CIRM grants $8.3 million for research

Dr. Klassen is finding success with stem cell-based treatment for retinitis pigmentosa

It’s been only a few years since Rosie Barrero heard Dr. Henry Klassen talk about a possible new treatment for retinitis pigmentosa, a hereditary degeneration of retinal cells that had always meant eventual blindness. She was thrilled to sign up for the first phase of clinical trials, which were designed to measure the safety of this experimental treatment.

Now, 16 months after stem-like cells were injected into her left eye, Barrero reports significantly improved eyesight that gradually continues to grow clearer; most recently, she’s noticed that she can read the time on her cell phone, something that was impossible a few months ago.
ago. She experienced no side effects from the treatment. Klassen and jCyte, the company he co-founded to commercialize the treatment, recently won a second grant from the California Institute for Regenerative Medicine to fund most of the next phase of clinical trials, this time to determine the treatment’s effectiveness.

Twenty years ago, when Barrero was diagnosed, her situation was considered hopeless.

Pregnant with twins at the time, Barrero had decided to get laser surgery to correct her weak vision, so that her babies wouldn’t be grabbing at glasses or poking at eyes that had contact lenses. But the doctors who examined her at the laser eye center said she needed to have her retinas checked by the specialist next door.

That was how she discovered she had retinitis pigmentosa; the prognosis was that her vision would deteriorate. And it did.

“With the twins, I read books and books and books to them,” she said. In 2002, she began reading books from the “Bobbsey Twins” series to her children. “We got through four books in a year. But at that point, I found I was having trouble following the words.”

Five years ago, a flier from a retinitis pigmentosa group arrived at her house, promoting an information session that would feature specialists talking about possible new treatments. One of those specialists was Klassen, associate professor of ophthalmology at UC Irvine Medical School, who discussed his plans for a clinical trial using retinal progenitor cells to improve eyesight. Progenitor cells are like stem cells, but at a later stage of development.

“I was thinking, ‘This is my hero, this is the guy!’” Barrero said. She signed up for consideration right away, and was among those asking CIRM to fund the first phase. It did.

That phase wasn’t designed to prove whether the treatment improved eyesight, Klassen explains. It was intended to determine whether the treatment, which involves injecting the cells into the gel-like fluid of the vitreous humor, was without serious side effects. He knows that many of the patients have been happy with the results; now that their trial is finished, they’ll have the opportunity to have the injection in the second eye as well.

From the start, his team’s work earned a good reputation with CIRM. An Early Transitional grant was meant to see the group through three years.

“We hit all the milestones within a year and a half,” he said, “well ahead of time and under budget.”

Meanwhile, Klassen and his team are unraveling additional details about how the treatment works. He has a working theory:

“The rods and cones in the host retina are dying. Our cells send some kind of signal that convinces these cells not to continue in this downward spiral.”

“The progenitor cells aren’t necessarily regenerating new retinal cells,” he said. “But they do seem to reverse the process of degeneration. They’re bringing cells that were sick back to the point where they’re functioning again.”

“The new $8.3 million grant from CIRM covers 60 percent of the next phase of the clinical trials. The rest was raised in a friends-and-family funding round by jCyte,” said Terry O’Neal, the company’s chief operating officer. He expects that trial to start early this year.

Barrero is as excited for the patients who will receive the treatment in the next phase as she is about her own improving eyesight.

“I feel so blessed to be born at this time,” she said. “To be part of something this huge and this groundbreaking.”
As we start the new year, I am happy to report that already we have made exciting progress.

The ongoing research to cure retinitis pigmentosa, led by Dr. Henry Klassen, has reached a significant benchmark: The California Institute for Regenerative Medicine has given his project an $8.3 million grant for the next phase of clinical trials. Earlier clinical trials assessed the safety of the treatment, which consists of injecting retinal progenitor cells. Many patients anecdotally reported improvements in vision as a result of the treatment, and the new trials will carefully examine the treatment’s effectiveness.

The Pediatric Eye Mobile program had a very successful 2016, screening more than 3,000 under-served children for vision problems, resulting in 350 full eye exams. The Eye Mobile team has big plans for 2017, including partnering with School Readiness Nurses at more than 80 schools in Anaheim, Orange, Santa Ana and Tustin; increasing the number of vision screenings to 4,500; and providing more than 700 free pairs of glasses.

Beth Lynn Koehler, who sadly lost her life to pancreatic cancer in 2016, left a generous gift in honor of her mother to support our research on macular degeneration. We are grateful to Ms. Koehler and our many generous donors and partners for helping us to continue to provide sight-saving treatments and therapies for virtually any eye disorder.

Roger Steinert, MD
Director, Gavin Herbert Eye Institute Chair, Department of Ophthalmology
Physician Q&A: Difference between an optometrist and an ophthalmologist

Most people know that there are two main kinds of eye specialists, optometrists and ophthalmologists, but few fully understand the differences between them. Recently arrived at Gavin Herbert Eye Institute from MD Anderson Cancer Center in Texas, ophthalmologist Dr. Kavita K. Rao talked with us about her work and how people can determine which kind of eye care they need. In addition to opening a practice here, Dr. Rao teaches as an Assistant Clinical Professor of Ophthalmology at UC Irvine Medical Center.

Q. What is the difference between an optometrist and an ophthalmologist?

A. An optometrist is an eye specialist who is skilled in glasses prescriptions and contact lenses. Some will also treat general eye-related conditions. An ophthalmologist is an eye specialist who is a medical doctor trained in eye diseases and who can perform eye surgeries.

Q. When should I make sure to see an ophthalmologist rather than an optometrist?

A. Any ocular-related condition including eye pain, sudden changes in vision, flashing lights or floaters — seeing gray or black specks, for example. Flashes or floaters could be a sign of retinal tearing or detachment, which is an emergency situation. Don’t delay if that happens to you. Also, an optometrist will often refer a patient to an ophthalmologist for progressive blurred vision which is a sign of cataracts.

Q. What are the most common conditions that you treat?

A. Persistent dry eye is quite common and very treatable. In addition to eyedrops, we have a wide range of treatments now that include medications to encourage the formation of tears, as well as anti-inflammatory medications. For people with severe dry eye that doesn’t respond to other treatments, we can even create tears from their own blood. Conjunctivitis is another common ailment.

Q. What are the most uncommon problems you see?

A. I had one unusual case last week. A woman came in with eye pain from her new contact lenses and her previous health care provider couldn’t find the cause. It turned out she was wearing one contact lens on top of the other. I found them under her eyelid.

Q. Why is it important for people with certain conditions to see an ophthalmologist?

A. Diabetes and high blood pressure affect many parts of the body. They can cause heart attack or stroke, but they also can cause blindness or bleeding in the eye. The best way to treat this is systemically, by controlling the underlying condition. But there are treatments we can do to help the eyes.

Diabetes can cause decreased blood flow to the eye. In response to this, the eye grows new blood vessels, but those are abnormal. They can break and bleed and can cause further damage to the eye. There are lasers and injections into the eye that slow this process.

The ophthalmologist might also be the first doctor patients see before they are diagnosed with diabetes. When we see the kinds of eye damage that indicate diabetes, we urge them to find a primary care physician or endocrinologist who can help manage the disease as a whole, in addition to following up with us for the eye-related issues.

Kavita K. Rao, MD
Paying it forward with DSEK

Dr. Sam Garg has visited his relatives in India a dozen times, but his most recent trip had a very different purpose: to pay it forward with his knowledge of Descemet’s Stripping Endothelial Keratoplasty (DSEK).

DSEK is a revolutionary corneal transplant procedure that has nearly replaced traditional corneal transplants for corneal swelling (a major indication for transplants) thanks to its minimally invasive approach, effectiveness, and rapid recovery time.

Dr. Garg currently serves as Associate Medical Director for the SightLife lab at Gavin Herbert Eye Institute at UC Irvine, and has been involved in SightLife’s mission to eliminate corneal blindness worldwide for several years.

In June, Dr. Garg and Dr. Michael Banitt of University of Washington traveled to Kolkata, India, to serve as visiting faculty for a 4-day surgeon training course in DSEK. They taught alongside Dr. Samar Basak and Dr. Ayan Mohanta at the Disha Eye Hospital.

“We worked with eight Indian surgeons who had not done much DSEK or had tried it and not stuck with it,” said Dr. Garg. “The point was to re-familiarize the surgeons with DSEK and we covered patient selection, surgical technique, post-operative management and complication management.”

The course began with didactics and wet lab time with donor eyes that allowed the trainees to practice preparation and DSEK. Most of the remainder of the intensive course was spent in the operating room, performing sight-restoring surgery on 19 local patients who received free care and housing at the eye hospital. At the end of each day of hands-on learning, the group reviewed and discussed video of every surgery.

“It’s one thing to learn from your own experiences, but you also learn a lot from watching other people and discussing,” said Dr. Garg. “All of the patients were seen by all of the doctors pre- and post-operatively, so there was opportunity to learn there as well. You can learn a lot of the intricacies of DSEK over 19 cases.”

Dr. Garg enjoyed the experience and was very impressed with both the quality of the facility and the dedication of the participating surgeons.

“These doctors are really invested in learning the DSEK technique and embracing it. The purpose of this course was not only to restore sight to the 19 patients, but really to give these surgeons the tools to be able to do this on their own going forward. We paid it forward with them and they can now feel confident in their own practices to do this very innovative surgery.”

“We gave these surgeons, who are early in their corneal careers, a very intensive experience with DSEK that will stick with them for many years to come. Hopefully, it allows for more DSEK to be performed in India.”

— Dr. Sam Garg
A lasting impact

Newport Beach resident Beth Lynn Koehler lived for three years after being diagnosed with pancreatic cancer. Although her life was cut short by the disease, her ex-husband Frank Carri, a lifelong friend and executor of her estate, maintains that it was longer than she would have lived had she been treated anywhere but UC Irvine Health.

“I remain convinced to this day that getting Beth up to UC Irvine Health not only greatly prolonged her life, but it enabled her to acquire a great attitude that enhanced her quality of life,” Carri said. “And that was mainly from being exposed to such positive and caring staff.”

Koehler was so touched and impressed by the treatment she received, she made an estate gift to UC Irvine Health for pancreatic cancer research and training. Though she died in March 2016, her generous gift will help people for a long time to come.

“She really came to love UCI — especially the wonderful nurses in the Infusion Center, where we spent most of our time, but also all the great doctors,” Carri said.

Koehler’s gifts, which will impact several areas across UCI, reflect what mattered to her and double as lasting honors to her parents.

Among the good her contributions will bring about is her support of macular degeneration research at the Gavin Herbert Eye Institute. The endowment was established in honor of Koehler’s mother, who had the sight-robbing condition.

Koehler’s father died of pancreatic cancer, the same disease that stole her health, and eventually her life. The endowments she established for research on pancreatic cancer and to train pancreatic cancer fellows at UC Irvine Health serve as a tribute to him.

These gifts supporting medical research may one day spark discoveries that lead to better treatments and improved quality of life, and ultimately, perhaps even eradicate disease.

Also in honor of her mother, who had been a professional dancer, Koehler established a dance scholarship in her mother’s name at the Claire Trevor School of the Arts, providing perpetual support to aspiring dancers.

“Beth was a good human who wanted to do the right thing” Carri said. “Because of her terminal disease, she came to appreciate the good that money could do for others. In the end, she felt really good about that.”
Thank you to our donors

Gifts of $25,000 and above received since July 1, 2015, to the general fund of the Gavin Herbert Eye Institute:

- Abbott Medical Optics
- Carol and Budge Collins
- Judith K. & Charles D. Fritch, MD
- Josephine Herbert Gleis Foundation
- Ninetta & Gavin S. Herbert

Gifts of $50,000 and above to the proposed Roger F. Steinert, MD, Endowed Chair in Ophthalmology:

- Allergan Foundation
- J. Stuart Cumming, MD
- Josephine Herbert Gleis
- Ninetta & Gavin Herbert
- M. Christina Kenney, MD, PhD & Anthony Nesburn, MD
- Marsha Link, PhD & Bill Link, PhD
- Kelly & James Mazzo
- Martha & James Newkirk
- David E. Pyott
- Joyce & Scott Whitcup, MD

$3,625,500 of the $5,000,000 goal has been raised to date. To make a donation toward this endowed chair, contact Janice Briggs, executive director of development, at 949-824-0091 or jbriggs@uci.edu

Gifts of $25,000 and above received since July 1, 2015 for research:

- Allergan Foundation
- Edith & Roy Carver
- Janet & John Cauffman
- Cystinosis Foundation of New Jersey
- Discovery Eye Foundation
- Josephine & Roy Carver
- Josephine Herbert Gleis Foundation
- Geneva M. Matlock, MD
- Research to Prevent Blindness
- Polly & Mike Smith

New Legacy Gifts of $250,000 and above:

- Dorothy & Rudolf C. Baldoni, MD
- Josephine Gleis
- Ninetta & Gavin S. Herbert
- Geneva M. Matlock, MD

20/20 Society Friends in Vision Gifts of $2,500 and above:

- Anonymous
- Roy E. Dormaier
- Arliss A. Hoskins
- M. Cristina Kenney, MD, PhD
- Cindi & Steve Kirby
- The Kuppermann Family
- Anthony B. Nesburn, MD
- Katy & Jack Schoellerman
- April & Roger Steinert, MD
- Noly & Ted Chau-Po Wei, MD

Pediatric Vision Program Gifts of $10,000 and above:

- Anonymous
- Children & Families Commission of Orange County
- The Nicholas Endowment
- Lon V. Smith Foundation
- Sandy & David Stone

Gavin Herbert Eye Institute hosts its largest colloquium to date

The Gavin Herbert Eye Institute 10th Annual Colloquium, held on November 4 and 5, was our largest to date, and attracted many new attendees. Organized by Roger F. Steinert, MD, and Sam Garg, MD, the guest speakers included Jay S. Duker, MD, Professor and Chair of Ophthalmology and the Director of the New England Eye Center at Tufts University School of Medicine, and Kerry D. Solomon, MD, Managing Partner, Carolina Eyecare Physicians, Director of the Carolina Eyecare Research Institute, and the current president of the American Society of Cataract and Refractive Surgery (ASCRS). Colloquium sessions covered many topics, including current trends in cataract surgery, treatment and management of retinal conditions, optic nerve diseases and glaucoma, corneal disease, with a look forward at innovations and future directions in ophthalmology. Attendees were treated to a tour of the Pediatric Eye Mobile.

The Gavin Herbert Eye Institute holds a reunion at the 2016 AAO Conference

The Gavin Herbert Eye Institute was happy to see so many GHEI alumni at the annual AAO Reunion, from the newest Fellows to alumni from the early days. The event was held at the Metropolitan Club on the 67th floor of the Willis Tower (formerly the Sears Tower), with spectacular views overlooking Chicago. We’re looking forward to next year in New Orleans!

Dr. Marjan Farid, Mrs. April Steinert, Dr. Roger Steinert and Dr. Sam Garg.
WE WANT TO HEAR FROM YOU!

Take our survey about this newsletter and you can be entered to win an iPad™!
www.eye.uci.edu/shinethelight

EVENTS

All events are at the Gavin Herbert Eye Institute in the Cavanaugh Room on the third floor.
To register and attend, call 949-824-7243 or email ghei@health.uci.edu

LASIK Surgery Seminars
Free, informational seminar to learn about LASIK surgery and whether you are a candidate.
Thursday, Mar. 16, 2017, 6:30 to 7:30 p.m.
Thursday, May 18, 2017, 6:30 to 7:30 p.m.

Community Lecture Series
Understanding the causes and treatments for dry eye
Monday, May 15, 2017, 7 p.m.

Make an appointment
Gavin Herbert Eye Institute
850 Health Sciences Road, Irvine, CA 92697
Appointments: 949-824-2020
Optical Shop: 949-824-7690

UC Irvine Medical Center
101 The City Drive South, Pavilion II, Orange, CA 92868
Appointments: 714-456-7183

Make a donation
To learn more about how you can support us, contact Janice Briggs, executive director of development, at 949-824-0091 or jbriggs@uci.edu.
You can also make a donation at http://connect.uci.edu/Gavin-Herbert-Eye-Institute

Find us online
ucirvinehealth.org/eye
www.eye.uci.edu
facebook.com/gavinherberteyeinstitute