Discovery Eye Foundation exists to facilitate the development of cures and improve patient care through corneal and retinal research and educational programs for eye disease.

The DEF–UCI Connection

While most researchers supported by DEF are domiciled at the University of California, Irvine (UCI), DEF is not part of the university and receives no money from it. DEF provides initial funding for new research projects at UCI and other selected universities, giving researchers an opportunity to apply for larger long-term funding from other sources. In some instances, DEF sponsors worthy research projects outside a university setting.

DISCOVERY
THE DISCOVERY EYE FOUNDATION

Winter 2009

Eradicating Ocular Herpes

DEF-funded prototype vaccine shows promise in fighting eye and other diseases

A priority of the Discovery Eye Foundation (DEF) is the research of ocular herpes (OH) and infectious blindness, which affects nearly half a million people in the United States alone. DEF-funded research works toward understanding the molecular mechanisms of OH and developing new medical approaches and therapies to eradicate it. One of the most promising advancements has been made in developing a new vaccine that would prevent the spread of the Herpes Simplex Virus.

Current drug therapies used to combat OH treat the disease, but not the virus itself. Dr. Anthony Nesburn, medical director of DEF and vice chair for research in the Ophthalmology Department of UC Irvine, and Dr. Lbachir BenMohamed (meet him inside this newsletter) are developing a novel lipopeptide vaccine that would provide an effective and less costly means of preventing and treating OH. The vaccine works differently from most vaccines and is applied as eye drops rather than injection; it has shown excellent results in preclinical trials. In addition to dealing with OH, the research shows promise in fighting genital herpes and breast cancer.

The vaccine has shown excellent results in preclinical trials.

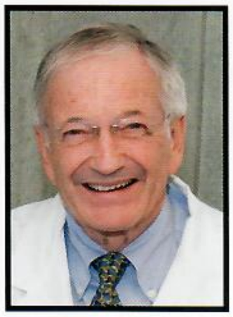
The research group is the first in the world to use a lipopeptide vaccine against OH — thanks, in large part, to DEF. "Developing a vaccine is time-consuming and money-consuming, compared to drug development," BenMohamed says. "That's why there are not a lot of companies interested in developing a vaccine — they want the money fast, so they are more interested in drug therapies. Because of DEF, we were able to spend more than six years working on this vaccine development. We think we are going to do Phase 1 FDA clinical trials in the next two to three years."

Please visit **www.discoveryeye.org/winter09.html** for a longer version of this article.

DISCOVERY
THE DISCOVERY EYE FOUNDATION

6222 Wilshire Blvd., Suite 260
Los Angeles, CA 90048
(310) 623-4466
fax (310) 623-1837
contactus@discoveryeye.org
www.discoveryeye.org

From the Medical Director



Anthony B. Nesburn,
MD, FACS
Medical Director

> *"Though our news may be in a smaller package, we hope you will enjoy our new columns."*

We at DEF are very conscious of ensuring that every possible resource goes to fund our research and our outreach and education programs. So after careful consideration, we decided to decrease the dimensions of our newsletter.

While shorter stories appear here, longer stories, as well as more information and resources, are found on our redesigned and expanded websites. It is a more responsible use of our financial — and environmental — resources. Also, please let us know if you prefer to receive an e-mail link to a PDF version of the newsletter, rather than a hard copy in the mail.

Though our news may be in a smaller package, we hope you will enjoy our new columns, such as "Focus: DEF Researcher," in which you will meet DEF-funded scientists and learn a bit about their research, and "DEF Web Tip," which will help our constituents take advantage of ever-growing online resources.

We hope you like our new changes. Please let us know what you think.

FOCUS: DEF Researcher

Dr. Lbachir BenMohamed is an associate professor of immunology, and the founder and head of the Laboratory of Cellular and Molecular Immunology in the Department of Ophthalmology at UC Irvine.

Degrees and Academic Credentials: BSc in biology, Bab-Sahara College, Morocco; MS in molecular biology, Paris VII University, France; PhD in immunology, Pasteur Institute & Paris VII University, France

Areas of Expertise and Research: immunology, with a strong expertise in vaccine development against infectious diseases and cancer

Why DEF is Important to Work: "DEF is one of the few funders interested in developing a vaccine against pathogens that infect the eye. Biotech companies are mostly interested in profit-oriented drug-development research."

Research Goal(s): "To develop a powerful, safe, cost-effective and self-applicable immunotherapeutic vaccine against ocular herpes for global use."

NKCF
DISCOVERY
THE DISCOVERY EYE FOUNDATION

National Keratoconus Foundation Update

CXL Trials in United States

Clinical trials have begun in the United States to study the safety and effectiveness of corneal collagen crosslinking (CXL) in patients with progressive keratoconus and corneal ectasia that can result from corneal refractive surgery. Corneal collagen crosslinking is a procedure that stiffens the cornea by exposing it to ultraviolet (UVA) light after it is saturated with riboflavin.

The CXL procedure was developed at the University of Dresden in Germany and has been under investigation there since 1998. The procedure consists of instilling a series of riboflavin drops on the corneal surface during a period of 30 minutes. Once the riboflavin has saturated the layers of the cornea, it is exposed to a carefully determined dose of UVA light. As the UVA light interacts with the riboflavin, chemical bonds (crosslinks) form between the corneal collagen molecules. This increases the tensile strength of the cornea.

As a result, the crosslinked corneal tissue is stronger and can more uniformly retain its natural curved shape, rather than bow forward into the cone-like shape that is the hallmark of keratoconus and ectasia. CXL is the first procedure that offers those with keratoconus the hope of stopping the progression of this disease.

For more information about CXL and clinical trials, visit www.nkcf.org (click the link on the home page).

Heal Thyself: Keratoconus Turns Student Toward Medicine

Justin Belsky never played doctor as a child. He was never much interested in science, either. Of course, that was before he was diagnosed with keratoconus.

"I began undergraduate classes [at Michigan State University] with two hard contact lenses and no clue as to my future profession," he says. "My first semester was extremely difficult, as I was adjusting to both college and my new lenses. ... I performed poorly and thought my keratoconus would stop me from succeeding in life. However, my struggles fueled my interest in medicine and inevitably led to my current status as a medical student."

Now a second-year med student at the Wayne State University School of Medicine in Detroit, Belsky is a coordinator of Student Sight Savers, a medical student–run organization that provides free vision screenings to underserved populations of Detroit. When he finishes medical school, he plans to become a research-oriented ophthalmologist and, one day, to be part of the NKCF Physician Referral Program.

For information about the NKCF Physician Referral Program, visit www.nkcf.org.

"I thought my keratoconus would stop me from succeeding in life."

AMD.org
DISCOVERY
THE DISCOVERY EYE FOUNDATION

Macular Degeneration Partnership Plays Supporting Role

Pauline Windman jokes that she became a hypochondriac at the tender age of 9, when her father brought home some used medical books, which she read "voraciously."

Some 70 years later, medical issues became all too real when she began to lose her sight and was diagnosed with the wet form of macular degeneration. Following laser treatments and intraocular lens implants in both eyes, her sight is better, but not perfect. "I do a lot with fingers and touch — my makeup, putting the key into the door, etc.," she says. "Little by little, you learn how to manage things."

One of the things that helps her manage is a monthly support group sponsored by the Macular Degeneration Partnership (MDP); she has been a member for 15 years.

"I just don't know what I would do without it," she says. "MDP Director Judi Delgado goes to medical conferences and brings the information back to us, explaining in lay language what we're facing, what kinds of assistive technologies we can use, what to expect, what new drugs are out there. We need this to help us remain as independent and hopeful as possible. It's really opened my world."

> "Little by little, you learn how to manage things."

Attending support groups, maintaining social ties and learning new ways to enjoy activities can all make a difference in coping with AMD. Research confirms that when people with macular degeneration take charge ("self-management"), they do better, both visually and emotionally, Delgado says.

In addition to its monthly support group, MDP's toll-free "warm line" connects callers to the professional staff, who can answer questions and direct them to other resources. MDP's website, www.amd.org, has a section called "Living with AMD." For patients and family members, Delgado says, MDP is more than just support — it can be a lifeline.

For information about MDP's LA support group, call (310) 623-4466. Visit www.amd.org for information on macular degeneration, or call the warm line at (888) 430-9898.

Los Angeles MDP Support Group

2009 Schedule
Wednesdays
noon–1:30 pm

Jan. 28
Feb. 25
March 25
April 22
May 27
June 24
Sept. 23
Oct. 28

Beverly Hills Library
Second Floor Conference Room
444 Rexford Dr.
Beverly Hills, CA 90210

This could be your last DEF newsletter!

We are working to ensure the DEF newsletter is cost-effective and provides the most benefit to readers. So in addition to decreasing the dimensions of the newsletter, we are asking readers to tell us their preferred mode of delivery.

Do you want to continue receiving the printed newsletter by mail, or would you prefer to receive an e-mail link to an online PDF version? Please let us know by e-mail, phone, fax or mail (our contact information is in the far upper left corner of this newsletter).

Finding Community in DEF

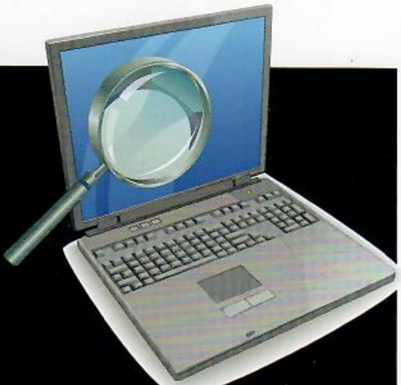
Jack Schoellerman's vision problems began in the 1960s. It was several years before he was diagnosed with keratoconus and even longer before he found out he wasn't alone.

His wife, Katy, happened to see an ad in the *LA Times* for a seminar at a new foundation. The DEF seminar was Schoellerman's first step into the organization. DEF founder Morris Pynoos later recruited him to the board of directors; he eventually replaced Pynoos as chair and president of the board.

Schoellerman's personal experience is not the only reason for his long-term involvement. "DEF does pioneering, cutting-edge work," he says. "We support projects that will move rapidly from the research bench to the patient. Our community outreach and education programs are outstanding. It's very entrepreneurial. People can really benefit from what we do."

The Schoellermans are also major financial supporters of DEF and its outreach programs. "I know what it was like to feel alone — to be without reliable information or access to fellow patients," Schoellerman says. Thanks to generous volunteers and donors such as the Schoellermans, no one else does.

"DEF does pioneering, cutting-edge work. We support projects that will move rapidly from the research bench to the patient."



DEF Web Tip

Any Web page can be made larger and, therefore, easier to read. On a Mac, hold down the **apple** key and click the + (plus) key to blow up the page; on a PC, hold the **control** key and click the + key. Conversely, the - (minus) key will make the page smaller. And be sure you update your browser for the best functionality.

Design and Conquer

DEF websites stress functionality and content

The DEF websites are in revamp mode. Just one look at **www.discoveryeye.org** and **www.amd.org** illustrates their increased usability and functionality.

Low-vision–friendly design, easy navigation and a wealth of information are now hallmarks of the sites. One click in the upper right corner lets visitors see the site in high contrast and/or larger type; links become bigger and more prominent as a cursor rolls over them.

Discoveryeye.org has abundant research and more general information, according to DEF webmaster Barry Silver. Profiles of DEF scientists and their research projects, as well as ways to give and myriad DEF resources are easily accessed from the main page.

MDP's site, www.amd.org, is geared toward people dealing with age-related macular degeneration (AMD), Silver says. Even larger type and higher contrast are employed, and content is continually updated with information on research, resources and tips for living with AMD.

NKCF's site (www.nkcf.org) is currently being revamped and will relaunch later this year.

DISCOVERY
THE DISCOVERY EYE FOUNDATION

6222 Wilshire Blvd., Suite 260
Los Angeles, CA 90048

Visit our website: www.discoveryeye.org

2009 GUIDED TOURS
of the
Morris S. Pynoos Eye Research Laboratories at UC Irvine

UCI Medical Center
101 City Dr., Building 55, Second Floor
Orange, CA 92868

Leading scientists will discuss cutting-edge eye research in the areas of stem cells for retinal and optic nerve regeneration, macular degeneration, diabetic retinopathy, glaucoma, keratoconus, corneal scarring and ocular herpes.

March 6, May 15 & Sept. 26
Friday, noon–1:30 pm • FREE

Parking will be validated; lunch will be served.

RSVP: (310) 623-4466

Keep Your Eye on the Ball

Monday, July 20, 2009
Newport Beach Country Club

The 7th Annual DEF Golf Tournament

Join us for a fun day on the course, dinner and auction to benefit groundbreaking eye research and our patient outreach and education programs for age-related macular degeneration and keratoconus.

For information and to learn about sponsorship opportunities, contact Deanna Dubé at (310) 623-4466 or ddube@discoveryeye.org.

contributors: Judi Delgado, Susan DeRemer, Lauren Hauptman, Melissa Juarez, Dr. Anthony Nesburn, Barry Silver, Catherine Warren