

Berkeley Optometry

ANNUAL REPORT

University of California, Berkeley
School of Optometry

FOR THE YEAR 2016



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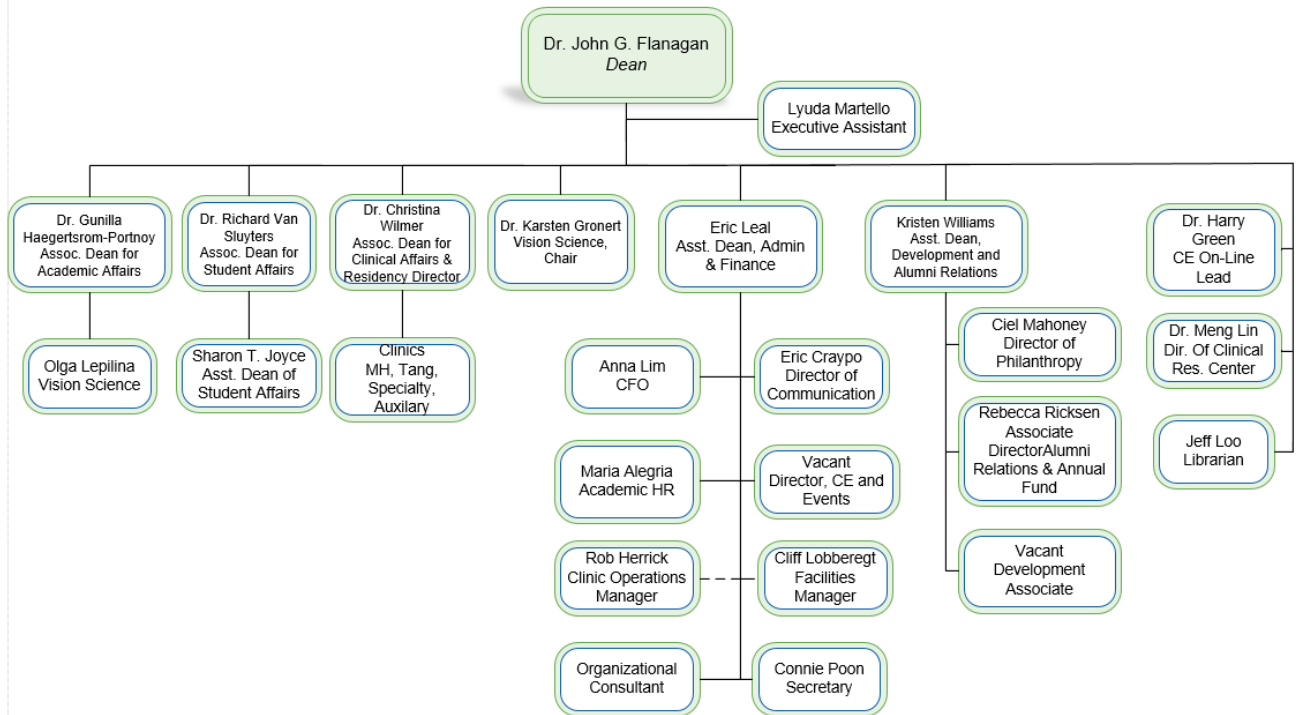
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ORG CHART

Berkeley Optometry

As of 2.28.2017



ACADEMIC PROGRAMS: FACULTY/STUDENTS

Administration at the School of Optometry, University of California, Berkeley

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-Portnoy remains as Associate Dean for Academic Affairs.

Eric Leal was appointed as Assistant Dean for Administration and Finance in October 2014 and Sharon Joyce remains as Assistant Dean for Admissions, Student Affairs and Career Services.

Kristen Williams is now 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 an appointment in the spring/summer of 2017. The School now has 31 full time clinical faculty members with a total faculty FTE count of 67.

Faculty member Wendy Lam was President of ACCCOS in 2014 and faculty member Melanie Mason became President for the local society in 2015.

Mike Patella, OD, long time optometric researcher and current VP for Professional Affairs at Carl Zeiss Meditec, Inc was honored as the Alumnus of the Year for 2016 at the Alumni Reunion in October 2016.

Professor Martin Banks received the highest award from the American Academy of Optometry, the Charles F. Prentice Medal in 2016 and gave a presentation at the Academy Annual meeting in Anaheim in November 2016.

Optometry Faculty Research

From July 1, 2015 through June 30, 2016, optometry faculty members generated \$11.1 million in direct annual funding for 54 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. This is an outstanding performance given the difficulty of receiving research funding these days.

The NEI Training Grant has been continuously funded for 39 years, and the Core Grant has been funded for 37 years. The School of Optometry has one other research training grant for optometry students (T35) which is now in year 23.

NBEO Part	UC Berkeley Pass Rate	National Pass Rate
I: Applied Basic Science March 2016 (3 rd year students) Class of 2017	88.5%	68.8%
II: Patient Assessment and Management December 2015 (4 th year students) Class of 2016	100%	84.9%
III: Clinical Skills Fall 2015-Spring 2016 (4 th year students) Class of 2016	92.2 %	79.6%
Ultimate Pass Rate Passed all 3 parts before graduation (graduating class) Class of 2016	93.3%	83.8%

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 (see Table above).

Residents

A high proportion of graduating students apply for and receive a match for further residency training. For 2016, 94% of 32 applicants from the graduating class matched in the ORMS round and 2 found positions post-match for a total of 53% of the 2016 graduating class placed into residency positions.

Vision Science graduates

Over the last 5 years, the Vision Science program has graduated 26 PhD's and 2 MS students. Six of the PhD's had prior health science training (OD or MD). In 2016, 4 students received PhDs and one student received a MS degree

Admissions and STUDENT AFFAIRS Office (ASAO)

Staff

The academic year 2016-2017 has been positive and productive. The office is staffed by Assistant Dean Sharon Joyce, Heather Iwata, Director, Assistant Director, Kait Guthrie, and our newest staff member, Carissa Caloud, is the Coordinator of Admissions and Student Affairs position.

For prospective and current students, listed below are updates on new and past initiatives.

Recruitment

Admissions Statistics

We collected 243 applications for Fall 2017 entry. Our Interview Day is on Saturday, January 28, and we are slated to interview 118 candidates. With the introduction of Multiple Mini-Interviews (MMIs) two 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 2020, average OAT AA = 352; Biology/Chemistry/ Physics (BCP) GPA = 3.43, 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. In fact, the Berkeley Chapter was selected as the School of the Year at the NOA national meeting in July of this year. 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. Finally, this past Fall, NOSA members also tabled and presented at the UC Davis Pre-Medical and Pre-Health Professions National Conference, which attracts over 4,000 participants from underrepresented populations in the health sciences.

National Student Leadership Conference

For the seventh consecutive year, the School of Optometry hosted four groups of 150 high school students from the National Student Leadership Conference (NSLC) in July and August of 2016. 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 ELEVENTH 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 income households.

After ten years, we re-evaluated the program and, beginning in 2016, rather than offering two 3-day sessions of approximately 35 attendees each, we offered a single one-week-long session, from July 11-15, and hosted 40-50 campers during the week.

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.

Class Year	Opto-Campers	GOPs Received
2011	2	0
2012	6	2
2013	11	2
2014	9	3
2015	10	2
2016	8	1
2017	11	2
2018	12	3
2019	16	1
2020	15	2

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 Services

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 2020 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.

Financial Aid

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 2020; nearly 60 students took advantage of scheduling an in-person or phone appointment with the Assistant Dean.

Professional Student Support Funds

Thanks to the generous support of faculty and alumni, 75 Professional Student Support Funds (PSSF's) were awarded to 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.

Spring Events

Awards for Third-year and Fourth-year Students

In Spring Semester 2016, 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. We were pleased to have our corporate friends at Allergan provide sponsorship of the event. This year's New Home Night is scheduled for Monday, May 8, 2017, starting at 6:30pm.

Fourth-year awards were announced at the second annual Fourth Years Awards Ceremony. Recipients were also recognized in the Commencement Program. This year's dinner and reception will be held on Thursday, May 18, 2017, starting at 5:30pm, at the David Brower Center in downtown Berkeley.

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 on August 21, 2017, to celebrate the Class of 2019.

Starting in the Fall of 2016, all entering Berkeley Optometry students will be 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. The decision to move the White Coat Ceremony into the first year was made after much reflection, based upon feedback gathered from students, faculty and staff, and it is a decision that is philosophically and logistically sound for our optometry student participants. The move will also align our program with most other health science programs, and the original intent of the ceremony, as a celebration of the incoming class. The Class of 2021 will also be celebrated and given their White Coats on August 21, at a separate ceremony.

Graduation

Graduation for the Class of 2017 will be on Saturday, May 20, from 10am to 12noon 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. Dr. Patsy Harvey has stepped back from her role as Director and now serves on the Continuing Education Committee along with Dean John Flanagan, Drs. Harry Green, Anne Tasaki and Pam Satjawatcharaphong. Danni Peck has assumed the role of Director, Continuing Education & Events and has been 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 2016, the UC Berkeley Optometry CE Office oversaw and accredited over 28,000 hours of continuing education for which it issued over 2,200 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 2016, 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.

27th Annual Berkeley Practicum

The Berkeley Practicum was held on January 16–18, 2016. The attendance of over 600 optometrists and 1,201 "Doctor Days" indicated that most optometrists attended an average of two days. They came from 12 states and graduated from 19 optometry schools, with graduation dates spanning an impressive 58 years from 1957 to 2014.

The 14th Annual Karen Walker-Brandreth keynote lecturer was Dr. Robert Lustig, Professor of Pediatrics, Division of Endocrinology, School of Medicine, University of California, San Francisco. His lecture, *"Sugar: The New and Bitterest Truth,"* provided valuable information and insight on nutrition, recent dietary changes and their impact on the health of Americans. Among the outstanding comments he received were:

- *"Eye opening, life-changing, perspective shifting information. Priceless."*
- *"Incredible information; very enlightening."*
- *"Fascinating and so useful."*

31st Annual Morgan-Sarver Symposium

The Morgan-Sarver Symposium was held on April 29–May 1, 2016, drawing 636 optometrists and 1,198 "Doctor Days." Optometrists came from 17 states and graduated from 17 optometry schools, spanning 61 years from 1955 to 2015.

The Meredith Morgan Memorial lecturer was Jimmy D. Bartlett, OD, D.Sc, FAAO. Following an illustrious 34-year career at the School of Optometry, University of Alabama at Birmingham, Dr. Bartlett retired from academia, and currently serves as President of Pharmakon Group, an advisory service to the ophthalmic pharmaceutical industry. His lecture titled "Are Your Practicing 21st Century Therapeutics?" garnered high praise from Morgan-Sarver Symposium attendees as shown in their evaluation comments:

- *"Probably the best lecture I have attended in past 11 years of practice."*
- *"Excellent presenter, materials and advice."*

- *“Dr. Bartlett is a legend- awesome to have such a well-renowned speaker.”*

Fourth Annual Berkeley Glaucoma Day

The 2016 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 Dean John Flanagan, OD, PhD. The five-hour course featured updates on glaucoma masqueraders, atypical glaucomas, legal issues surrounding glaucoma, and visual fields as well as Grand Round cases. 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.

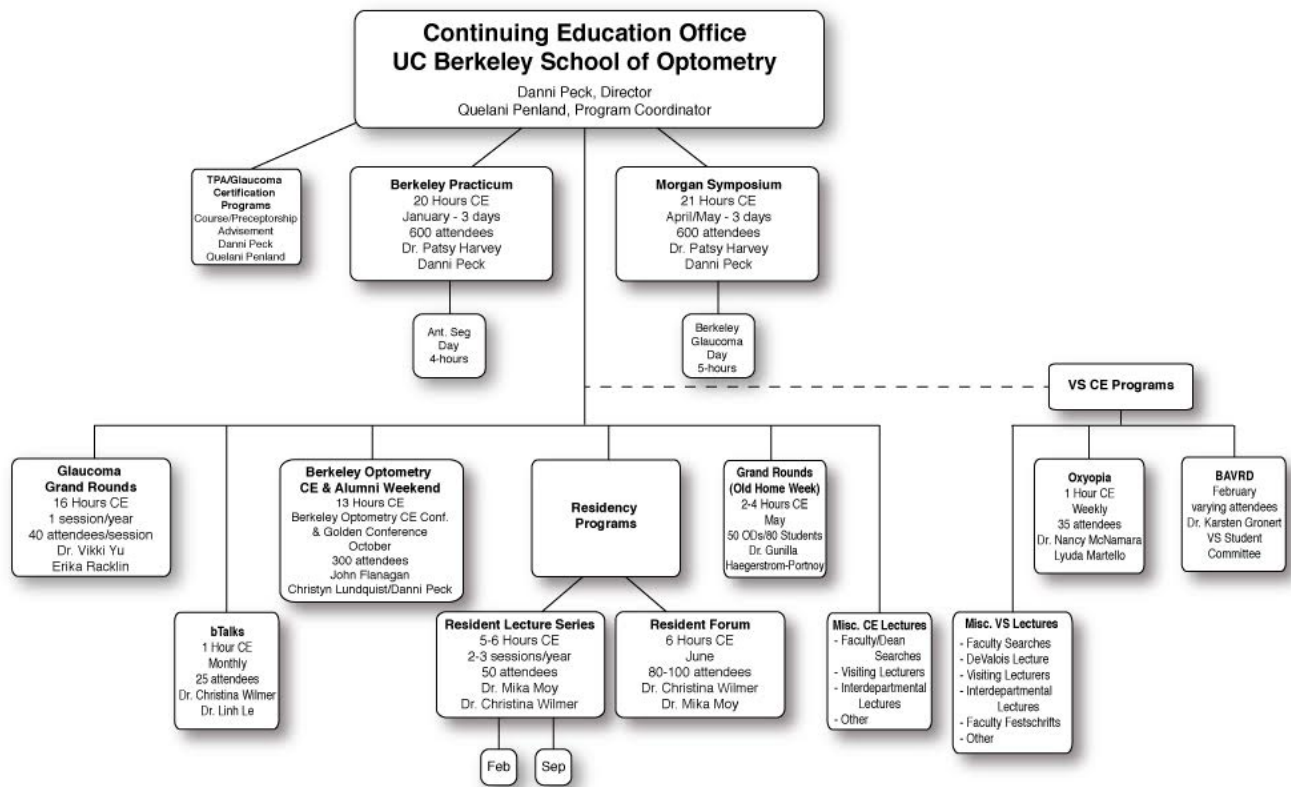
The **Berkeley Optometry 16-hour Grand Rounds Course** is the onsite “live program” at the Meredith Morgan University Eye Center. The Grand Rounds Course is equivalent to treating 15 patients for the 25-patient Case Management requirement. In 2016, one session of the Glaucoma Grand Rounds course was provided, serving 34 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:

PROGRAM	FACULTY
<ul style="list-style-type: none"> • Resident Forum • Resident Lecture Series • Alumni CE Program • Sheldon M. Golden Conference • Glaucoma Grand Rounds 	<ul style="list-style-type: none"> Dr. Christina Wilmer Dr. Mika Moy/Dr. Kuniyoshi Kanai CE Committee Dr. John Flanagan Drs. Christina Wilmer, Carl Jacobsen and Vikki Yu
<ul style="list-style-type: none"> • Grand Rounds – Cornea • bTalks Seminar Series • Oxyopia Lecture Series 	<ul style="list-style-type: none"> Dr. Christine Wildsoet Drs. Christina Wilmer and Linh Le Dr. Nancy McNamara

CE Programs Organization Chart



California State Board of Optometry and Optometric Laws

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 for Administration and Finance Eric Leal. 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 2016, 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 1,100 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. Early in our planning it became clear that this endeavor would require significant resources and varied expertise to execute successfully. Much of our efforts in 2016 were encumbered by administrative and vendor difficulties. Despite these difficulties we remain steadfastly dedicated to producing an online CE program that is worthy of the UC Berkeley name, and will be viewed as the gold standard in optometric continuing education.

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 programs such as 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; 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 experiences 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.

Researchers, Administrative Staff and Trainees

- Director: Meng C. Lin, OD, PhD, FAAO
- Administrative Staff: Uyen Do (manager); Mariel Lerma (study coordinator); Kristina Lin (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); Young Kim, BS (Research Assistant); Tan Truong OD, PhD (Clinician Scientist)
- Graduate student: Thao Yeh, OD (PhD candidate, UC Berkeley Vision Science); candidate, UC Berkeley Vision Science); Jose Vega, OD (PhD candidate, University of Valencia Vision Science)
- Post doctoral fellow: Wing (Eric) Li, OD,PhD; Vivien Tse OD
- OD-Resident: Stefanie Chan, OD
- OD Thesis student: Britney Kitamata-Wang (Class of 2016); Annie Lee (Class of 2017)
- Undergraduate student: Lilian Thoi; Crystal Guo; Bansri Patel; Anoop Sownderraj; Dilpreet Sahota; Kristina Lin (transitioned to a full-time coordinator on 7/25/2016); Kathy Le (ended 4/30/2016)

Research

In 2016, the major industry sponsors continue to be Cooper Vision Inc, JOHNSON & JOHNSON VISION CARE, INC and Essilor. In addition to industry sponsored clinical trials, CRC collaborates with the Icahn School of Medicine at Mount Sinai, New York and University of Pennsylvania Center for Preventive Ophthalmology and Biostatistics to conduct a longitudinal clinical trial examining 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). In 2016, the CRC successfully secured research funding of nearly one million dollars. We have also filed a patent for our innovative ophthalmic topical formulation (U.S. Patent App. No. 62/300,245 (BF&F Ref. BERK-322PRV; UCB Ref. BK-2016-089); "Bicontinuous microemulsions") for optimizing stability of the tear-lipid layer.

Publications

In 2016, the CRC had five manuscripts published and one submitted. The CRC also had 11 paper/posters presentations at various domestic and international meetings.

Publications

1. Tong K, Lujan BJ, Zhou Y, Lin MC. Directional OCT Reveals Reliable Outer Nuclear Layer Measurements. *Optom Vis Sci*. 2016 Apr 4. [Epub ahead of print] PMID: 27046093
2. Li W, Graham AD, Lin MC. Understanding ocular discomfort and dryness using the Pain Sensitivity Questionnaire. *PLoS One*. 2016 May 3;11(5):e0154753. doi: 10.1371/journal.pone.0154753. PMID:27137908
3. Caffery B, Dogru M, Jones LW, Lin MC, Nichols JJ, Papas E, Pucker A, Pult H, Willcox MD. Contact lens comfort. *Optom Vis Sci*. 2016 Aug;93(8):790-2. PMID:27454831
4. Chan SM, Svitova TF, Lin MC. Accounting for Ethnicity-Related Differences in Ocular Surface Integrity as a Step Toward Understanding Contact Lens Discomfort. *Review. Eye Contact Lens*. 2016 Oct 19. PMID: 27763911
5. 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: Physicochemical and Engineering Aspects*. In press.
6. Yeh TN and Lin MC. Evaluation of Clinical Risk Factors Associated with Meibomian Gland Dysfunction-Induced Evaporative Dry Eye. *Submitted to ECL 2017*

Conference Presentations

1. Vega JA, Alemany A, Truong T, Lin MC. Non-invasive Assessment of the Tear Film Layer in Symptomatic and Asymptomatic Subjects. European Academy of Optometry and Optics 2016. Berlin, Germany.

2. Lin MC, Svitovs TF. Dynamic interfacial properties of human tear lipids and their interactions with tear proteins contribute to racial differences in tear-film stability. Cornea, Biology & Pathobiology of the Gordon Research Conferences. Feb 2016. (Invited poster presentation)
3. Lin MC, Graham AD, Satjawatcharaphong P, Li WY, Yeh T, Lerma M, Lin K. Tear Lipid Layer Thickness and Variability Both Impact Tear Film Stability. Association for Research in Vision and Ophthalmology Meeting 2016. Presentation Number: #3442 (paper).
4. Yeh TN and Lin MC. Isotretinoin Study: Ocular Surface Comparison between Exposed and Unexposed Groups Association for Research in Vision and Ophthalmology Meeting 2016. Presentation Number: 2856 - A0065.
5. Li WY, Graham AD, Lin MC. Repeatability of Ocular Surface Cooling Measurement. Association for Research in Vision and Ophthalmology Meeting 2016. Presentation Number: #2850 – A0059.
6. Svitova T, Sommerschuh, Lin MC. Effects of MPS on SCL wettability, protein uptake, friction-drag *in vitro* and on lens-wear comfort and tear film stability *in vivo*. Association for Research in Vision and Ophthalmology Meeting 2016. Presentation Number: 1460 - A0140
7. Radke CJ, Dursch TJ, Li W, Taraz B, Lin MC. Human Tear-Film Evaporation Rates from Infrared Ocular-Surface Cooling and Fluorescein Breakup. Association for Research in Vision and Ophthalmology Meeting 2016. Presentation Number: #6168 – A0071.
8. Halleran C, Hauswirth SG, Kwan J, Hom MM, O'Dell LE, Moy A, Schachter A, Hathan J, Lin MC, McNamara NA. Agreement in reading center grading of Isotretinoin (Accutane)-induced meibography changes. Association for Research in Vision and Ophthalmology Meeting 2016. Presentation Number: #6219- A0147
9. Li W, Graham AD, Lin MC. Pain sensitivity associated with length of the blink refrainment period. AAO 2016. (paper presentation)
10. Yeh TN & Lin MC. Hormonal Birth Control and the Ocular Surface. AAO 2016(paper presentation)
11. Lerma M, Graham AD, Yuen T, Li W, Leung T, Truong T, Yeh T, Chan S, Lin MC. Not all dry eye questionnaires exhibit similar relationships between dryness symptoms and ocular surface conditions. AAO 2016. (paper presentation)

Ocular Surface Imaging Clinic

Since the inception of the Ocular Surface Imaging Clinic (OSIC) in 2012, this specialty clinic continues to get both internal and external referrals from our optometry and ophthalmology colleagues. Aided by cutting-edge technology, this clinic has been highly successful at managing and treating evaporative dry eyes and has been widely recognized as an important referral clinic in the Bay Area and creates synergy with the Dry Eye Clinic of the Meredith Morgan University Eye Center.

Our cutting-edge technology includes meibographer, tear film interferometry, evaporimeter, ocular response analyzer, tear osmometer, Lipiflow, anterior-segment OCT, *in vivo* confocal microscope, and scanning fluorometry.

DEVELOPMENT & EXTERNAL AFFAIRS

Donors

Each year, our donors generously support Berkeley Optometry, enhancing and expanding opportunities for virtually every aspect of the School—from clinical and academic facilities to student financial support and leading-edge research. Fiscal Year 2016 saw both an increase in donors and friends as well as the expansion of areas of investment of philanthropic dollars. Alumni and friends made new gifts and pledges adding up to over \$1.4 million. The total number of donors increased by 10% and helped to make 2016 a historic one for philanthropic support.

Growth

Alumni donations are at an all-time high. This robust participation rate reflects strong support for the school, a vote of confidence that helps Berkeley Optometry maintain its reputation as a leading institution in optometric education and vision science research.

This year's support for the Dean's Initiatives and Annual Fund is near 100% growth over the previous year. Achieving this reflected not only alumni generosity but also a commitment to the profession of private practice, the support of industry growth, and the continued commitment of the Berkeley Optometry community to excellence in vision care.

Camaraderie

In 2016, Berkeley Optometry's Development and Alumni Team hosted 11 events in 6 different cities and 3 states. This year, over 1,700 people attended these events, which made for a very successful year.

Our Annual All-Alumni CE and Berkeley Optometry Celebration event sold out again. Our CE Conference was extremely popular, headlined by the Thomas Peters Memorial Lecturer, Dr. Martin S. Banks. John Flanagan was able to bestow the Alumnus of the Year Award on Dr. Mike Patella, widely recognized by his colleagues and peer for his tremendous influence on instruments for vision care. The class celebrating their 25th reunion presents the Annual Mert Flom Teaching Award. This past year the class of 1991 selected Dr. Lorie Gong as the teacher with the most positive influence on their optometric careers. 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.

Communication

Website

A total overhaul of the school website has been completed. Changes include a new design, simplified navigation structure, and a new content management system that is accessible by all key program areas. We plan to redesign the vision science and clinic websites in the coming months.

Intranet

To make our website more streamlined – and to further protect the privacy of our students – we've created an intranet site that is only accessible to our campus community. The intranet is where we now store class schedules, clinic schedules, policies, and administrative forms.

Magazine

The 2nd edition of our award-winning magazine features articles on our groundbreaking neuro-optometry clinic; the innovative work of Dr. Dennis Levi, whose lab is using 3D virtual reality devices to open new frontiers in stereo vision recovery; an interview with alumnus of the year, Mike Patella; and a report on successes in the fight against Riverblindness, a disease that once blinded half of the adult men in 11 West African countries.

Email and Newsletters

We've continued to expand the use of our newly developed email delivery system for external messaging. Our list of contacts now exceeds 7,500 people, and is being used by our alumni, admissions and

continuing education units. Our email open rate for the last year has been 39%, far exceeding the industry average for higher education (14.9%). In total, we have delivered 85,000 emails in the last 360 days.

In addition to our long-running school-wide newsletter, we've recently developed BLINK, a newsletter for prospective students.

Advertising

We have embarked on a total redesign of advertising materials for our clinic. These materials are expected to appear in locations such as the Oakland airport, BART stations, AC Transit, and various local print and online publications.

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 2016 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, Karen Walker-Brandreth, 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 amount 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 2017 to create a broader network of alumni volunteers.

FONG OPTOMETRY & HEALTH SCIENCES LIBRARY

The Pamela and Kenneth Fong Library is one of three science-specialty libraries that form the Life and Health Sciences (LHS) Division of Berkeley's University Library system. The LHS Division fosters shared services, expertise, and operations among the Optometry, Bioscience & Natural Resources, and Public Health libraries.

Our division structure extends the information resources and services available to the School of Optometry and the Vision Science program. The Fong Library reports administratively to UC Berkeley Library's Head of the Life and Health Sciences Division. The 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.

Facilities

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

Services

The Fong 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 (statistics reflect fiscal year (FY) 15/16 unless noted otherwise).

Reference

Library staff responded to 261 questions for information retrieval assistance.

Library Instruction

9 course-related and drop-in classes were attended by 223 participants. Additionally, online guides provide patrons with self-instruction on library use and are tailored to optometry, vision science, and alumni needs.

Library Circulation and Document Delivery

3,668 print items circulated in FY14/15. The Library provides an expedited service to borrow materials not owned by Berkeley through interlibrary loan, document delivery, and the Association of Vision Science Librarians exchange.

Meeting Space

The Fong Library is a popular space for meetings by all members of the School of Optometry community. Conference room 490F includes a 60" television for presentations.

Technology

The library offers free document scanning as well as for-fee printing 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 academic 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 indexes support the UC-eLinks button 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.

As of June 2015, the Fong Library collections included:

- 17,691 volumes
- 150 serial titles (journals, magazines)
- 13,179 slides (35mm)

- 605 videos
- ~3,500 volumes (~17%) of the total collection are in our storage facility in Richmond. Electronic transmission is used whenever possible to retrieve stored items (< 2 business days turnaround for the digital scan of an article; 2-3 business days for the delivery of a printed 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.

Prentice Medal

Vision scientist Martin Banks, a UC Berkeley professor of optometry and vision science, has been awarded the The Charles F. Prentice Medal for 2016.

Dennis Levi

Appointed to National Advisory Eye Council

Professor and former dean of Berkeley Optometry, Dr. Dennis Levi, has been appointed to the National Eye Institute's Advisory Eye Council (NAEC).

Tillyer Award

The Tillyer Award is presented to a person who has performed distinguished work in the field of vision, including — but not limited to — the optics, physiology, anatomy or psychology of the visual system.

Austin Roorda

Alcon Award

"This award is one of the most prestigious and high profile awards within vision research; an exceptional achievement for an exceptional scholar," says Dr. John Flanagan, Professor and Dean for the UC Berkeley School of Optometry

John Flanagan

Honorable DSc, Aston University

Dean Flanagan received a Hon DSc and addressed the 50th Degree Congregation (Commencement) at Aston University at the historic Birmingham Town Hall.

Life Fellow, College of Optometrists

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

Michael Harris

Berkeley Founders Award

Celebrates an alumnus/a or friend who has given long-term distinguished leadership and service to a broad range of academic, athletic, philanthropic, and other programs across the university.

Anthony Adams

Life Fellowship Award, American Academy of Optometry

This award provides recognition to those Fellows who through long-time membership in the Academy have rendered distinguished service to the science and art of optometry.

John Corzine

Excellence in Optometric Education Award (COA)

Optometry Clinics

New Clinic Faculty/Leadership

After 15 years of service to the on-campus residency program, Dr. Mika Moy has stepped down and has taken over the third year anterior segment course. Dr. Kuni Kanai has been appointed as the incoming Residency Director for On-Campus Programs as of July 1, 2016. He is a graduate of UC Berkeley Optometry and completed a residency in the Primary Care/Contact Lenses here at the school.

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

- Dr. Sarah Arneal graduated from Berkeley Optometry and completed her residency at Northport VAMC in New York and joined the faculty on a full-time basis. She teaches in primary care clinic, at the Over 60s Health Center, and at Marin Community Clinic San Rafael.
- Dr. Kevin Tomita graduated from the Southern California College of Optometry and completed a residency at the West Los Angeles VA Healthcare Center. He teaches in primary care clinic.
- Dr. Alfred Vong graduated from Berkeley Optometry and completed his residency at the San Francisco VA and joined the clinical faculty on a part-time basis. He teaches in primary care clinic.
- Dr. Shreya Malli graduated from Berkeley Optometry and received her residency training and served as an attending optometrist in the Portland VA Healthcare system before returning to Berkeley Optometry on a part time basis. Her training included: primary care, ocular disease, minor lid procedures, low vision, and medically necessary contact lenses.
- Dr. Kathryn Boe returns to Berkeley Optometry after a long hiatus and is teaching in our primary care and contact lens clinics.
- Dr. Surbhi Bansal graduated from the New England College of Optometry and taught at Nova Southeastern University College of Optometry. She was a residency supervisor and fourth year preceptor in the Pediatrics and Binocular Vision service before joining the clinical faculty at Berkeley Optometry.
- Dr. Patrick Clark transitioned from Travis Air Force Base to staffing the Petaluma Health Center.
- Dr. Randall McPherran left Berkeley Optometry and accepted a position as Optometric Student Coordinator at the VA Monterey where he is a faculty mentor to our students.
- Dr. Taras Litvin will return to teaching in primary care clinic starting Spring 2017.
- Dr. Harold Woodring left Berkeley Optometry in August 2016 after serving at the San Rafael Community Health Center.

Faculty Development and Support

There was a strong showing at the American Academy of Optometry meeting in Anaheim, CA in November 2016 with 50 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 (denoted in bold) presented either a lecture, paper, poster or mentored a workshop at the Academy:

Speaker: **Ian Bailey**

Title: "Understanding Low Vision Telescopes"

Activity: Ellerbrock Lecture

Speaker: **Harry Green**

Title: "Allergies: They're the Same No Matter Where You Look"

Activity: Ellerbrock Lecture

Speakers: **Michael G. Harris** and Kevin Roe

Title: "Ethics and Eyecare"

Activity: Ellerbrock Lecture

Speakers: **Maria Liu**, Craig Norman and Jason Jedlicka

Title: "Corneal Reshaping, Soup to Nuts"

Activity: Ellerbrock Lecture

Speaker: **Kuniyoshi Kanai**

Title: "Evolution of Abducens Nerve Palsy caused by Intracavernous Carotid Artery Aneurysm"

Activity: Ellerbrock Grand Rounds

Speaker: **Kuniyoshi Kanai**

Title: "Muscle It Up: Control Diabetic Retinopathy" and

Activity: Ellerbrock Lecture

Speaker: **Mika Moy**

Title: "A Grand Rounds Series"

Activity: Ellerbrock Lecture

Speakers: **Mika Moy**, **Chris Wilmer**, Nick Colatrella and Jeffrey Varanelli

Title: "Rapid Fire: Anterior Segment Treatment of Infectious, Non-infectious and Inflammatory Conditions"

Activity: Ellerbrock Lecture

Speakers: **Mika Moy** and **Chris Wilmer**

Title: "HSV Epithelial Keratitis: Avoiding the Initial Misdiagnosis"

Activity: Ellerbrock Lecture

Speaker: **Kerri Yoshiyama**

Co-Presenters: Beth Harper and Daniel Taylor

Title of Symposium: "Remediation of the Struggling Student Clinician: Theory and Practice"

Activity: Optometric Education Section Symposium

Speaker: **Nancy McNamara**

Title: "Inflammation, Denervation, and Loss of Epithelial Integrity in Aqueous-Deficient Dry Eye Disease"

Activity: Hirsch Symposium

Moderator: **Mika Moy** and Elise Harb
Title: "The Distressed Eye: Ocular Pain"
Activity: Hirsch Symposium

Authors: **Sarah Kochik** (presenter), Elise Harb, Christine Wildsoet, Dennis Levi
Title: "Changes in Choroidal Thickness After a Prolonged Near Task"
Activity: Scientific Paper - Clinical Myopia

Authors: **Taras Litvin** (presenter), **Jorge Cuadros**, George Bresnick, **Glen Ozawa**, **Kuniyoshi Kanai**
Title: "Radial Sectors Affected by Hard Exudates Show Good Screening Test Characteristics for the Detection of Clinically-Significant Macular Edema"
Activity: Scientific Paper Presentation

Authors: **Deborah Orel-Bixler** and **Jasmine Junge**
Title: "Contour Interaction Reduces Visual Acuity in Children with Cerebral visual Impairment"
Activity: Scientific Paper

Speakers: **Mika Moy** and **Chris Wilmer**
Title: "Diplomate Prep: Moy/Wilmer Thought Provoking Cases in Anterior Segment"
Activity: Anterior Segment Diplomate Prep Course

Authors: **Meng Lin**, Wing Li and Andrew Graham
Title: "Pain Sensitivity Associated with Length of the Blink Refrainment Period"
Activity: Scientific Paper

Authors: **Meng Lin** and Thao Nguyen
Title: "Hormonal Birth Control and the Ocular Surface"
Activity: Scientific Paper

Authors: **Meng Lin**, Mariel Lerma, Andrew Graham, Tiffany Yuen, Wing Li, Tiana Leung, **Tan Truong**, Thao Yeh, Stefanie Chan
Title: "Not all dry eye questionnaires exhibit similar relationships between dryness symptoms and ocular surface conditions"
Activity: Scientific Paper

Presenter: **Charlie Ngo**
Title: "Ocular Manifestation of Chondroblastic Osteosarcoma"
Activity: Scientific Poster

Mentors: **Meredith Whiteside**, John Shan and Nimesh Patel
Title: "Advanced Examination of the Retina: Scleral Indentation & Retinal 3-Mirror"
Activity: Workshop

Mentor: **Pam Satjawatcharaphong** (along with other mentors)
Title: "Basics of Scleral Contact Lens Fittings: It's as Easy as 1-2-3"
Workshop"
Activity: Workshop

The following clinical faculty earned fellowship at Academy 2016:

- Ashley Craven
- Jasmine Junge

The following faculty earned their Diplomate at Academy 2016:

- Marlena Chu in Low Vision

bTalks Optometry Discussion Series

bTalks: 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:

01/2016 - Marlena Chu, OD, "Low Vision and Driving in California"

02/2016 - Debora Chen, OD, "Current and New Directions in Amblyopia Treatment"

02/2016 - Ian Flitcroft, D.Phil (oxon) FRCOphth., "What Will Refractive Management Look Like in 10 Years Time?"

03/2016 - Barnie Lim, OD, "The Role of OCT in the Diagnosis, Management and Treatment of Macular Holes"

04/2016 - Dennis Fong, OD & Isabel Kazemi, OD, "Evaluating and Designing Visual Solutions for Today's Technology Driven Society"

05/2016 - Harry Green, OD, PhD, "Expanding Your Knowledge of Allergy"

06/2016 - Suzanne Fleiszig, OD, PhD, "Pseudomonas versus Cornea, Who Wins and Why?"

07/2016 - Anne Tasaki, OD, "I Spy a Little Red Eye"

08/2016 - Jaci Theis, OD, "Concussion - An Evidence Based Approach to Optometric Management"

09/2016 - Jorge Cuadros, OD, PhD, "UC Berkeley's Digital Health Clinic and EyePACS: Adapting telehealth and artificial intelligence for better patient engagement and blindness prevention in safety-net clinics"

10/2016 - Lee Vien, OD & David Yang, OD, "Glaucoma and Myopia: A Diagnostic Challenge"

11/2016 - Kathy Dumbleton, PhD, MCOptom, "Daily Disposable Contact Lenses: Quaque Die, Quia Omnis?"

12/2016 - Nancy McNamara, OD, PhD, "The Pathogenesis, Diagnosis, and Treatment of Aqueous-Deficient Dry Eye"

In fall 2016, the clinic administration organized a 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. The optometry clinic plans to continue this as an annual event going forward. In addition, Dr. Yoshiyama is actively working with UHS and the UC Berkeley Office of Environment, Health, and Safety (EH&S) to develop a comprehensive Airborne Transmissible Disease Policy and Optometry Clinic Vaccination Program to ensure that the optometry clinic is satisfying the highest levels of university and OSHA standards.

Continuing Education

The Glaucoma Grand Rounds course was offered in March 2016 with 34 attendees. The next offering, the eighteenth one, will be held on March 29-30, 2017. Depending on interest, it may be the last grand rounds program that we will offer. For more information, visit:

<https://optometry.berkeley.edu/continuing-education/glaucoma-certification-courses>

In June 2016, we partnered with CEP America to offer a slit lamp laboratory course to physician assistants throughout the bay area. This was the second 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. Twenty-eight participants attended this four-hour course.

Clinical Curriculum

In summer 2016, a case seminar series was added to the 430 Clinics Course for entering third year optometry clinicians. This series featured guest lecturers from our clinical faculty, each sharing their clinical insights with students and encouraging active clinical thinking. The flipped style format introduced clinical cases and posed real time clinical questions in a group setting. Guest lecturers covered a range of topics, including: ocular manifestations of systemic disease, pharmacology, refractive analysis/binocular vision, contact lenses, glaucoma, anterior segment urgent care, and posterior segment urgent care.

An additional 12 hours of online glaucoma curriculum was added to the 430 clinic course for the third year clinicians. Four hours of glaucoma foundation material were added for the summer clinic session. An additional four hours will be added and completed prior to the start of spring semester of the third year. This enhanced glaucoma material is designed to provide clinical knowledge that will improve the students' background prior to entering the posterior segment disease course in the spring. The final four hours will be concurrent with the posterior segment disease course and will emphasize clinical management of glaucoma.

The advanced cornea and contact lens clinic was added to the fourth year curriculum as of May 2016. All fourth year students will have the opportunity to rotate through this advanced clinic to ensure better exposure to advanced contact lenses, anterior segment and refractive surgery.

Changes to Clinical Externships

- The Kaiser Daly City externship site began in May 2016. The site will take one student per session throughout the year.
- The Petaluma Health Center in Rohnert Park opened as an externship in May 2016. This year, there will be one student per session. Next year, the program will be expanded to two students per session. Dr. Patrick Clark who retired from Travis Air Force Base was hired to be the faculty attending at Petaluma.
- Dr. Robert Widerspan was hired as an additional instructor at UCSC this year. This allowed UCSC to become an externship starting in Fall 2016.
- Crow Indian Health Service will expand to take two students per session starting in May 2017.
- The Bascom Palmer Eye Institute externship will resume in May 2017 after a one-year break.
- Captain Evelyn Wang replaced Captain Richard Reinert at Vandenberg Air Force Base effective August 1, 2016.
- Lt. Col. Jaime Okamura replaced Captain Rachel Kaneta at Travis Air Force Base effective August 1, 2016.
- Dr. Randall McPherran replaced Dr. Kimberly Pham at VA Monterey effective August 15, 2016.
- In October 2016, we began a partnership with See Well to Learn, which is run by Prevent Blindness North America to provide vision exams to school-aged children in a mobile eye clinic. This clinical service was added to the in-house templates for the Class of 2017's 4th year rotations. The See Well to Learn mobile eye clinic will travel to schools in the bay area.

Clinical Operations

In 2015 we saw big changes come to clinical operations in the form of a move of Eyecare to the campus data center, the hiring of a compliance officer, the switch to ICD-10 and the restructuring of the IT team. By contrast 2016 has been filled with many smaller, but no less significant changes.

In the broad area of compliance there have been many goals achieved. March 2017 will mark the end of our three-year engagement with HIPAA consultant CynergisTek. CynergisTek's last evaluation of our

HIPAA compliance program show the clinic scoring 115 out of 117 items (98%). With an action plan in place to address the remaining 2% we are ready to face the end of the CynergisTek contract with confidence.

Great progress was also made in the structuring and implementation of a formal compliance program for our billing practices. Formal billing policies have been written along with the beginnings of written procedures to insure the policies are met. Systems of audit have been put in place to record and monitor ledger write-offs, refunds and provider credentialing. A program for adhering to CMS guidelines for PQRS (Physicians Quality Reporting System) was put into action in April of 2015 and despite our late start we have achieved the levels needed to shield the clinic from CMS reimbursement penalties. In addition our system of chart review has been restructured and is being piloted to ensure every chart supports the codes billed, leaves no services unbilled for, and is signed by a provider who is credentialed for the patient's insurance plan.

There have been many behind the scenes changes in the area of clinic computing. A test environment was implemented in the campus data center that allows for the thorough testing of new versions of Eyecare Advantage updates before they reach the general populous in the live environment. As a result, the version of Eyecare we use every day in the clinic was seamlessly updated three times in 2016. Other changes include an update to the 2016 version of ICD-10, the change to Noridian as our portal for billing Medicare, a system in Eyecare to keep track of what plans our faculty are credentialed with, and the implementation of a system to electronically bill Anthem Blue Cross for SHIP. In addition, we implemented a server to house images and review software that allows clinicians to compare OCT results. This, along with many security enhancements, helped us achieve the HIPAA scores listed above.

For the faculty and students in the pre-clinic, Wyse terminals replaced the antiquated PCs to access Precare, a practice version of Eyecare used to train the student clinicians. The Wyse terminals provides a low cost, fast and reliable way for the pre-clinic to access a student practice version of our clinic software.

Equipment and Facilities Improvements

In July 2016, we started overhauling and redesigning our clinic space. Utilizing the new Berkeley Optometry logo and font guidelines, we created new exam room and module hallway signage. The new designs incorporate an interchangeable plates system allowing us to make changes and updates to signs in-house without the need for new installations. As of 2016 all exam rooms have been completed and the eyewear center will be completed in 2017.

Using a grant we received from the office of Risk Management, we were able to replace all of our patient waiting area chairs. The new upholstery is medical grade and are much more hygienic than the fabric seats that we have been using for decades. These surfaces are wipeable, repel bacteria, and are comfortable for our patients. They are also modular, allowing us to replace them as needed. To fill out the new waiting areas, we also purchased new end tables for our patients to use and enjoy.

In early 2016 we sent a request out to our community to submit their photos to be displayed in clinic. We received well over 200 photo submissions and selected more than 75 for our hallways, waiting areas, and general lobby. Photographers were asked to submit a title and description of the photo that was included in the framing. Framing and mounting were done in house by Clinic Administration and our E-team (equipment team), giving us the opportunity to change our photos as we see fit to keep the photos fresh. The project was completed in August of 2016.

As of December 2016, every exam room is utilizing LED lighting. Most modules have LED fixtures but for the few exam rooms in clinics that do not, we installed LED bulbs. By the end of 2017 we're hoping to secure additional rebates and savings that will qualify us to replace the last few non-LED fixtures in our exam rooms. Once that is complete, we will work on replacing the fluorescent lights throughout the Eyewear Center and the surrounding offices such as the Clinic Administration.

Other beautification projects that were completed include the repainting of the clinic hallways as well as the lobby and front desk. We also added new anti-slip strips on the stairway between the first and second floor.

Special Events

The clinic hosted the ASCO Clinic Directors/Administrators SIG and the ASCO Externship Directors SIG annual meetings in September 2016. There were 43 Clinic Directors/Administrators and 36 sponsor representatives (representing 22 company sponsors) who attended the Clinic Directors/Administrators SIG meeting. There were 28 representatives in attendance at the Externship Directors SIG meeting. These annual meetings bring together leadership from all of the North American Optometry schools to further optometric education, discuss critical issues common to all schools, and to collaborate on new projects and initiatives for the benefit of our collective patients, students, educators, and institutions. This year's annual workshop included expert speakers covering the following topic areas:

- Lisa Feldman: "How to Work with Millennials"
- Frank Schultz, MBA, PhD: "Leadership Excellence: An Opportunity for Optometric Excellence"
- Howard Purcell, OD: "How to Bring Your Practice into the Future"
- Rebecca Andersen: "Branding Your Practice in a Convenience Driven Society"
- Greg Nixon, OD; Carole Timpone, OD; Rob Herrick; "Successes and Failures in the Optometry Clinic"

Residencies

Mission Statement

The Optometry Residency Program at Berkeley 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

There was a change in the leadership position for the On-Campus Residency Program. Mika Moy, OD, FAAO, who served as the Director of On-Campus Residency Programs for the last fifteen years, stepped down. The position was filled by Kuni Kanai, OD, FAAO, as of July 1st, 2016. Christina Wilmer, OD, FAAO, continues as the 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

(1 position in each of the following areas)

Program Emphasis

Vision Therapy and Rehabilitation
 Cornea and Contact Lenses
 Ocular Disease
 Low Vision / Ocular Disease
 Pediatrics / Primary Care
 Primary Care / Contact Lenses
 Primary Care / Community Health

Chief Mentor

Deborah Lee, OD, FAAO
 Pam Satjawatcharaphong, OD, FAAO
 Carl Jacobsen, OD, FAAO
 Marlena Chu, OD, FAAO
 Deborah Orel-Bixler, PhD, OD, FAAO
 Christina Wilmer, OD, FAAO
 Meredith Whiteside, OD, FAAO

ACOE Site visit for the on-campus umbrella program occurred in April 2015, with full accreditation. The next site visit is scheduled for 2023.

Veterans Affairs Central California Health Care System Fresno

(3 positions)

Primary Care Optometry

The ACOE site visit occurred in May of 2016 with full accreditation.

Next ACOE site visit is scheduled for 2024.

Residency Coordinator: Deana Lum, OD, FAAO

Veterans Affairs Palo Alto Health Care System

(4 positions)

Primary Care/Low Vision (3 positions)

Primary Care/Brain Injury (1 position)

Next ACOE site visit 2017

Residency Coordinator: David Yang, OD, FAAO

Sierra Nevada Health Care System Reno

(2 positions)

Primary Care Optometry

Next ACOE site visit 2022

Residency Coordinator: Marla Plecha, OD, FAAO

Department of Veterans Affairs Medical Center, San Francisco

(3 Positions)

Primary Care Optometry

Next ACOE site visit: 2017

Residency Coordinator: Andrew Mick, OD, FAAO

Current Residents

The residency application process is very competitive. All residents match through the ORMatch process found at the following link <https://natmatch.com/ormatch/index.html>. All positions were filled this year.

The following residents have matched with the corresponding programs during the 2016 application cycle:

Program	Resident	OD Degree from
UCB	Angela Shahbazian, OD (PC/CHO)	UCB
UCB	Catherine Huang, OD (PC/CL)	UCB
UCB	Stephanie Jian, OD (Peds)	UCB
UCB	Tara Pahlevan, OD (OD)	UCB
UCB	Mengli Han, OD (VTR)	ICO
UCB	Laurel Hammang, OD (CLs)	ICO
UCB	Tiffany Khoo, OD (LV/OD)	MCPHS

FVA	Emily Mak, OD	UCB
FVA	Jennifer Parks, OD	UCB
FVA	Pearl Thai, OD	NECO

PAVA	Cheryl Conovaloff, OD	SCCO
PAVA	Linda Nguyen, OD	SCCO
PAVA	Jacqueline Su-yuo, OD	NECO
PAVA	Tracy Wang, OD (TBI)	UCB

RVA	Julie Minnix, OD	ICO
RVA	Jennifer Hua, OD	Western

SFVA	Yangdi Chen, OD	UCB
SFVA	Jill Lobingier, OD	UCB
SFVA	Anna Wang, OD	SUNY

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 2016 Resident Forum was the 13th annual event.

The following were held during the 2016 calendar year:

- Veterans Affairs Palo Alto Health Care System February 26, 2016
- Resident Forum: UC Berkeley School of Optometry June 12, 2016
- Department of Veterans Affairs Medical Center, San Francisco Sept 30, 2016

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 Anaheim 2016.

1. Anna Wang (SFVA): Paradigm Shift in Management of Acute Isolated Cranial Nerve VI Palsy
2. Yangdi Chen (SFVA): Clinical Spectrum of Nonarteritic Anterior Ischemic Optic Neuropathy
3. Stephanie Jian (UCB): Ocular Manifestations of Bardet-Biedl Syndrome
4. Angela Shahbazian (UCB): A Rare Case of Presumed Peripheral Cone Dystrophy
5. Catherine Huang (UCB): Corneal Tattoos; An Alternative Treatment for Glare Secondary to LPI
6. Tiffany Khoo (UCB): A Clinical Presentation of Stargardt Disease and Low Vision Management
7. Pearl Thai (Fresno VA): Where's the bleeding coming from? A case of recurrent basal cell carcinoma
8. Emily Mak (Fresno VA): Fellow Eye Involvement in NAION: Doctor will I ever be in the Clear?
9. Tracy Wang (PAVA): Monocular "Complete Hemianopsia Secondary to Multiple Traumatic Brain Injuries
10. Jacqueline Su-yuo (PAVA): Irreversible Severe Vision Loss Associated With Acute Quinine Sulfate Optic Neuropathy

New Initiatives

1. Webinar recruitment: For the first time, webinar information sessions were offered to potential applicants who are interested in Berkeley Optometry on-campus residency programs. The session duration was 1-hour, and the Director of On-Campus Residency Programs, Kuni Kanai OD, explained features of the seven on-campus residency programs, general curriculum, and its application process. The session was held three times: 10/20, 11/17, and 12/15/2016.
 - a. **Benefit:** This webinar allows the programs to reach out to applicants who are from other schools and may be unfamiliar with our programs. It also clarifies differences among each on-campus program, so that applicants would have clear idea at the time of their application.
 - b. **Outcome:** a total of 42 applicants joined the webinar over three sessions. Attendees included students from other schools, such as SUNY, ICO, Western, and Alabama.
2. Journal Club: Journal Club is a collection of clinically-useful journal articles. The collections are selected by residents and available online through the Berkeley Optometry website. In this residency year (2016~17), the residency program implemented additional journal services, "Article of the Month," in which residents take turn and present an up-to-date article every month.
 - a. **Benefit:** this program allows dissemination of residency-level clinical knowledge to the second, third, and fourth year optometry students as well as clinical faculty.
 - b. **Outcome:** starting October 2016, a new article was presented monthly by different residents. Its topics include plaquenil maculopathy, corneal cross-linking, and macular degeneration.

T35 NEI Summer Research Program

Goals

Berkeley Optometry runs a short-term (10 weeks) summer research-training program for OD students — the T35 training program — whose goal 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 from 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, Berkeley Optometry 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 2016 there were 20 applicants of whom 4 were from schools and colleges other than UC Berkeley School 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. One Canadian student and one Chinese student from UC Berkeley were also supported from other funds. 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 ongoing. Another new strategy to increase the applicant pool is to use, as communication channels, student chapters of the National Optometric Association, whose membership is ethnically diverse. It is hoped that the yield from this strategy will improve, with a local student (NOSA) chapter now re-established.

The table below 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 ongoing research within the School of Optometry/Vision Science Program. The strong translational emphasis of their research is also noteworthy. Of these trainees, two of the T35-funded students and one of the international students have remained active in research, despite the heavy course load carried by our 2nd year OD students. All three of these students are considering applying for research honors. One of the students is also a co-author on a paper currently under review (see footnote).[#]

NEI T35 Summer Research Program – 2016 Trainees

Who were they, where did they come from and who were their mentors?

[#] Koulieris G, Bui B, Banks M, Drettakis G. Accommodation and comfort in head-mounted displays. Submitted to Siggraph.

ICO: Illinois College of Optometry; HCO: Houston College of Optometry
International student; funded by Berkeley Optometry

UNIVERSITY OF CALIFORNIA OPTOMETRIC STUDENT

Student	Optom School of Origin	Title of Project	Faculty Mentors Clinician scientists/ Post-doc Fellows/ Grad Students
Summer 2016			
Anna Lily Xie	BERK	Contact Lens-related <i>Pseudomonas aeruginosa</i>	Suzzi Fleiszig/ Matteo Metruccio
Vincent Chan	BERK	High Order Aberrations Induced by Refractive Surgeries and their Effect on Stereo Acuity	Sangeetha Metlapally/ Cliff Schor
Kristi Choy	BERK	Bruckner Reflex versus Streak Retinoscopy as Screening Tools in Children	Debora Orel-Bixler
Valerie Lim	BERK	Light Dosing and Its Effect on Choroidal Thickness and Myopia Progression	Elise Harb/ Chris Wildsoet
Jennifer Nguyen	BERK	A Study of Time and Dose-dependent Effects of Low Concentration Atropine on Accommodation and Pupil Size	Sarah Kochik/ Maria Liu
Ghazal Naseri*	BERK	Effect of Anti-Glaucoma Drugs on Myopia Progression in Guinea Pigs	Nevin El Nimri/ Chris Wildsoet
Rachel Choi	BERK	Gene Therapy in Retinal Degenerations	John Flannery/ Cecile Fortuny
Priscilla Chang	ICO	Treg Involvement in Sjogren Syndrome Development	Nancy McNamara
Bee Bui	BERK	Keratitis Visual Discomfort with Stereoscopic 3D Head Mounts	Marty Banks
Charlotte Wang*	BERK	Relationship between Foveal Cone Density and Axial Length	Austin Roorda/ Sowmya Ravikumar
Fiona Yuan	BERK	Virtual Reality: Not just for Gamers	Dennis Levi
Tiffanie Truong	BERK	Rate of Adherence To Treatment Recommendations For Sight-Threatening Diabetic Retinopathy	Jorge Cuadros/ Taras Litvin
Katherine McCracken	HCO	Not All Dry Eye Questionnaires are Created Equal	Meng Lin/Eric Li
Jessica Yuen	BERK	The Relationship between Ocular Surface Cooling and Ocular Comfort	Meng Lin/Eric Li

ASSOCIATION
(UCOSA)

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 2 was revised in early 2015.

American Academy of Optometry

More than a hundred students attended the annual American Academy of Optometry meeting at Anaheim in November 9-12, 2016. 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 underserved 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) with a fundraising goal of \$2016 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 Penny Wars. Students were provided food such as sushi, cookies, and candy throughout the week to encourage participation. In total, the Penny Wars competition raised \$825, with 3,995 pennies in total. Combining both programs, our students 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.

The Big Give

On November 17th, thanks to contributions from students, faculty, alumni, and outside donors, Berkeley Optometry placed 7th in UC Berkeley's annual online fundraising event, The Big Give. Berkeley Optometry won the campus prize for most student contributors! Not only did our small community out-pledge many larger campus units, but the student participation doubled from the previous year!

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. In 2017, the Yule Ball (Harry Potter) themed Eyeball will be held on April 8th at the Oakland Zoo's Snow Building.

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. Watch the videos here: <http://www.youtube.com/user/TheOptoBear>

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 2016, the students cheered on John Fischer, a third year optometry student, as the representative for Berkeley Optometry in Boston, Massachusetts. 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 February, Berkeley Optometry students will travel to San Francisco 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 April, Berkeley Optometry headed to Sacramento 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 Boston 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

The club is dedicated to bringing student awareness and insight to unconventional career paths that exist after graduating 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.

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

37-40 graduate students were enrolled in the Vision Science Graduate Group in 2016. A rich diversity of academic backgrounds -- including neuroscience, biology, engineering, computer science, psychology, optometry, and others -- is a hallmark of the group.

Admissions

- 41 direct applicants, 5 of whom had OD degrees (2 domestic, 3 foreign)
- Applicants from Neuro, Hellen Wills, BioE and Psychology were invited to transfer to VS
- 23 applicants were invited for the March 7-8 Interview Day
- 9 offers of admissions were made in March (plus 1 deferred was re-admitted)
- 6 applicants enrolled for Fall 2016, including 1 applicant with an OD
- Average GRE %: 50/70/40
- Average GPA: 3.36

Funding

- \$530,177 in T32 Vision Science Training Grant
- \$143,207 in Block and Summer Grants
- \$30,204 in NRT waivers
- \$125,707 in Graduate Division Awards (1 Berkeley, 1 Chancellor's, and 1 Hellman Fellowships)
- \$593,000 in CORE Grant (provides research supports through 4 modules)
- \$89,104 in School of Optometry Funds (Sweigert Fund and Morgan Fund)
- \$123,057 in FSREP (current balance)
- >\$11 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 31, 2016, there were 39 graduate students enrolled in the Vision Science program, five of whom were students with an OD degree and one student with a DVM.
- The annual student stipend was \$30,000.

Student Awards Received

- ARVO/VSS Student Fellowship (Kavitha Ratnam)
- Minnie F. Turner Memorial Fund for Impaired Vision Research (Jasmine Junge, Alexandr Boehm, Nevin El-Nimri, Cécile Fortuny, Kelly Byrne)
- American Optometric Foundation Ezell Fellowship 2016 (Alexandra Boehm, Jessica Wei)
- 2016 Oski Student Leadership Award (Jessica Wei)
- Best Executive Team for Beyond Academia (Jessica Wei)
- Berkeley Fellowship for Graduate Study (Avi Aizenman)
- Hellman Graduate Award (Sarah Kochik)
- NVIDIA Fellowship 2015 (Brian Cheung)
- NSF Graduate Research Fellowship (Natalie Stepien-Bernabe)
- 2016 UC Berkeley Graduate Assembly Travel Award (Jessica Wei)
- Conference Travel Grants Awards from Graduate Division at UC Berkeley (Gyeong Jin)
- Graduate Division Parent Grant (Gyeong Jin)
- Tear Film and Ocular Surface Conference Young Investigator Travel Grant (Stephanie Wan)
- NIH Diversity Supplement (Billie Beckwith-Cohen)
- Academic Opportunity Fund, Travel Award (Billie Beckwith-Cohen)
- UC Berkeley, Graduate Division Summer Grant (Billie Beckwith-Cohen)
- Academic Opportunity Fund, Travel Award (Billie Beckwith-Cohen)
- Mary J. Koshland Fund in Memory of H.A. Jastro, Travel Grant (Billie Beckwith-Cohen)
- American Academy of Optometry Student Travel Award (Billie Beckwith-Cohen)
- Best Paper Award from Journal of the Society for Information Display (Natalie Stepien-Bernabe)
- Distinguished Paper Award from Journal of the Society for Information Display (Natalie Stepien-Bernabe)
- 2016 UC Berkeley HHMI International Research Fellowship National Finalist (Cécile Fortuny)
- Research Award, 2016 BrightFocus Foundation's Young Investigator Travel Award (Cécile Fortuny)
- NSF GRFP Honorable Mention (2015) (Kelly Byrne)
- Vision Science students authored 19 papers in 2016
- Vision Science students gave 29 presentation at the following events: American Academy of Optometry Meeting Anaheim, Fall Vision Meeting, ARVO, Genomics in Action Meeting at University of Oregon, Gordon Research Conference, Tear Film and Ocular Surface Conference, International Conference on Learning Representations Workshop, The Association for Research in Vision and Ophthalmology, Annual Scientific Meeting of the European College of Veterinary Ophthalmology, Veterinary Ophthalmology Annual Conference, Society for Neuroscience Conference and others

Degrees Conferred

- PhD - Wing (Eric) Li, OD (Lin)
- PhD - Diane Nava, PHD (Wildsoet)
- MS - Cristopher Purington (Klein)
- PhD - Christy Sheehy (Roorda)

- PhD - Taras Litvin, OD (Roorda)

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 28th annual BAVRD featured an inaugural Alumni award, which was granted to Amir Khosrowshahi, an Outstanding UC Berkeley Vision Science Alumnus, for his achievements in the profession. Prof. Marty Banks was the keynote speaker at the event, which featured 12 speakers from 5 different institutions in the Bay Area, and an award-winning poster session.

BAVRD is funded by donations raised by second year Vision Science graduate students. The 28th annual BAVRD had record-breaking fundraising (\$12,900) and attendance, with well over 200 participants. BAVRD was made possible by generous donations from Google, Magic Leap, OcuScience, Jackson Laboratories, ThorLabs, Ricoh, Oculus, UC Berkeley Graduate Assembly and the departments of Optometry, Psychology, Molecular and Cell Biology, Helen Wills Neuroscience Institute, The Redwood Center for Theoretical Neuroscience 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 day and half retreat returned the Marconi Conference Center in Marshall, CA (near Point Reyes). All students were invited to give a 5-minute lightning talk, for which stipends or research funds were awarded for best presentations. Postdoctoral scholars, staff research scientist and faculty 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 Teresea Puthussery and Rowland Taylor, two new faculty members who joined the School of Optometry and Vision Science Program in January 2017. Traditionally the evening keynote lecture (a student favorite) intertwines the faculty's personal narrative and scientific career with advice for success. The event has many social aspects as well, including a group activity planned by the 1st year class, a student-faculty poker game and a social event after the keynote lecture.

Attendee Numbers (Total: 59)

- VS Faculty: 11
- VS Post-Docs: 11
- VS Staff/Researcher: 4
- VS Students: 29
- Other (ICSI, HWNI, etc): 4

Presentation Awards:

- Assistant Researcher: Karl Zipser
- VS Student Lightning Talk First Place: Zach Helft (Kramer Lab)
- VS Student Lightning Talk Second Place: Sahar Yousef (Silver Lab)
- VS Student Lightning Talk Third Place: Billie-Beckwith Cohen (Kramer 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.