

# 2011

## ANNUAL REPORT



### FLORIDA LIONS EYE BANK



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## **ON THE COVER:**

*Luz America Valdes loves reading to her five-year-old grandchild, Chloé – a joy that would not be possible without a cornea supplied by the Florida Lions Eye Bank. See Page 4.*

# 2010-2011 Status Report

	<i>July 1, 2010– June 30, 2011</i>	<b>GRAND TOTAL</b>
<b>Eye Donors</b>	<b>969</b>	<b>79,518</b>
<i>Surgical</i>	644	
<i>Research</i>	325	
Eyes/Corneas Received	1,935	81,717
Eyes / Corneas Furnished for Transplant	687	10,963
<i>FLEB Corneas Used in USA</i>	658	
<i>FLEB Corneas Sent Outside USA</i>	29	
Corneas received from other eye banks & sent to international patients:	523	
Sclera tissue provided (whole or parts)	311	
Glycerin preserved corneas provided	682	
Eyes furnished for research or teaching	669	30,610
Pathology specimen studies	4,157	82,108
<i>Bascom Palmer Eye Institute patients</i>	3,347	
<i>Patients operated outside BPEI</i>	684	
<i>Florida Medical Examiner cases</i>	126	
<b>Total served during the year</b>	<b>7,029</b>	

# Medical Director Report 2010-11

Sander R. Dubovy, MD, Medical Director

As 2011 comes to an end, we look back and see the Florida Lions Eye Bank has continued to expand our array of services as we help those receive the gift of sight.

We have continued to increase our numbers of both recovered and transplanted tissue. This has been at both the local, national and international levels. We have provided an increased number of tissues for DSAEK (Descemet's stripping automated endothelial keratoplasty) and have worked with our providing physicians to cut thinner tissues so as to provide tissue that will allow for the best result possible for our patients. We continue to work with our cornea physicians in the community as well as at Bascom Palmer to modify and update our procedures and processes to help lead the way in corneal transplantation. We continue to provide increasing numbers of corneal tissue in glycerin for patients undergoing glaucoma filtration procedures.

Our association with the Eye Bank Association of America is continuing to grow as we recently obtained a three year accreditation from the organization (the longest allowed). The employees of the FLEB deserve a great deal of admiration for accomplishing this goal. Our relationship with this group will be quite fruitful going forward as we have learned a great deal work-



ing with other sight saving institutions throughout the country and world.

The ocular pathology laboratory has continued to grow in size and scope. We have continued to train fellows from the United States, as well as Saudi Arabia and Japan. We have hired a director of pathology services who will be instrumental in helping guide our research and administrative mission.

Over the ensuing years I see the research role of the laboratory being even more important as unique information on the pathophysiology of ophthalmic disease is disseminated from the material we evaluate. Specifically, I feel that in the area of retinal vascular and hereditary retinal disease, we will be reporting important information in the next year.

As we are preparing for our 50th Anniversary in the coming year, I would like to thank the eye bank staff, board of directors, Lions, and all those whose hard work and efforts have allowed us to increase our array of sight saving services to those who so desperately need our services.

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# Financial Report

<b>REVENUES AND GAINS</b>	<b>2009-2010</b>	<b>2010-2011</b>
Program Service Fees	\$1,853,311	\$2,005,316
Contributions		
General Public	24,717	38,703
Bequests	103,787	
Foundation Grants	9,500	6,000
Lions Clubs	52,482	40,265
Donated Facilities & Services	100,344	100,344
Interest & Dividends	314,630	302,114
Net unrealized and realized gains of long term investments	930,995	2,026,868
<b>Total Revenues and Gains</b>	<b>\$3,442,248</b>	<b>\$4,519,610</b>
<b>EXPENSES AND LOSSES</b>		
Program Services		
Medical Services	\$2,016,911	\$2,317,471
Research Grants	146,585	127,997
Supporting Services		
Management & General Development	200,210	167,000
	28,223	14,494
Total Expenses	2,391,929	2,626,962
<b>Total Expenses &amp; Losses</b>	<b>\$2,391,929</b>	<b>\$2,626,962</b>
<b>CHANGE IN UNRESTRICTED NET ASSETS</b>	<b>\$ 997,837</b>	<b>\$1,892,648</b>



## Cornea Transplant Gives the Gift of Life

*Giving the Gift of Sight* is both the mission and slogan of the Florida Lions Eye Bank, but for 86-year-old cornea recipient Luz America, the transplant *Gave the Gift of Life*.

"I honestly think that without her sight, my mother could not go on living," said her daughter, Betty Valdes. "Her whole life was centered on activities like reading, sewing and cooking, things she could no longer do without her vision."

Luz's difficulty with her eyes goes back to her birth in Cuba and her childhood in Spain. She always had problems seeing with her right eye, and as time went on, she lost all vision in that eye and depended completely on her left eye. She came to Florida in 1958 and then

BELOW:

Betty Valdes, her mother Luz America Valdes and Chloé.



settled in New York, where she lived for 13 years and raised a son and daughter. The family eventually moved back to South Florida and Luz worked as an aid in a nursing home.

After Luz retired, she began to have cloudy vision in her good eye. In 2004, her ophthalmologist told her a cataract procedure was necessary. The surgery did not go well.

"When they took off the bandages, she could not see," Betty said. "She was basically blind in the only eye she had." Betty took a leave of absence from her job as a nurse educator at Miami's Jackson Memorial Hospital to take care for her mother, who was helpless without her vision.

"This was the worst time," she said. "My mom fell into a depression. She could not do anything on her own and really missed reading the newspaper, books and her magazines."

The ophthalmologist was not sure why the cataract surgery failed and the cause of Luz's loss of sight. For six months, Luz and Betty desperately sought the advice of other doctors. Through other ophthalmologists, they were eventually referred to Dr. Carol Karp at Bascom Palmer Eye Institute. Dr. Karp, a cataract, corneal and external disease specialist, told Luz she had Fuch's Dystrophy, a painful eye disease in which cells lining the inner surface of the cornea slowly start to die off. Fuch's dystrophy can be inherited and is more common in women than men. After the diagnosis, Luz discovered her sister also has the disease.

Dr. Karp added that a cornea transplant would be Luz's only chance to get her sight back.

Unfortunately, the first transplant attempt was not successful. "I was so nervous ... my blood pressure was too high," Luz said. "I think that was the problem."

Two weeks later, Dr. Karp performed another surgery and within days

*A photo of Luz as a young woman in New York.*



Luz had her precious vision back. "It was wonderful. I walked outside the house and could see a beautiful flower from a distance," Luz said.

Luz could return to her life's interests: reading, sewing, knitting and cooking. Her sight remains good today, almost eight years later.

Since the successful procedure, Betty realized the importance of cornea donation and has become an advocate. "All we know about the donor was that it was a child," Betty said. Not a day goes by that we do not think of the gift that family gave to us. We are so grateful."

Betty spoke about the positive impact that the Florida Lions Eye Bank has on the lives of her family when she spoke before the 50th Anniversary Gala Dinner in 2012.

Within two years of the transplant, there was even more in her life to see: her first grandchild, who is now five.

"Without the cornea provided by the Florida Lions Eye Bank, my mother would never have been able to see my daughter, Chloé," said Betty.

Like all people her age, Luz struggles with challenges that come with advanced age. But with her cornea transplant, her life is as full as she wants it to be. "I love reading to my granddaughter," she said. "I love reading everything!"



*Luz's daughter, Betty Valdes, speaks to 300 about how a cornea transplant saved the life of her mother at the Florida Lions Eye Bank 50th anniversary dinner.*

## *Fuch's Dystrophy May Require A Cornea Transplant*



Fuch's Dystrophy was first described by Austrian Ernst Fuchs (1851–1930). Although doctors can often see early signs of Fuch's dystrophy, the disease rarely affects vision until a patient's fifties and sixties.

It is a degenerative disease of the corneal endothelium with accumulation of focal outgrowths and thickening of Descemet's membrane, leading to corneal edema and loss of vision. As the disease progresses, Descemet's membrane is grossly thickened with accumulation of abnormal wide-spaced collagen. Focal areas or blisters of epithelial edema may be particularly painful.

*Light microscopic appearance of the cornea showing numerous excrescences on the posterior surface of Descemet's membrane and the presence of cysts in the corneal epithelium.*

## RESEARCH

# Ophthalmic Biophysics Center Creates New Instrument to Assist In Osteo-Odonto Keratoprosthesis

Jean-Marie Parel, PhD, Yoh Sawatari, DDS, Victor Perez, MD, William Lee, Deepa Sathiah, DDS, Giancarlo Falcinelli, MD  
Eduardo Alfonso, MD

Departments of Ophthalmology and Maxillofacial Surgery • University of Miami Miller School of Medicine  
Ophthalmic Biophysics Center • Bascom Palmer Eye Institute

### Overview

The 2009 Florida Lions Eye Bank Annual Report reported the dramatic story of a woman whose sight was restored at Bascom Palmer Eye Institute using a rare surgical procedure called the modified osteo-odonto keratoprosthesis or MOOKP. Both the Eye Bank and the Ophthalmic Biophysics Center played a role in the miraculous operation, which was completed in several steps over six months. In the procedure, surgeons remove a part of tooth and bone from the patient who will receive the implant, drill a hole in it, insert a plastic lens into the hole, cement the lens in place and implant the tooth-lens combination into the front portion of the eye. Because of the procedure's complexity, it was the first such operation performed in North America and another in a long line of efforts to create a successful artificial cornea.

### Working for Better Patient Outcomes

Today, the Ophthalmic Biophysics Lab is working to make this ground-breaking surgical procedure safer and with better patient outcomes. One effort is the creation of a new miniature milling instrument that will drill and contour the hole in the tooth and tissue more

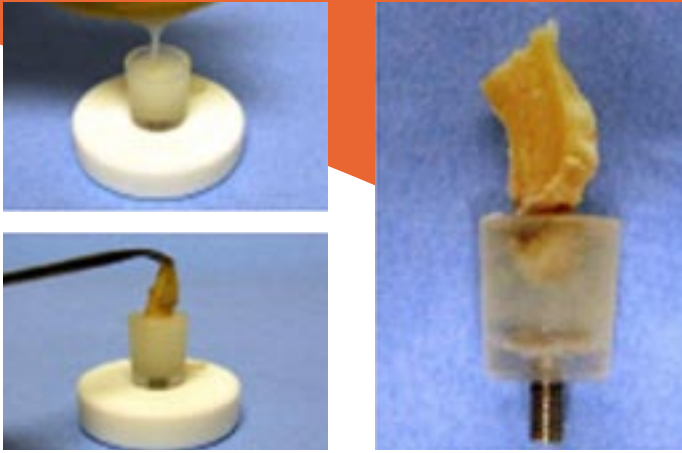


efficiently and with greater precision (pictured above). They are also testing different bonding agents and application procedures to secure the artificial lens into the tooth lamina. The scientific results for both projects were recently published.

### Unique Milling Device Developed

The MOOKP is unique in that it combines a patient's own living tissue with an artificial lens and is placed into the eye. The micro-milling machine was developed by the Ophthalmic Biomedical Center staff to more accurately drill and shape the tissue so it can be a better fit for the lens and for the eye.





Method used to mount the tooth/bone complex to the micro-mill.

Research showed that the friction caused by standard surgical cutting tools raised the temperature to the point that the cells in the living tissue could be damaged. This process could cause a patient to reject the implanted optical prosthesis and become blind. To prevent this from happening, the new device immersed the tissue in a saline solution while the drilling and milling is performed.

So the new device not only had to eliminate the variability that resulted from manual tools, it also had to be faster, create less friction and provide a method to cool the tooth/bone complex during the procedure. Experiments showed that the new micro-milling instrument could create a smoother, more consistent and accurate hole to hold the lens.



Also, the temperature of the tissue stayed at body temperature during machining, well below the 48° C threshold that will cause tissue damage.

### *Doctors Excited About Results*

The micro-mill instrument was recently demonstrated at the Eighth KPro Study Group Meeting and immediately drew enthusiastic interest from doctors



Tools used to contour and drill with the micro-mill

world-wide with the belief that the device will improve patient outcomes.

### *Testing Bonding Cements*

The Ophthalmic Biophysics Center could have the only team investigating the long-term bonding strength of various medical cements used to glue the tooth lamina to the acrylate optical cylinder that restores vision to these patient. The integrity of the bond is critical to the MOOKP. If the artificial cylinder were to detach from the lamina, the patient would loose their sight.

To demonstrate the strength of various adhesives, two-part apparatuses were was constructed to apply force to the models. This year-long research study will be completed by the end of 2012.

*These two apparatuses are used to apply force and simulate pressure on the model tissue samples to test three different bonding agents.*



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