As Michael Drake, MD, ends his tenure as chancellor of UC Irvine (UCI), his legacy is clear. The Gavin Herbert Eye Institute building stands as one of many initiatives that Chancellor Drake brought to fruition to enhance the campus.

“My job as chancellor was to broadly facilitate growth and support excellence on the campus, which included opening the School of Law, starting an annual outdoor Shakespeare Festival and expanding the Paul Merage School of Business,” explains Chancellor Drake. “The eye institute was easy to champion because of the quality of the people that were involved, their strong vision and the depth of community support.”

Looking Back
A glaucoma specialist at UC San Francisco for 26 years, Chancellor Drake first crossed paths with Roger Steinert, MD, in 1982 at Harvard’s Massachusetts Eye and Ear Infirmary while completing a glaucoma fellowship. Since ophthalmology is a relatively small, tight-knit community, they kept in touch and followed each other’s careers.

“Chancellor Drake arrived in 2005, a year after I had been recruited to UCI from Boston,” recalls Dr. Steinert, now GHEI’s Director. “It was a phenomenally happy surprise. We joked that it was great to have a chancellor who could spell ophthalmology.”

Looking Forward
“Thanks to Chancellor Drake, our vision of the institute has become a reality,” says Dr. Steinert. “The bright, energetic and ambitious faculty is eager to contribute to ophthalmology. Our patients are reaping the benefits—they are constantly impressed by their comprehensive visual evaluations. It’s something they haven’t experienced anywhere else, and we are able to offer therapeutic options they haven’t heard of before.”

“The institute is in great hands,” concludes Chancellor Drake. “With outstanding leadership, world-class faculty members, a supportive community and now a state-of-the-art facility, I’m very excited about the institute’s progress toward reducing or even eliminating blindness by 2020.”

In This Issue

- Lighting the Way to a Cure for Retinal Degeneration
- Focus on the Fellowship Program
- Seeing the Results: Marjan Farid, MD
- A Shining Example of Partnership

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Thank you for supporting the Shine The Light Campaign
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- For more information about the Gavin Herbert Eye Institute, please call (949) 824-0091.

SHINING A LIGHT ON CHANCELLOR MICHAEL DRAKE’S CONTRIBUTIONS TO THE GAVIN HERBERT EYE INSTITUTE

Outgoing UC Irvine Chancellor Michael V. Drake was a driving force behind building the new Gavin Herbert Eye Institute (GHEI).

He also authorized campus resources, received approval for the institute from the UC Board of Regents, and provided leadership for the financial and construction teams.

Looking Forward
“Thanks to Chancellor Drake, our vision of the institute has become a reality,” says Dr. Steinert. “The bright, energetic and ambitious faculty is eager to contribute to ophthalmology. Our patients are reaping the benefits—they are constantly impressed by their comprehensive visual evaluations. It’s something they haven’t experienced anywhere else, and we are able to offer therapeutic options they haven’t heard of before.”

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UC Irvine Chancellor Michael Drake

www.eye.uci.edu/spring
PROGENITOR CELL RESEARCH
LIGHTING THE WAY TO
A CURE FOR RETINAL DEGENERATION

Cells of the retina, which detect light from the back of the eye, are a part of the central nervous system (CNS). Unlike other parts of the body, the CNS cannot heal itself once it is damaged by injury or disease. This makes degenerative eye diseases like retinitis pigmentosa (RP)—a genetic disorder that causes progressive damage to retinal cells—incurable. RP can cause blindness, and symptoms typically begin to appear during adolescence.

At least 100,000 Americans are afflicted by this orphan disease. Many more suffer from RP in China, where Jing Yang, MD, PhD, regularly encountered retinal diseases in her patients at one of the top-ophthalmology practices in the country. “After six years in the clinic, I realized that retinal degeneration is a common and serious problem, with millions of people around the world suffering and going blind.” Dr. Yang recollects. “RP was adversely impacting my patients’ lives, and I had to inform them that there was no cure.”

“I chose to enter into the field of stem cell research to work on a cure for these challenging retinal diseases. During three years of research in Denmark, I made a number of valuable stem cell discoveries. That inspired me to become a full-time researcher with the goal of using stem cells to help blind patients regain their sight.”

Seeing Eye to Eye
Retinal progenitor cells are comparable to stem cells that have become restricted to only differentiating into cells of the retina. When transplanted into a diseased eye, these cells are capable of producing new photoreceptors, thereby restoring retinal function. In addition, progenitor cells can save the host photoreceptors from degeneration in the first place, thus providing a method to preserve vision.

As Dr. Yang researched retinal progenitor cells in Denmark, she met Henry Klassen, MD, PhD, who was working on a similar project in the United States. “At that point, we were early on in the development of progenitor cells. I met Dr. Klassen in the cell culture lab to discuss our progress. Like me, he had also trained as an ophthalmologist, so we had a lot in common. We both felt like this research was not just a job, that it was our mission to use this advanced science to help patients.”

Dr. Yang has worked closely with Dr. Klassen on stem cell therapy research for the treatment of retinal degeneration since she joined his lab at the Gavin Herbert Eye Institute in 2006. They married in 2010. “We are currently collaborating on using retinal progenitor cells as a therapy for RP,” says Dr. Yang. “We are pioneers—our research could lead to one of the first approved stem cell therapies in eye care and pave the way for the treatments of otherwise incurable diseases of the brain and spinal cord. Clinical trials could start as early as next year.”

Under Watchful Care
Progenitor cells need a lot of attention in the lab. “Great skill is required because the cells are viable for a limited time,” explains Dr. Yang. “Other researchers with similar projects have failed in culturing these cells. I developed cell culture methods to keep the cells happy, and put in so much time feeding and caring for them that I call them my babies.”

“Once the cells have grown, we test them to verify that they are the right kind of cells and then perform many additional tests for safety. We use an animal model to make sure no tumors form over time, and then also test for visual efficacy in an animal model of retinal degeneration. Once all of our animal tests are successful, we must repeat all of our work using cells manufactured at a pharmaceutical-grade level and again test for safety and therapeutic potency. From there, we can apply to the FDA to start a clinical trial that will help to turn these progenitor cells into an easily injectable drug for patients.”

Progenitor cells could eventually be used to treat other retinal conditions including age-related macular degeneration and glaucoma. Dr. Yang has already begun gathering the preliminary efficacy data. “Dr. Klassen and I are fully committed to developing stem cell therapy for patients with RP and eventually treatments for other retinal diseases,” asserts Dr. Yang. “It will be very validating once we can start helping patients to see again.”

“I made a number of valuable stem cell discoveries that inspired me to become a full-time researcher with the goal of using stem cells to help blind patients regain their sight.”

— Jing Yang, MD, PhD

OUR BRIGHT FUTURE

Thanks to your continued generous support, the Gavin Herbert Eye Institute is growing rapidly. Since opening our doors last September, we’ve performed 685 sight-saving surgeries and had 13,394 patient visits as of April 30th. And we’re just getting started.

I am also proud of the cutting-edge work we are doing on corneal blindness, which affects about 10 million people worldwide. Our partnership with SightLife’s eye bank facilitates research to advance femtosecond laser corneal transplantation for quicker recoveries and better visual outcomes. The discoveries we make could lead to a better understanding of new treatments for corneal blindness that will help our patients here in Orange County and people all over the world.

The institute’s mission is to eradicate preventable blindness by 2020. For information on how you can help, please contact Janice Briggs, Executive Director of Development, UC Irvine Health Advancement, at (949) 824-0091.

Sincerely,
Roger Steinert, MD
Chair, Department of Ophthalmology

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TO CONTACT FACULTY MEMBERS OR TO MAKE AN APPOINTMENT, CALL (949) 824-2020 (IRVINE) OR (714) 456-7183 (ORANGE)
THE GAVIN HERBERT EYE INSTITUTE FELLOWSHIP PROGRAM

The Gavin Herbert Eye Institute (GHEI) offers prestigious fellowships in four specialties: cornea, glaucoma, oculoplastics and retina. The directors of each program share what makes these fellowships unique.

Cornea
(1-year program; accepts 2 fellows per year)

Marjan Farid, MD—The cornea fellowship program has existed in its current form since 2005. I participated as a fellow from 2006 to 2007. The program provides excellent training and continues to improve every year. With an emphasis on cutting-edge corneal surgical techniques and the inclusion of severe ocular surface disease management, we address a greater diversity of corneal pathology than most programs around the country.

The institute is the only tertiary eye care center in Orange County, so all of the complex cases in the area come through GHEI. It gives our fellows great exposure to a variety of corneal disease diagnosis and treatment.

To be a great cornea specialist, you not only have to be a good clinician and surgeon, but you also have to learn about the science behind what we do and contribute to it. Therefore, all fellows are involved in research and present at national meetings every year. They also actively participate in a teaching role, attending the residents in the clinic and operating rooms.

The relationship with our fellows continues beyond their one year with us. Our former fellows email and text us questions about difficult cases even many years out. It’s a lifelong mentor–mentee relationship.

Glaucoma
(1-year program; accepts 1 fellow per year)

Sameh Mosaed, MD—For each of the 10 years I’ve directed the program, we have matched our top choice out of a couple dozen applicants. We’ve never gone unmatched, which is a rarity for glaucoma fellowships across the country.

We are one of a few centers around the world to offer the Trabectome procedure (since 2006), and the ExPRESS glaucoma filtration device (for several years). Our fellows are well-trained not only in standard procedures like trabeculectomy and tube shunt placement, but also cutting-edge approaches that other institutions may not yet offer.

Our fellow sees patients in the clinic three days a week, shadowing myself and Dr. Anand Bhauti, and spends the other days in the operating room. The fellow is always directly supervised, making for a safe, well-trained and ultimately confident graduate with good analytical skills and judgment.

Fellows present their research results at national meetings and publish in distinguished journals such as the Journal of Glaucoma. Recent graduates are in highly sought after private practices in Southern California, as well as in the Kaiser system, at the Long Beach Veterans Affairs Hospital (LBVA) and at major academic medical centers.

Oculoplastic
(2-year program; accepts 1 fellow at a time; additional international fellows)

Jeremiah Tao, MD—Our two-year oculofacial plastic and orbital surgery fellowship covers the diagnosis, management and surgical correction of ophthalmic plastic and reconstructive disorders, and has been in place since 2009. We accept one American fellow every other year. We also accept an international fellow for one to two years, depending on the fellow’s prior training or experience.

The fellowship provides extensive hands-on clinical and surgical experience at diverse teaching hospitals, facilities and healthcare systems. Fellows participate in research ranging from innovative orbital/brow techniques to device development.

The academic environment and research opportunities at GHEI foster innovation and teaching skills, as well as prepare fellows to be outstanding oculoplastic and orbital specialty surgeons. One former fellow teaches our current fellows and residents at the LBVA and UC Irvine Medical Center (UCIMC). Other former fellows stay in touch, and some participate in our quarterly fellows conference.

Retina
(2-year program; accepts 1 fellow per year; additional international fellows)

Baruch Kuppermann, MD, PhD—Retina fellowships have been part of the institute for over 21 years. I’ve been the director for 10. Every year, we accept one American Retina (AR) fellow out of 50 applicants through a nationwide matching program. AR fellows spend two years on the clinical retina service. They train to perform surgery and diagnose retinal diseases in an office setting, seeing patients from premature infants to the elderly.

We also have two-year international fellowships. These medical/research retinal fellows join the retina service and see patients, but about 80% of their time is spent doing lab research under faculty supervision. They culture retinal cells and expose them to drugs and environmental toxins to study predictive toxicology, disease processes and the effects of cholesterol, nicotine and macular degeneration.

The international surgical fellow comes in as a senior fellow who helps to train AR fellows and performs more complex retinal surgeries. Half of the fellow’s time is spent on important translational research to understand disease processes that can be applied to managing and treating patients’ retinal diseases.

Our fellows move on to a private practice or an academic setting and stay connected through co-publications, regular correspondence and alumni meetings. Fellows who stay local often volunteer to train residents. It’s very rewarding and satisfying to know that we have trained over 30 retina specialists who are battling retina diseases all over the world.

“...we have trained over 30 retina specialists who are battling retina diseases all over the world.”

— Baruch Kuppermann, MD, PhD
**SEEING THE RESULTS**

**GHEI CORNEAL TRANSPLANT SPECIALIST’S DEDICATION TO SIGHT**

From the first eye surgery she observed during medical school, Marjan Farid, MD, knew that she wanted to be an ophthalmologist. “I was attracted to the complexity and intricacy of performing surgery in a very small space that controls such an important function in our lives: our vision,” Dr. Farid recalls. “I definitely made the right decision because I love what I do and can’t imagine doing anything else.”

Having completed both her residency and cornea fellowship at the Gavin Herbert Eye Institute, Dr. Farid joined the institute’s faculty in 2007. She is currently the Director of Cornea, Cataract and Refractive Surgery; Vice Chair of Ophthalmic Faculty; and an Associate Clinical Professor who trains residents and fellows on cataract and corneal surgery.

One of Dr. Farid’s passions is treating severe ocular surface diseases (OSDs), such as Stevens-Johnson syndrome, caused by chemical, thermal or radiation damage, such as Stevens-Johnson syndrome, or chemical burns that may result in blinding corneal scarring. Another severe OSD is aniridia, a congenital disease that can be treated with corneal stem cell or artificial cornea transplantation. “Many of these patients need heavy immunosuppressive medications and frequent monitoring and care, so I collaborate with the liver and kidney transplantation team at the UC Irvine Medical Center,” says Dr. Farid. As the only ophthalmologist on the West Coast who performs corneal stem cell transplants, I’m truly proud to offer treatment to these patients with very difficult eye conditions.”

Femtosecond laser corneal surgery, pioneered at the institute, is Dr. Farid’s research focus. She is working to expand its application to partial corneal transplants, making faster recovery and better optical outcomes available to more patients.

In January, Dr. Farid joined the editorial board of Ophthalmology, a leading medical journal. She is also on the cornea subcommittee of the American Society of Cataract and Refractive Surgery, a resource for corneal treatment and surgery information on a national level. “People in these roles are considered leaders in the field, so it’s an honor and a privilege to be in that group,” Dr. Farid declares.

Dr. Farid owes much of her success to Roger Steinert, MD, the institute’s Director. “He really took me under his wing during my fellowship,” explains Dr. Farid. “His mentorship and passion for innovation and discovery, especially for laser technology, really ignited a flame in me—I’m dedicated to creating and perfecting new technologies for the cornea and cataracts that will make a huge impact on people’s lives and vision in Orange County and around the world.”

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**SIGHTLIFE AND GHEI**

**A SHINING EXAMPLE OF PARTNERSHIP**

Up to 10 million people worldwide are affected by corneal blindness. SightLife, a non-profit focused on eliminating corneal blindness, acts as an eye bank for corneal transplants in the US and makes tissue available to partners in more than 30 countries. “As the largest provider of corneas for transplant in the world, we facilitated over 17,000 corneal transplants last year,” says Monty Montoya, SightLife’s President and CEO.

SightLife has been an instrumental partner in the development of femtosecond laser corneal transplant surgery at the Gavin Herbert Eye Institute (GHEI) since 2005. During the institute’s construction, Seattle-based SightLife was looking to expand to Southern California. Thanks to their collaborative history, a SightLife facility is now housed in the institute’s new building. GHEI’s own Marjan Farid, MD, and Sumit (Sam) Garg, MD, serve as two of its Associate Medical Directors.

**RECOVERING FROM DOUBLE VISION**

Che’lle Hamilton was in the ninth grade when her vision started to blur. Since then, she has spent much of her life dealing with increased vision loss and discomfort.

Fortunately, about a year ago, she was able to have a corneal transplant at the Gavin Herbert Eye Institute. Under the expert hand of Dr. Marjan Farid, the cornea of Che’lle’s left eye was replaced in an hour-long outpatient procedure. Now a college student pursuing a psychology degree, Che’lle is on the steady road to recovery and is no longer bothered when doing some of her favorite activities.

“Having to rely on my one strong eye to make up for my really weak eye was frustrating,” Che’lle explains. “I had double vision, which made everything really blurry. It became almost infuriating, especially when exercising or even just trying to read.”

Compounding her frustration was the cone-like shape of her cornea, which prevented her contact lens from staying in place, and the discovery that she wasn’t a candidate for LASIK surgery.

After deciding that a corneal transplant was her best option, and hoping to find a surgeon with whom she felt comfortable, Che’lle met with Dr. Farid. Soon after, she chose Dr. Farid as her ophthalmologist and eye surgeon.

“Close to a thousand patients at the institute have received transplant tissue through SightLife,” shares Roger Steinert, MD, GHEI’s Director. “The laser incisions we pioneered here have greatly improved recovery and vision for corneal transplant patients. SightLife is a wonderful partner in patient care and advancing treatment of corneal blindness.”

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**“My experience with Dr. Farid was great.”**

Che’lle recalls. “She was informative about the procedure—which to expect, possible outcomes, the healing process and the continued care I would receive. It really encouraged me to move forward with the corneal transplant.”

A year after the surgery, Dr. Farid closely monitors Che’lle’s vision and notes continued progress. With a better-fitting contact lens over the new cornea, Dr. Farid is excited that Che’lle’s vision has come such a long way and that she can now fully enjoy her college years.

“Che’lle was totally worth it!” Che’lle says of the procedure. “I’ve noticed improvement in my eyesight. Some changes have been gradual, but seeing continued results is a good feeling.”

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“I’m dedicated to creating and perfecting new technologies for the cornea and cataracts that will make a huge impact on people’s lives and vision in Orange County and around the world.”

— Marjan Farid, MD
After their companies were both acquired by SmithKline in the early 1980s, Lou Rosso of Beckman Instruments and Gavin Herbert of Allergan frequently flew together from California to the East Coast to attend parent company meetings and gatherings. Many shared flights later, the companies spun out from SmithKline in 1989 and were once again each publicly traded.

“I became the CEO of Beckman, and Gavin resumed as Chairman and CEO of Allergan. Based on our professional and personal relationship, we asked each other to join our respective company boards and both served for over 15 years,” recalls Rosso. “I've admired Gavin from the beginning. As I got to know him more and saw his accomplishments at Allergan and in the eye care field, I saw tremendous achievement. Gavin is truly an icon in serving ophthalmology.”

The Rosso Family Foundation, led by Rosso and his wife Penny, made a donation to establish the Gavin Herbert Eye Institute's patient check-in/check-out areas. “The institute is a capstone to Gavin's career,” says Rosso. “He has always insisted on working with the best people that he can find in a given field, and he's done that again here. The faculty, staff and quality of research are truly world class. We're happy to be a small part of it.”

Although he recently moved to San Diego, Rosso remains connected to the Gavin Herbert Eye Institute as a patient. “Anyone familiar with eye care can’t help but be impressed by the institute’s work. There are few things more important than maintaining and restoring sight.”

FROM FREQUENT FLIGHTS TO A LASTING COLLABORATION