stands for clinic exam rooms. This purchase allowed for the retirement of many chairs and stands that were no longer repairable due to the scarcity of replacement parts and positioned the clinic to uniformly outfit each module with newer equipment for each exam room. As mentioned previously, throughout 2017 the clinic has continued to replace the old eye chart screen and mirror systems with the purchase of 23 new electronic visual acuity systems from M&S technologies. A new LipiScan was also acquired for use by faculty and students to help aid in the diagnosis and management of dry eyes.

In October 2017, the clinic took advantage of the light patient schedule during the annual American Academy of Optometry Meeting to refresh the Contact Lens and Low Vision clinics. During this time, outmoded equipment like tangent screens and projectors were removed from exam room walls and the walls and hallways were patched and painted. This happened in conjunction with the installation of the new chairs, stands, and acuity systems mentioned above. Work of this type will continue in 2018.

Lecture room 100 received some refreshing in 2017. The room received new glass dry erase boards, a fresh coat of paint, and a much more advanced projection system.

In the Eyewear Center, the old processing room was repurposed as an additional patient care space. It is now utilized by team care as an optical dispensing and consult room. The Eyewear center also received some new equipment in the form of a lens blocker for lens fabrication, to be used by the students during their ophthalmics education.

RESIDENCIES

The optometry residency program at the School of Optometry seeks to recruit and admit the best qualified post-graduate optometrists and provide them with advanced clinical education and concentrated clinical experience in specialty areas of optometry. This mentored educational and clinical experience will prepare optometrists for life-long scholarship in patient care, education, and optometric leadership.

Administration

The Residency Program is administered by Kuniyoshi Kanai, OD, FAAO, Director of On-Campus Residency Programs, and Christina Wilmer, OD, FAAO, Director of Affiliated Residency Programs.

Current Programs

The on-campus and affiliated residency programs include the following areas of emphasis and residency training positions.
UC Berkeley Optometry

One position in each of the following areas.

- Vision Therapy and Rehabilitation: Deborah Lee, OD, FAAO
- Cornea and Contact Lenses: Pam Satjawatcharaphong, OD, FAAO
- Ocular Disease: Carl Jacobsen, OD, FAAO
- Low Vision / Ocular Disease: Marlena Chu, OD, FAAO
- Pediatrics / Primary Care: Deborah Orel-Bixler, PhD, OD, FAAO
- Primary Care / Contact Lenses: Christina Wilmer, OD, FAAO
- Primary Care / Community Health: Meredith Whiteside, OD, FAAO

Veterans Affairs Central California Health Care System Fresno

Primary Care Optometry (1 position)
Residency Coordinator: Deana Lum, OD, FAAO

Veterans Affairs Palo Alto Health Care System

Primary Care/Low Vision (3 positions)
Primary Care/Brain Injury (1 position)
Residency Coordinator: David Yang, OD, FAAO

Sierra Nevada Health Care System Reno

Primary Care Optometry (2 positions)
Residency Coordinator: Marla Plecha, OD, FAAO

Department of Veterans Affairs Medical Center, San Francisco

Primary Care Optometry (3 Positions)
Residency Coordinator: Andrew Mick, OD, FAAO

Current & Past Residents

The residency application process is very competitive. All residents match through the ORMatch process. All the positions were filled this year.

The following residents have matched with the corresponding programs for the residency class 2018:

<table>
<thead>
<tr>
<th>Program</th>
<th>Resident</th>
<th>OD Degree from</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCB</td>
<td>Teresa Nguyen, OD (PC/CHO)</td>
<td>SUNY</td>
</tr>
<tr>
<td>UCB</td>
<td>Karen Molina, OD (PC/CL)</td>
<td>SUNY</td>
</tr>
<tr>
<td>UCB</td>
<td>Shelby Leach, OD (Peds)</td>
<td>UCB</td>
</tr>
<tr>
<td>UCB</td>
<td>Meng-Hua Mo, OD (OD)</td>
<td>UCB</td>
</tr>
<tr>
<td>UCB</td>
<td>Sarah El-Khazendar, OD (VTR)</td>
<td>ICO</td>
</tr>
<tr>
<td>UCB</td>
<td>Celia Gong, OD (CLs)</td>
<td>SUNY</td>
</tr>
<tr>
<td>UCB</td>
<td>Emily Gorski, OD (LV/OD)</td>
<td>ICO</td>
</tr>
</tbody>
</table>
### The residency class 2017 (all successfully completed in June 2017)

<table>
<thead>
<tr>
<th>Program</th>
<th>Resident</th>
<th>OD Degree from</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCB</td>
<td>Angela Shahbazian, OD (PC/CHO)</td>
<td>UCB</td>
</tr>
<tr>
<td>UCB</td>
<td>Catherine Huang, OD (PC/CL)</td>
<td>UCB</td>
</tr>
<tr>
<td>UCB</td>
<td>Stephanie Jian, OD (Peds)</td>
<td>UCB</td>
</tr>
<tr>
<td>UCB</td>
<td>Tara Pahlevan, OD (OD)</td>
<td>UCB</td>
</tr>
<tr>
<td>UCB</td>
<td>Mengli Han, OD (VTR)</td>
<td>ICO</td>
</tr>
<tr>
<td>UCB</td>
<td>Laurel Hammang, OD (CLs)</td>
<td>ICO</td>
</tr>
<tr>
<td>UCB</td>
<td>Tiffany Khoo, OD (LV/OD)</td>
<td>MCPHS</td>
</tr>
<tr>
<td>FVA</td>
<td>Emily Mak, OD</td>
<td>UCB</td>
</tr>
<tr>
<td>FVA</td>
<td>Jennifer Parks, OD</td>
<td>UCB</td>
</tr>
<tr>
<td>FVA</td>
<td>Pearl Thai, OD</td>
<td>NECO</td>
</tr>
<tr>
<td>PAVA</td>
<td>Cheryl Conovaloff, OD</td>
<td>SCCO</td>
</tr>
<tr>
<td>PAVA</td>
<td>Linda Nguyen, OD</td>
<td>SCCO</td>
</tr>
<tr>
<td>PAVA</td>
<td>Jacqueline Su-yuo, OD</td>
<td>NECO</td>
</tr>
<tr>
<td>PAVA</td>
<td>Tracy Wang, OD (TBI)</td>
<td>UCB</td>
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<tr>
<td>RVA</td>
<td>Julie Minnix, OD</td>
<td>ICO</td>
</tr>
<tr>
<td>RVA</td>
<td>Jennifer Hua, OD</td>
<td>Western</td>
</tr>
<tr>
<td>SFVA</td>
<td>Yangdi Chen, OD</td>
<td>UCB</td>
</tr>
<tr>
<td>SFVA</td>
<td>Jill Lobingier, OD</td>
<td>UCB</td>
</tr>
<tr>
<td>SFVA</td>
<td>Anna Wang, OD</td>
<td>SUNY</td>
</tr>
</tbody>
</table>
Shared Educational Components

In addition to patient care, all residents participate in the following educational program components. These are required for successful completion of the program and the awarding of the residency program certificate.

**Resident Lecture Series**
All residents prepare and present three oral case presentations during the program year. Residency mentors, faculty members, and interns attend the resident lectures during the fall and winter. In the summer the program presents the Resident Forum, which is open to community optometrists as well as affiliated personnel. The 2017 Resident Forum was the 14th annual event. The following were held during the 2017 calendar year.
- Veterans Affairs Palo Alto Health Care System February 3, 2017
- Resident Forum: UC Berkeley School of Optometry June 11, 2017
- Veterans Affairs Palo Alto Health Care System September 29, 2017

**Resident Paper**
All residents must complete a paper of publishable quality on an interesting case, clinical research or literature review on a clinical topic.

**American Academy of Optometry**
Attendance at the AAO meeting is not a requirement of the residency program but highly encouraged. The following residents had posters accepted at the AAO meeting in Chicago 2017.

1. Shelby Leach (UCB 2018): "A Rare Case of Orbital Desmoid Fibromatosis in an Infant"
2. Celia Gong (UCB 2018): "Managing hypoxia using a scleral lens in an aphakic patient with a decentered corneal graft"
3. Meng-Hua Wu (UCB 2018): "Spontaneous Bilateral Vitreous Hemorrhage in a Young Healthy 21-year old"
4. Emily Gorski (UCB 2018): "Cone Preservation in Retinitis Pigmentosa"
7. Sandra Harpster (SFVA 2018): "A Confirmed Case of Posterior Placoid Chorioretinitis Amidst the Resurgence of Syphilis"
8. Alyssa Louie (SVA 2018): Drug-Induced Intraocular Inflammation: A Rare Complication of a Commonly Used Drug

**Other Continuing Education/ Invited Lecture Opportunities**
- Emily Gorski (UCB 2018)

Angela Shahbajian (UCB 2017)
- Opt 236B: Systemic Diseases and Ocular Manifestations
  - "Vascular and Endocrinology Cases", February 2017
  - "Neuro Cases", April 2017

Tiffany Khoo (UCB 2017)
- Optometry’s Meeting: “Visual Phenomena”, June 2017

Tracy Wang (PAVA 2017)
- Santa Clara County Optometry Society lecture: "Review of Lid Lesions", May 2017
- TBI Research Forum: "Patterns of visual field defects due to TBI", March 2017
- Stanford School of Medicine Neuroscience Forum: "Patterns of visual field defects due to TBI", June 2017

Yangdi Chen (SFVA 2017)
- Alameda Contra Costa Counties Optometric Society Lecture: "Clinical Spectrum of Non-arteritic Ischemic Optic Neuropathy", January 2017
- San Francisco Optometric Society General Meeting: "Topical Corticosteroids for Uveitis Macular Edema", February 2017

Accomplishment

American Academy of Optometry Fellow
The following individuals met the fellowship requirement and became a fellow immediately after residency training at AAO Chicago this year.

- Catherine Huang (UCBSO 2017)
- Tracy Wang (PAVA 2017)
- Anna Wang (SFVA 2017)

Notable items

ACOE Site Visit
In April 2017, the Department of Veterans Affairs Medical Center, San Francisco (SFVA) Primary Care Residency and the Veterans Affairs Palo Alto Health Care System (PAVA) Primary Care/Low Vision Rehabilitation Residency underwent ACOE site visit for their residency programs. As a result, both programs are fully accredited without any recommendations or suggestions. The next site visit is scheduled in 2025.

SUMMER RESEARCH TRAINING PROGRAMS

NIH/NEI T35 Program

Goals
UC Berkeley School of Optometry runs a short-term (10 weeks) summer research-training program for OD students — the T35 training program — whose over-riding is to introduce talented students to clinical and/or translational research by way of developing their interest, awareness, and enthusiasm for a career in biomedical or
behavioral research. Training is provided within the laboratories of 23 faculty mentors in the School of Optometry, who are also involved in the training of pre-doctoral research students and postdoctoral fellows are involved in the Graduate Program in Vision Science. Some mentors also train graduate students in other disciplines (e.g., neuroscience, computer science, molecular and cell biology, psychology and infectious disease), and many have faculty collaborators from other disciplines, providing our trainees with a window into the cross-disciplinary research environment.

A wide range of basic science as well as clinical research projects are on-going in the laboratories of the mentors, offering numerous opportunities for involvement by the short-term trainees. Optometry schools from across the country are targets of our recruitment efforts aimed at attracting a diverse pool of talented health professional students to our short-term training program. The long-term goal is to encourage clinicians to pursue advanced research training and/or continue involvement in research after completion of their professional training. As a stepping-stone to research careers, we encourage UC Berkeley trainees to enroll in research honors after completing this summer training program.

**Funding Support & Recruitment**

Our summer research-training program is supported largely by an NIH/NEI T35 training grant. One of the best indices of its success is its record of continuous funding — 25 years, with a further 5 years of funding from the NEI awarded in 2014. This training grant supports the recruitment annually of 12 trainees from Optometry programs from around the US, with the specific target being first-year students. Unfortunately, this grant does not allow for the appointment of students who are not U.S. citizens or permanent residents. To cater to the needs of this excluded group, UCBSO has used alternative funds to support an average of one student every other year. Recruitment from the ranks of more senior students is precluded due to other competing course commitments for the students of most programs. Nonetheless, every effort is made to support the continued involvement in research of UC Berkeley trainees, with the UC Berkeley Honors in Research Program proving to be a suitable conduit.

Faculty mentors for both Optometry and Vision Science programs are recruited from the pool of established vision science and clinical science researchers, with most mentors being faculty members in the UC Berkeley School of Optometry and also members of the Vision Science Group. Each T35 trainee is assigned a faculty mentor, matched according to research interests where possible, with faculty mentors only rarely assigned more than one trainee to ensure there is time for quality mentorship, which is frequently supplemented by mentorship from clinician scientists, post-doctoral fellows and/or graduate students.

**Applicants, Trainees & Projects**

This program remains highly competitive, with the applicant pool rarely dipping below 20. In 2017 there were 24 applicants of whom all but three was from UC Berkeley School of Optometry. The remaining students were from the Southern
California College of Optometry, College of Optometry of Pacific University and State University of New York College of Optometry. Because many schools of optometry are without such training programs, an inclusive policy is applied in selecting trainees, with the positive benefit of contributing to diversity and generating ambassadors to serve as recruiters at other schools. Unfortunately, ethnic diversity is still very limited within our pool of trainees, although females are very well represented in the pool. As a strategy to further improve the diversity of our applicant pool, outreach to faculty involved in equity/diversity activities in the various programs is on-going. Another new strategy to improve performance on this front is to use, as communication channels, student chapters of the National Optometric Association, whose membership is largely composed of minorities. It is hoped that the yield from this strategy will improve, with a local student (NOSA) chapter now re-established.

The included table provides details of the successful applicants, including the Optometry program in which they were enrolled, the titles of their research projects and their mentors. The wide range of research undertaken by trainees reflects the equally wide range of on-going research within the School of Optometry/Vision Science Program. The strong translational emphasis of their research is also noteworthy. While the heavy course load carried by our 2\textsuperscript{nd} year OD students is a significant deterrent to remaining active in research on completion of the T35 summer research program, at least two students have remained active in research and a number of the trainees are expected to apply for research honors at UC Berkeley, after completion of their 2\textsuperscript{nd} year.
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Project Title</th>
<th>Advisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briana Broussard</td>
<td>BERK</td>
<td>Measuring the effects of high order aberrations on aniseikonia in keratoconus</td>
<td>Cliff Schor/ Sangeetha Metlapally</td>
</tr>
<tr>
<td>Connie Chen</td>
<td>BERK</td>
<td>Lipid mediators and sex-specific regulation of immune responses in dry eye disease</td>
<td>Karsten Gronert/ Jessica Wei/ Rebecca Flitter</td>
</tr>
<tr>
<td>Justin Duong-Mac</td>
<td>BERK</td>
<td><em>Pseudomonas aeruginosa</em> adaptation to the cornea-contact lens environment</td>
<td>Suzzi Fleiszig/ Matteo Metruccio</td>
</tr>
<tr>
<td>Mohamed El Zeiny</td>
<td>BERK</td>
<td>Oculomotor changes after VR exposure</td>
<td>Dennis Levi/ Angelica Godinez/ Elise Harb</td>
</tr>
<tr>
<td>Angelica Estrella</td>
<td>BERK</td>
<td>Characterizing differences between S and L/M cones in primate retina</td>
<td>Theresa Puthussery/ Jacqueline Gayet</td>
</tr>
<tr>
<td>Jessica Gee</td>
<td>BERK</td>
<td>The effect of stimulus size on the measurement of visual function</td>
<td>John Flanagan/ Luke Chong</td>
</tr>
<tr>
<td>Claire Henry</td>
<td>BERK</td>
<td>The effect of longitudinal chromatic aberration on accommodation</td>
<td>Marty Banks/ Steve Cholewiak</td>
</tr>
<tr>
<td>Danielle Kolschefski</td>
<td>BERK</td>
<td>Teller acuity cards versus Berkeley preferential looking</td>
<td>Deobra Orel-Bixler</td>
</tr>
<tr>
<td>Jamie Ngo</td>
<td>BERK</td>
<td>Optimizing gene therapy delivery to mitochondrial retinal eye disease</td>
<td>John Flannery/ Cécele Fortuny</td>
</tr>
<tr>
<td>Irene Tan</td>
<td>SCCO</td>
<td>A study of time- and dose-dependent effects on pupil size and accommodation of topical atropine applied in low concentration</td>
<td>Maria Liu/ Sarah Kochik</td>
</tr>
<tr>
<td>Amy Wen</td>
<td>BERK</td>
<td>Adherence to follow-up after telemedicine-based diabetic retinopathy screening</td>
<td>Jorge Cuardos/ Taras Litvin</td>
</tr>
<tr>
<td>Felix Wong</td>
<td>BERK</td>
<td>Does adapting to &quot;whitened&quot; videos affect fixational eye movements?</td>
<td>Susan Chung/ Mehmet Agaoglu</td>
</tr>
</tbody>
</table>
My Optometry Internship Abroad (MyOpIA) Research Exchange Program: A pilot University College of Southeast Norway (USN) - UC Berkeley (UCB) Vision Research Collaboration

Goals
This new pilot summer research training program, which represents a collaboration between the USN Kongsberg Optometry Program and UCB School of Optometry has as its main short-term goal, to introduce profession Optometry students to clinical and/or translational research. Through an 8-week research internship, students are introduced to hands-on research related to myopia and refractive error development, backed by research-related training through face-to-face and on-line seminars/workshop. At the same time, trainees are exposed to the similarities and differences in the scope of optometric training and practice, and cultural differences between the US and their host country of Norway. The longer-term goal of this program is to encourage students to pursue advanced research training and/or involvement in research as a career goal after completing their professional training. In this way, the program complements UCB’s NIH/NEI-funded T35 program. Some participants may also have opportunity to co-author publications or present their work at the American Academy of Optometry or other scientific meetings.

Funding Support & Recruitment
This 2-year pilot program is funded by a grant from Norway and was run for the first time in 2017. The program requires a full-time 8-week commitment during the summer. Funding supports 2 students undergoing Optometry training from each of the UC Berkeley and USN programs and provides stipends, travel support and miscellaneous expenses incurred by international students. As with the T35 program, recruitment involves a formal electronic application process, and in this case, students are also interviewed, as successful applicants are expected to serve as ambassadors for their respective home country and training program.

Applicants, Trainees & Projects
Applicants are limited to UC Berkeley and USN Optometry students. Trainees (2 students from each site) spend two weeks of the 8-week training program at their home University and the remaining 6 weeks at the partner host university, timed to allow all 4 trainees to spend 2 weeks together at each of the host sites, i.e., in Kongsberg and Berkeley at the beginning and end of the program respectively. The faculty mentors at each site are both involved in myopia research and are also the grant co-PIs – Professor Christine Wildsoet at UCB and Professor Rigmor Baraas at USN. Further mentoring support for the trainees is provided by 2 PhD graduate students, one at each site, whose research is closely tied to the projects allocated to the trainees. Serving in these roles are Elise Harb from UCB and Lene Aarvelta Hagen from USN, both of whom are also clinicians. In each of the two years of the program, one of them is intended to visit their international collaborator. In 2017, Lene Hagen visited UCB for 2 weeks. For this 2017 summer research exchange program, there were 6 applicants from UCB's Optometry program and 8 applicants from USN's Optometry program. The successful applicants were Dorothy Hsu and Michelle Holmes from UCB and Maren Søberg and Sara Dolva from USN.
This collaborative research training program offers a unique opportunity to address some of key issues for understanding the current myopia epidemic, specifically the role of behavior and lighting in the apparent protective effect of outdoor activities. In Kongsberg, the days are extremely long in summer and extremely short in winter, with outdoor experiences, including light exposure of the local population being necessarily very different from that of Berkeley residents. The student population of USN and Norway overall also has a very low prevalence of myopia, while the local UC Berkeley community has one of the highest in the US. Thus these sites lend themselves naturally to the main research project of the trainees, which was to track and characterize the outdoor experience of young adults spanning a range of refractive errors using wearable technologies. In addition, choroidal imaging using advanced optical coherence tomography (OCT) was performed to assess the influence of habitual outdoor behavior and associated light exposure on choroidal thickness. At the end of the summer, trainees were required to present their research findings to their peers as well as to submit individual written scientific reports covering their summer research.

Beyond hands-on research, the trainees attended regular seminars and workshops (e.g., on coding, graphical analysis, imaging, etc), to advance their research and clinical skills. They were also given opportunity to shadow clinicians at each site, thereby providing opportunity for them to learn more about the similarities and differences in Optometric training (i.e., OD graduate program in US and BS and MS programs in Norway), and Optometric practice in their home and host countries, as well as cultural differences in attitudes to the same.

OPTOMETRIC STUDENT ASSOCIATION

Clinical Preparation

UC Berkeley Optometry students appreciate how receptive the school administration is in addressing student feedback and enhancing curriculum and facilities. Recent changes are preparing students for clinic and advanced eye care management.

Pre-Clinic Updates

To facilitate the transition from 2nd year into clinic, the pre-clinic team revised the team care experience to include more one-on-one patient time. All of the computers in the pre-clinic rooms have been installed with the most up to date EMR system to mimic the one used in the Meredith Morgan Eye Clinic to better familiarize students with the system. The pre-clinic team also organized an intensive final practical for 2nd year students that included the completion of a comprehensive eye exam, integrated with entries into the EMR. Furthermore, they implemented EMR proficiency for the 2nd year students before entering into their summer clinic rotation. Lastly, many of the
pre-clinic rooms have been updated to include M&S screens; an automated Visual Acuity chart.

**BIO Boot-Camp**

Second and third year students continued the tradition of organizing seminars to personally tutor first year students with their binocular indirect ophthalmoscopy skills and clinical thinking. Students remember how difficult new concepts can be and return every year to help the incoming students.

**Equipment Fair**

To help students make a well-informed purchasing decision, the UCOSA Equipment Committee held multiple informational sessions hosted by equipment representatives from ophthalmic instrument companies such as Pioneer, Heine, Keeler, Welch Allyn, and Ocular Instruments. These informational sessions were held to inform students about the companies and their products to assist their equipment purchasing decisions. The annual Spring Equipment Fair was held in early February, where equipment distributors and vendors came to UC Berkeley to showcase their equipment and inform students in a hands-on manner.

**Intro to Clinic**

The upperclassmen volunteered their time to help orient incoming third year students into clinic to make the transition smoother.

**Scleral Lens Workshop**

In coordination with Valley Contax, this hands-on workshop was developed to provide more opportunities for third year students to practice fitting scleral contact lenses in April. Three patients with keratoconus from the Contact Lens department were also present to assist Dr. Roya Habibi of Valley Contax teach the course. Due to the demand, this was split into two sessions on that day.

**NBEO injections practice**

With supervision from Stephanie McGovern RN and Dr. Meredith Whiteside, UCOSA organizes groups of fourth year students to have private practice time for the Injections Station on Part 3 of the National Board Examination of Optometry (NBEO). The Injections Station on NBEO assesses the student’s ability to perform intravenous injection for fluorescein angiography and intramuscular injection of epinephrine for anaphylactic shock on a model arm.
**NBEO Berkeley Study Guide**

UCOSA continually revises, updates, and improves a study guide trilogy that is designed to prepare all students of optometry for both Part 1 and Part 2 National Board Examination of Optometry (NBEO). Part 1 of the NBEO tests applied basic science and Part 2 focuses on clinical science. Part 1 is currently being updated. Part 2 was revised in early 2015.

**American Academy of Optometry**

More than a hundred students attended the annual American Academy of Optometry meeting in Chicago from October 10-14th. New students also completed the Student Fellowship by attending a variety of CE lectures, seminars, and grand rounds.

**Commitment to Service**

In addition to participating in annual service programs, UCOSA partners with local optometrists, legislators, organizations, and schools to increase access to eye care.

**Volunteer Optometric Services to Humanity**

The primary mission of VOSH International is to facilitate the provision and the sustainability of vision care worldwide for people who can neither afford nor obtain such care. Berkeley Optometry students work with VOSH in order to provide eye health care on a global scale. For the past 19 years, Berkeley has played a vital role in coordinating with VOSH-CT to send students to provide eye exams to under-served populations in Nicaragua. From January 9-12, 22 Berkeley students, 12 MCPHS students, and 10 SUNY students worked alongside 8 optometrists to provide eye exams to 4,480 patients, which is over 1,000 patients more than the previous year. In the past, Berkeley has also sent students to China, Vietnam, and Mexico. In addition to coordinating service trips, VOSH teamed up with the American Optometric Student Association (AOSA) in 2016 in order to help raise over $2,000 for World Sight Day.

**Suitcase Clinic**

Berkeley Optometry students provide vision screenings and referrals for free eye exams to the Berkeley community at monthly Suitcase Clinic visits. Suitcase Clinic currently operates three weekly multi-service drop-in centers in the city of Berkeley: the General Clinic, the Women’s Clinic and the Youth Clinic. The General Clinic targets low-income and homeless populations in Berkeley, receiving up to fifty patients per night on average. For over twenty years, the General Clinic has been a safe and successful place for homeless individuals to receive medical or other professional services, to pick up hygiene supplies, to talk to a lawyer, or simply chat with Berkeley Optometry students.
World Sight Day

Our local VOSH Chapter partnered with the American Optometric Student Association (AOSA) and NOSA to support World Sight Day. VOSH leaders established a GoFundMe project to collect donations online. The AOSA established a week-long fundraising program that encouraged donations through the friendly competition of Miles-for-Sight. Students were encouraged to exercise and take selfies to promote awareness. In total, the Miles-for-Sight competition raised over $3000. Combing all programs, our students and faculty were able to surpass our fundraising goal.

Hot Meals

UCOSA Philanthropy partnered with St. Mark’s Episcopal Church Hot Meals program to put together an excellent meal for homeless individuals every third Saturday of the month.

EyeChat

EyeChat is a new student organization founded in 2017. The club is dedicated towards bringing student awareness and insight to unconventional career paths that exist after graduating from optometry school. Guest speakers from industry, research, and other non-private practice fields come to share their career experience, educate students on technological advances in optometry, and network with students. We plan to provide a meeting 3-4 times per semester with a different guest lecturer who can share their unique experience in their optometric career path.

Eye-ball

Eyeball is an annual gala organized by the first-year optometry class towards the end of the year where students enjoy an evening with friends, significant others, and classmates. Last year, the Yule Ball (Harry Potter) themed Eyeball was a major success at the Oakland Zoo’s Snow Building, leaving many looking forward to this upcoming year’s Eyeball tradition.

Skit Night

Before the end-of-the-year final exams, students, faculty, and professors gather for a relaxing night of humor, talent, and healthy competition. Skit Night is the golden opportunity to poke fun at anyone in the school community (all in good fun), including professors, classes, and students. The night transforms into a pure talent show, that including skits, videos, and songs that embrace the life of an optometrist.
Student Quiz Bowl

First through third year students compete in a Jeopardy style contest for the chance to represent Berkeley Optometry at Student Bowl, the national competition at AOA’s annual Optometry Meeting. A panel of distinguished faculty members moderate and judge the event, bringing the whole school together for a night of class rivalry. In 2017, the students cheered on Kenny Tran, a third year optometry student, as the representative for Berkeley Optometry in Washington D.C. In addition, Berkeley students were able to network with doctors and participate in continuing education classes, supplementing knowledge learned in courses.

Rafting Trip

The annual rafting trip is focused on having some fun in the sun while cruising in a 10-12 person raft on the American River near Sacramento. The trip down the mellow rapids is a great way to get to know classmates better. Popular among all Berkeley optometry students, the rafting trip is a chance to gain insight from upper-class students.

Sib Fest

Sib Fest is an annual tradition where optometry “siblings” have an opportunity to meet one another, while enjoying food, beverages, and games. At the beginning of the year each entering first-year student at Berkeley Optometry is assigned to a big brother or sister who serves as a mentor. Sibs provide valued advice on courses, optometric equipment, and clinical experience. Berkeley Optometry families can be traced back 23 generations!

Ski Trip

The yearly trip to Tahoe is a nice reunion for optometry students after Winter Break. Students enjoy the slopes and spend three days in a cabin with all optometry classes.

Optometric Legislation

Students are encouraged to participate in local, state, and federal advocacy of the profession. Students have the opportunity to explore local societies, California Optometric Association, and American Optometric Association.
California Optometric Association: Legislative Days

In April, Berkeley Optometry students will travel to Sacramento to meet with representatives from local societies, the trustees of California Optometric Association, and other student leaders to discuss how California optometrists can better serve the public through policy changes.

California Optometric Association: House of Delegates

In February, Berkeley Optometry will head to San Diego with Marshall B. Ketchum College of Optometry, Western University College of Optometry, and California optometrists. The students and doctors met with senators and assemblymen to discuss optometry’s role in health care reform. To narrow the provider gap in primary care, optometrists currently monitor patient weight, blood pressure, and provide basic primary care and preventative services in California.

American Optometric Association: House of Delegates

In June, students attended House of Delegates in Washington D.C. to learn the goals and policy of the American Optometric Association (AOA). The House discussed thoughts on board certification, expansion of the AOA’s presence via social media, and continuing education. The event also provided an opportunity for UCOSA members to connect with other student leaders across the country.

Organized Optometry Kickoff

During orientation on August 26, incoming first year students were greeted with sandwiches from Ike’s Love and Sandwiches and updates about active optometric legislation. To demonstrate the tripartite levels of optometric advocacy, UCOSA representatives arranged booths with information about local societies, California Optometric Association, and American Optometric Association.

American Optometric Association Congressional Advocacy Conference

In the spring, Berkeley Optometry students -- along with hundreds of students and doctors -- visited Washington, D.C. to educate legislators about the role of optometry in primary care. Eleven students represented Berkeley Optometry at the conference, surpassing previous records of student attendance from our school. Some major initiatives discussed at this year’s conference included expanding the number of optometry specific residency positions at Veteran Affairs hospitals, combating insurance specifications related to ophthalmic labs, and reinforcing contact lens legislation to protect consumer health. Optometry students nation-wide also have relayed concerns about the exclusion of optometry students from the National Health
Service Corps, a federal loan repayment program for recent graduates who provide healthcare to rural or low-income areas.

Graduate Assembly

First and second year optometry students represent Berkeley Optometry in monthly Graduate Assembly meetings, a forum for graduate students to express concerns, suggestions, and to vote on university issues. The Graduate Assembly delegates assist all Berkeley Optometry student groups, UCOSA included, in applying for student group funding. In 2015, the Graduate Assembly helped raise awareness of the Professional Degree Supplemental Tuition increases.

Professional Development

To ensure students can achieve career goals, UCOSA has worked to provide student events that introduce students to alumni networks, different applications of optometry, and practice management.

Bay Area Optometric Council Mentorship Program

This club is dedicated to bringing students professional guidance. We have a committed group of local doctors from many different scopes of practice available to answer our questions about the next steps after graduation. We provide 2 gatherings with all the mentors and mentees, where we hold question and answer panels and small group round robin networking activities. Each student is paired with a mentor, who they must meet with a minimum of 2 times throughout our October - April cycle.

Optometric Business Management Club

Optometric Business Management (OBM) Club's mission is to orient students with the knowledge required to succeed in the business world upon graduation. In addition to didactic education, OBM brings speakers who focus on topics such as business management skills, communication skills, and industry current events. OBM provides presentations on skills such negotiating contracts, different practice modalities, and forming a business plan. OBM encourages students to attend conferences and network with other ODs by providing travel grants made possible by various sponsors, including one of our instructors, Dr. Michelle Hoff. If you are a third or fourth-year optometry student, this is a great way to secure a job. OBM provides board members the opportunity to organize events, improve leadership skills, and working efficiently as a team—skills necessary to be successful in running a business.
NOSA

NOSA's mission is to increase the diversity of students within the schools and colleges of optometry as well as to increase patient care of minority populations. Additionally, NOSA educates our students in optometric Spanish and Mandarin in order to provide better patient care to these populations. NOSA also promotes Berkeley Optometry and the field of optometry to youth in our local community and helps our students become more culturally sensitive when working with patients in the clinic.

Beta Sigma Kappa

UC Berkeley’s BSK chapter welcomed 46 new members and graduated 32 fourth-year students. The current 114 members have continued the tutoring tradition, providing over 270 hours of private, group, and pre-clinic tutoring. BSK also hosted two boot camps, one for first years to practice retinoscopy skills, and one for second year students that are transitioning to patient care.

Western Regional Conference

The Western Regional Conference is organized by Trustees of American Optometric Student Association (AOSA). The theme of this year’s event focused on the importance of advocacy, both at the student and professional levels. Student representatives from Berkeley Optometry were in attendance in preparation for the event’s return in 2018.

Optometry Professional Development Day (OPDD)

The Admissions & Student Affairs Office and Alumni Relations work with UCOSA in planning an event focused on career development. Recent speakers include Dr. Blake Kuwahara, founder of Focus Group West, a multi-disciplinary boutique design firm that takes a comprehensive approach to branding and designing for eyewear and fashion companies. Students were also treated to a panel of recent graduates who gave their perspectives on their chosen career paths.

VISION SCIENCE

40-42 graduate students were enrolled in the Vision Science Graduate Group in 2017. A rich diversity of academic backgrounds -- including neuroscience, biology, engineering, computer science, psychology, optometry, and others -- is a hallmark of the group.
Admissions

- 35 direct applicants, 1 of whom had OD degrees (1 foreign)
- Applicants from MCB (1) and Psychology (5) were invited to transfer to VS
- 16 applicants were invited for the March 6-7 Interview Day and 1 was interviewed by Skype
- 9 offers of admissions were made in March (plus 1 waitlist)
- 6 applicants enrolled for Fall 2017, including 1 applicant with an OD, 1 applicant with a Fulbright grant and 2 International Students (Jordan, Spain)
- Average GRE %: 75/68/62
- Average GPA: 3.53

Funding

- $564,438 in T32 Vision Science Training Grant
- $143,800 in Block Grants and $7,000 in Summer Grants
- $33,959 in NRT waivers
- $136,215 in Graduate Division Awards (1 Berkeley, 1 Chancellor's, and 1 Hellman Fellowships) [1 Berkeley Fellowship, 1 Diversity Fellowship, 1 Mentored Research Award, 1 UC Dissertation Fellowship, 1 Power Top-Off Award]
- $710,599 in CORE Grant (provides research supports through 4 modules)
- $17,000 in School of Optometry Funds (Sweigert Fund and Morgan Fund, current balance $108,750)
- $133,303 in FSREP (current balance)
- >$13 Million in Vision Science faculty research support funds. Annual NIH support for research for Vision Science Faculty with a primary appointment in the School of Optometry was ~$6 million in the form of 11 R01/Multi-PI/Program Project NIH research grants.

Faculty

- 47 current faculty appointments

Students

- As of December 15, 2017, there were 42 graduate students enrolled in the Vision Science program, six of whom were students with an OD degree and one student with a DVM.
- The annual student stipend was raised from $30,000 to $31,000 in Fall 2017

Student Awards Received

- National Defense Science and Engineering Fellowship: DuTell, Vasha
- Berkeley Student Opportunity Fund Travel Award: DuTell, Vasha
• National Eye Institute Travel Grant 2017: Foote, Kat
• NIH Diversity Supplement: Beckwith-Cohen, Billie
• Minnie Turner: Beckwith-Cohen, Billie, Boehm, Alexandra, El-Nimri, Nevin, Junge, Jasmine, Stepieen-Bernabe, Natalie, Wei, Jessica
• Awarded extramural fellowship to attend 2016 European Summer School in Visual Neuroscience: Byrne, Kelly
• NIH K23: Yeh, Thao
• Ezell: El-Nimri, Nevin, Harb, Elise
• Hellman Fellowship: Kochik, Sarah
• LRP: Kochik, Sarah
• Fellowship - American Academy of Optometry: Junge, Jasmine
• Vision Science Education/Training Grant: Mozaffari, Sanam
• Graduate Assembly Travel Award: Aizenman, Avigael; Godinez, Angelica
• Graduate Division conference travel grant 2017: Godinez, Angelica, Wan, Stephanie
• UC Berkeley's Chancellor's Fellowship: Godinez, Angelica
• Tear Film and Ocular Surface 8th International conference young investigator travel award recipient: Wan, Stephanie
• Vision Science students authored 6 papers in 2017
• Vision Science students gave 24 presentations at the following events: American Academy of Optometry Meeting Chicago, Fall Vision Meeting, ARVO, American Society for Microbiology, Tear Film and Ocular Surface Conference, Gordon Research Conference, International Society for Contact Lens research, Vision Science Society, American College of Veterinary Ophthalmologists, Computational and Systems Neuroscience, Society for Neuroscience

Degrees Conferred

• PhD - Wesley Chaney (Mentor: David Whitney)
• PhD - Brent Parsons, (Mentor: Richard Ivry)
• PhD - Zachary Helft (Mentor: Richard Kramer)
• PhD - Kavitha Ratnam (Mentor: Austin Roorda)
• PhD - Adeola Harewood,(Mentor: Michael Silver)
• PhD - Christina Gambacorta (Mentor: Dennis Levi)

Bay Area Vision Research Day (BAVRD)

BAVRD is an annual one-day conference (free and open to the public), which is hosted and organized entirely by the 2nd year Vision Science graduate students. BAVRD is devoted to bringing the vision research community of the San Francisco Bay Area together in order to present and discuss new and exciting findings in the fields of optometry, ophthalmology, visual psychophysics, neuroscience, biology, immunology, and computer vision.
The 29th annual BAVRD featured a Keynote Lecture by Ken Nakayama (Harvard University) and the Vision Science Alumnus of the year Award, which was awarded to Jeffrey McCandless (NASA). The day-long event featured 12 speakers from 10 different institutions in the Bay Area and beyond, two outstanding poster sessions and a reception.

BAVRD is funded by donations raised by second year Vision Science graduate students. The 29th annual BAVRD fundraised $4,500. 230 registered for the free conference and more than 160 attended the day-long event. BAVRD was made possible by generous donations from Nervana, Johnson & Johnson, School of Optometry and Departments of Molecular and Cell Biology, Berkeley Artificial Intelligence Research and Electrical Engineering and Computer Science.

Welcome Picnic

The welcome picnic is an annual event held to welcome the new class of 1st year graduate students to campus, and to introduce them to the VS community. For a second year, the picnic was held locally on Minor Beach (an affectionate moniker for the patio adjoining Minor Hall and Minor Hall Addition) in an effort to increase accessibility. This worked splendidly, and a large group enjoyed mingling and the catering provided by Top Dog.

Vision Science Retreat

The annual VS retreat marks an important opportunity for students to engage with all of their peers (rather than a particular cohort or lab), as well as present their research. This year the two day retreat returned the Marconi Conference Center in Marshall, CA (near Point Reyes). This year we introduced a Science Slam competition for students and postdocs, which had 17 entries. All postdocs and Staff scientists were invited to give a 15-minute short talk. Stipends or research funds were awarded for best presentations. Four Faculty members gave slightly longer talks detailing their work. In addition, group activities, discussions, and a town hall meeting were a key component of the annual retreat.

The keynote evening address was delivered by Na Ji a new Berkeley Faculty member with appointments in Physics and Molecular Cell Biology. Na Ji joined the Vision Science Program in Spring 2017. Traditionally the evening keynote lecture (a student favorite) intertwines the faculty’s personal narrative and scientific career with advice for success. The retreat has many social aspects as well, including a group activity planned by the 1st year class, a student-faculty poker game, a reception after the keynote lecture and an evening social event.

Attendee Numbers (Total: 57)

- VS Faculty: 15
• VS Post-Docs: 9
• VS Staff/Researcher: 4
• VS Students: 25
• Other (ICSI): 4

Outstanding Teaching Awards

• 2015-2016: Jasmine Junge
• 2016-2017: Vasha Dutell

Presentation Awards

• Science Slam: Vasha Dutell (Olshausen Lab)
• Best Short Talk: Steven Cholewiak (Banks Lab)

Visit Days & Buddies

“Visit Days,” is the 3-day period where prospective graduate students are invited to campus to interview with faculty and current students. Vision Science students volunteer to serve as “buddies” for interviewees, shepherding them around campus and providing advice. These relationships often continue throughout one’s graduate career. Current students also host a party for the prospective students, which in recent years has featured homemade eyeball piñatas.