



DISCOVERY

THE DISCOVERY EYE FOUNDATION



The Discovery Eye Foundation supports research, education and advocacy related to sight-threatening eye diseases and their treatments, improving the quality of life for patients and their families.

First Los Angeles Vision Symposium

Nearly 300 people attended DEF's first and very successful Los Angeles Vision Symposium in October. After a general session led by DEF-supported researchers Dr. Cristina Kenney and Dr. Henry Klassen, attendees chose one of three tracks — AMD, glaucoma or KC — led by researchers and clinicians from UC Irvine, UCLA, USC, UC San Diego and private practice. Lead sponsors included Abbott Medical Optics, Allergan Inc. and Junior Blind of America.

Thanksgiving 2009

Mapping in 3-D

Optical-imaging technologies show hope for preventing disease

Optical imaging devices using novel laser-scanning technologies are allowing scientists to study cell processes in the eye with more depth and meaning than ever before. Using High-Resolution Laser Macroscopy, scientists at UC Irvine have been able to map the unique structure of the human cornea. The “macroscope” lets them study thousands of enlarged 3-D images (a half-inch human cornea can be magnified to 20 feet) to determine how the normal cornea keeps its shape.



HRMac image showing the structural complexity of the cornea

According to Dr. James Jester (meet him inside): “[With these 3-D images], we can look at the entire tissue and see

how collagen is organized throughout the cornea. We have validated that there is a unique structure to the rigid normal cornea. We found that the soft corneas of keratoconus (KC) patients have lost this structure.”

The images allow researchers to study how the cornea's structure controls its shape and how it is altered in those with astigmatism and KC. The hope, Jester says, is that once they understand the mechanisms underlying these disorders, they will be able to treat and prevent them. He believes if a KC-prone cornea can be strengthened earlier using corneal cross-linking, it may be kept from ever forming cones.

Jester is working with similar technologies to study post-refractive surgery wound healing and scarring in the eye, in an effort to understand and eventually control cell biology and response (*for more on this, see the longer article at the Web address below*).

By employing the latest advances to map and study the human cornea, DEF-funded researchers are making great strides in understanding — and, ultimately, treating and preventing — eye disease.

Visit www.discoveryeye.org/thanksgiving09.html for a longer version of this article.

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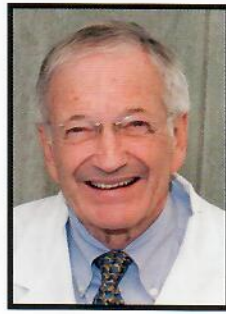
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“What a perfect season to express my thanks to the entire DEF community.”

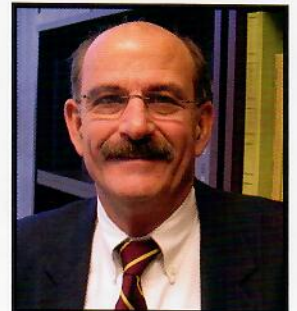
From the Medical Director

This is a particularly bountiful issue of our newsletter, filled with stories and information about and for those dealing with vision-related illnesses. From Ashlee Cornell, who tells us that the information provided by NKCF changed the lives of her entire family, to the hundreds of thousands of people reached by MDP during AMD Week and at the Vision Pavilion at the annual AARP Expo, to the success of our first Los Angeles Vision Symposium, these pages continually remind me of the importance of our work. I hope you feel the same way.

What a wonderful time to reflect on the advances made during the past year. And what a perfect season to express my thanks to the entire DEF community — doctors and patients, staff and volunteers, and, of course, the generous foundations, corporations and individual donors — who make it all possible.

FOCUS: DEF Researcher

Dr. James Jester is a professor in the Department of Ophthalmology and Gavin Herbert Eye Institute at UC Irvine.



Degrees and Academic Credentials: BS in biology and PhD in experimental pathology, University of Southern California; post-doctoral training in experimental ocular pathology, Doheny Eye Institute in Los Angeles and National Eye Institute, National Institutes of Health in Bethesda, Md.

Areas of Expertise and Research: cell biology of corneal wound healing and scarring; multiphoton laser confocal microscopy.

Why DEF is Important to Your Work: “DEF provides financial support for maintenance of our instruments and infrastructure, on which we are heavily dependent, as well as general financial support for our research group. DEF was also responsible for establishing the Jack H. Skirball Endowed Research Chair at UC Irvine, of which I am very honored to be the first recipient.”

Research Goal(s): “To work in translational research taking cutting-edge developments in science and applying them to real clinical problems, where they can have substantial benefits and direct applications to patients.”

NKCF Web Site is Family Affair in Oklahoma

Ashlee Cornell thought she was just getting old. She was all of 26. The Idaho native's vision was deteriorating, and no glasses helped. When her sight and her headaches became increasingly worse, she visited a family doctor who tested her and sent her to a specialist, where she was diagnosed with keratoconus. A year of trying to find the right rigid gas-permeable contact lens was filled with sight improvement but agonizing pain, as her contact lenses pressed and rubbed against the cone.

A trip to the Moran Eye Center in Salt Lake City was eye-opening, to say the least. While her corneas "were not bad enough for a transplant," a lens-fitting specialist took a new approach, fitting lenses that skimmed her cone instead of pressing it. That changed everything: She could now see with less pain and added glasses to cut down on persistent ghost images.

Two years later, Cornell was finishing nursing school and dealing with decreases in vision clarity and a return of the terrible headaches. When she went back to the lens specialist, corneal mapping showed her vision had deteriorated, and the tight lenses she had previously worn had caused scarring of her corneas. They were now ready for transplants, the first of which she underwent this past September ("It could not have gone better," she says happily); she will



**"The photos on
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undergo a transplant on her right cornea in December.

Cornell, who is now a pediatric nurse at the Oklahoma University Children's Hospital, says the hardest part of her whole KC ordeal was not having information about her disease. Finding the NKCF Web site through a search engine several years ago made a huge difference.

"It's the most complete, thorough, lay-term site — and the big-print option means I can actually read it!" she says.

Cornell wasted no time sharing the site with her friends and family; she even posted the URL on her Facebook page. "The more information I found, the less fearful I was — and my family and friends were," she says. "It's hard to de-

scribe to people what you see. I used to try to draw words, then try to draw ghosting around them to show my family what I saw," she says. "The photos on the NKCF site made such a difference. They let my family see what I see; it helps them understand."

Cornell's two sons, ages 7 and 10, "have had to cope with my illness as much as I have," she says, crediting NKCF with helping them to better deal with her KC. Indeed, the boys are just as excited as she is about her corneal transplants, repeatedly telling her: "You'll be able to throw a football with us again, mom! You can go out in the wind!"



Macular Degeneration Partnership Reaches Out for AMD Week and AARP Expo

AMD Week Shares New Tricks

AMD Week may have taken place in September, but it contained a trick worthy of a certain late October holiday.

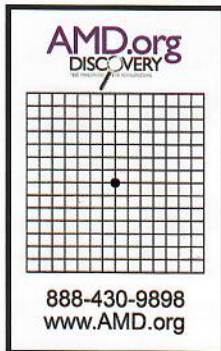
Each year, MDP collaborates with AMD Alliance International to highlight "AMD Week," held this year Sept. 21–27. MDP and the other 60 nonprofit members of the Alliance participate in activities to raise awareness. Spreading the message of "early detection, early treatment," MDP Director Judi Delgado sent an e-mail blast to more than 13,000 people.

The blast was part of a larger e-mail campaign that reached half a million people worldwide to raise awareness of AMD and remind people to get their eyes checked. It contained a video version of an Amsler grid recipients could use to test their sight. Amsler grids (such as the one pictured) are used to detect early signs of AMD and are available free of charge through MDP.

Unbeknownst to recipients, the test contained a trick, automatically producing a vision anomaly for all viewers, giving them a hint of what it would be like to see with macular degeneration. The trick delivered quite an emotional impact before the deception was revealed.

"We hesitated to use such 'scare tactics' in the past," Delgado says.

"But we decided that if it made people pay attention and encouraged them to get their eyes checked, it was worth it. And the response has been overwhelmingly positive."



The Alliance has even bigger hopes for future AMD weeks: "We would like to see huge Amsler grids on buildings in major cities around the world," Delgado says. "Everyone would see the message of 'early detection, early treatment' at the same time. It will be a big undertaking, but it could make such a big difference in saving people's sight."

Everybody Loves Vision

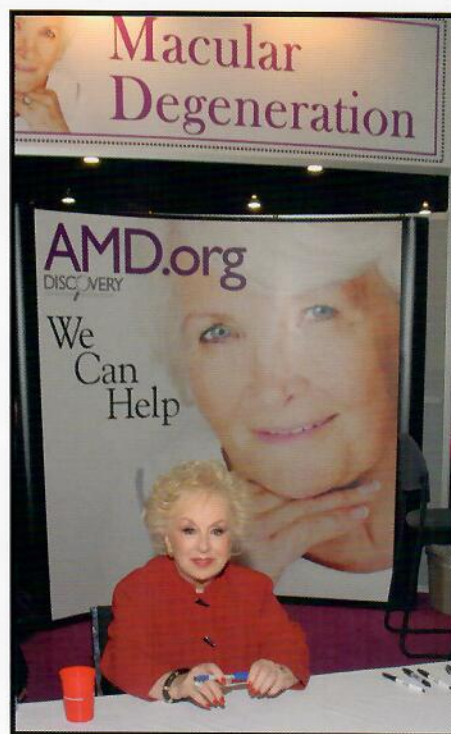
AMD Week helped MDP gear up for its Vision Pavilion at the annual AARP Life@50+ Event and Expo, held this year in Las Vegas, Oct. 22–24. Every year, MDP organizes the Vision Pavilion, welcoming tens of thousands of seniors.

Opening the conference was a "lifestyle session" on AMD called *Life is Fabulous — Make Sure You See It!* featuring *Everybody Loves Raymond's* Doris Roberts. Roberts, who spoke on behalf of MDP thanks to a grant from Genentech, shared stories from her career and discussed taking charge of your life as you age. This fit perfectly

with the Vision Pavilion message, which focused on daily steps you can take to prevent or slow macular degeneration.

Roberts also signed autographs at the MDP booth, which featured a self-test for AMD, vision-simulation cards, a raffle and a "Spin the Wheel" game. Prizes and giveaways included protective sunglasses donated by FantasEyes, Cocoons from Live EyeWear, low-vision devices from Enhanced Vision, omega-3 fish-oil capsules from MedOp, chocolate eyeballs (extremely popular!) and other vision-related gifts.

For ways to control your risk factors for macular degeneration, visit www.amd.org or call 888-430-9898.



Genentech's Generosity Raises Awareness

Our programs are funded by a combination of foundation and corporate grants and individual donors. Among our most stalwart supporters is South San Francisco-based biotech company Genentech, Inc., a wholly owned member of the Roche Group.

"We understand that, in many of the disease areas where we focus, a medical treatment is only a part of the solution, so we partner with patient-advocacy organizations to provide comprehensive and more holistic support to patients," says Nikki Levy, Genentech's associate director of public affairs.

Genentech provides funding to raise awareness of age-related macular degeneration and to promote early detection and early treatment, including the distribution

of more than 40,000 free Amsler grids for early diagnosis of AMD. Most recently, Genentech sponsored the Vision Pavilion at AARP's annual Life@50+ Event, which was organized by the Macular Degeneration Partnership (more on this inside).

"DEF and MDP are critical partners in ensuring people have the education, access, encouragement, resources and support they need."

"DEF and MDP are critical partners for us in ensuring people with ophthalmic diseases have the education, access, encouragement, resources and support they need to live well and to thrive," Levy says.

"We — and, more importantly, the people we serve — are very fortunate to have Genentech in our corner," says Susan DeRemer, DEF's vice president of development. "It is thanks to them that we are able to reach so many people with our sight-saving information."

Eat With Your Eyes

Chef provides sight-healthy recipes at www.discoveryeye.org

Choosing the "right" foods can be of great benefit to your sight. To help members of the DEF community more easily make those good choices, a new column debuted on the DEF website called **"Eye Cook."**

At the beginning of each month, a new eye-healthy recipe will be posted by chef Michelle Moore. A culinary-school graduate and lifelong foodie, Moore, whose motto is "Eat well, feel good!" has spent the past 10 years in culinary education. **Eye Cook** is found at

www.discoveryeye.org/news-and-events/eye-cook.

"Not only is eating well important for good eye health, it is one of the simplest ways for people to help maintain their vision," says Susan DeRemer, vice president of development for DEF.

The most eye-healthy foods include brightly colored vegetables and fruits. The top of the list for fruits are blueberries, raspberries, pomegranates, oranges, pumpkin and kiwi. Good vegetable picks include spinach, kale, collard greens, peppers of all colors, broccoli, garlic and onions.



Fish, such as salmon and sardines, contribute omega-3s. Fish oil is a healthy fat, along with oils such as avocado and olive. Tree nuts, such as walnuts, almonds and pistachios, also provide benefits.

Eye Cook will help you use these sight-healthy ingredients in new and delicious ways.





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Visit our Web site: www.discoveryeye.org



Simplify holiday gift giving, and help the millions diagnosed with eye disease.

Make a donation in honor of family, friends and business associates this holiday season with a contribution to The Discovery Eye Foundation.

To send tribute cards or order gift enclosures, contact Susan DeRemer at (310) 623-4466 or sderemer@discoveryeye.org.

DO YOU WANT TO RECEIVE THE DEF NEWSLETTER? ACTION NEEDED

Currently, the DEF newsletter is mailed quarterly free of charge. Due to rising production and mailing costs, and to be environmentally responsible, **in 2010 there will be two hard-copy issues and two online-only issues of the newsletter.** While all newsletters are viewable as PDFs at www.discoveryeye.org, the summer and winter issues will be **only online.**

To ensure hard-copy newsletters reach only those who want them, we are updating our mailing list. If you made a donation to DEF in the past year, you will automatically receive the hard-copy versions. **If you have not made a gift and want to receive hard copies of the newsletter, you must do one of the following by June 1, 2010:**

- **Make a gift to DEF.** Use the enclosed envelope, or visit www.discoveryeye.org/you-can-help/donate.html.
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