

## Chicago Alliance to Fund Retinal Research

### SIGHT QUEST NEWSLETTER

#### Winter 2017

A publication of SEARCH FOR VISION

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#### Thank You To All

2016 "It Was A Very Good Year", (thanks for the line Frank). The scientific advancements and individual involvements keep on growing. The title of the main article in a recent issue of National Geographic optimistically stated, "Why There's New Hope About Ending Blindness. Thanks to medical research and expanding treatments, it's no longer just a dream".

The scientific articles published in this newsletter and posted on Search for Visions website list many advances that keep on coming from around the world. The ever increasing frequency of new developments and trials taking place to achieve acceptance from national sanctioning agencies are exciting. The wide range of this work; implants in the eye and visual cortex, drug treatments, stem cells, gene editing, etc.; cover many eye diseases.

Yes, SFV contributes to Ophthalmology and Visual Sciences at the University Of Illinois College Of Medicine at Chicago, but you can rest assured that they are not isolated. Please read the two articles below on how Ophthalmology at UIC are making advances.

#### Year End Appeal

Again, this year the board members of Search for Vision are appreciative for the donations received to the Year End Appeal. As in previous years, the proceeds will be used for retinal eye research and treatments at the University Of Illinois College Of Medicine at Chicago Department of Ophthalmology and Visual Sciences.

UIC has been a leading element in optical sciences for a long time. The Lions of Illinois Eye Research building on the UIC campus houses a wide range of ophthalmological activities involving every phase of vision.

It is staffed with researchers, practitioners, investigators, laboratory technicians, etc., all working to correct and enhance eyesight.

Our part is to encourage and finance their efforts.

## **Usher Syndrome Coalition USH Connections Conference**

The Usher Syndrome Coalition's 2017 USH Connections Conference will be held in Chicago on Saturday, July 15th, at the Chicago Marriott Downtown Magnificent Mile, 540 North Michigan Avenue.

At this educational and life expanding annual conference, doctors and scientists in ophthalmology and related fields will present their latest updates on the progress being made in Usher syndrome research.

Nowhere else will you find the opportunity to connect and share with other families from around the world living with the same disease.

The conference will be an all-day event starting at 8:00am finishing at 5:00pm with a social gathering after the seminars.

For more information and reservations contact:

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2 Mill & Main Place, Suite 418  
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## **In Memory**

In memory of Barbara Lynch, wife of the late Dick Lynch and mother of Terrance Lynch and Kelly Aguayo.

The Lynches organized numerous golf outings and other events in Wisconsin and they participated in all the golf outings in the Chicago area for many years. In addition, they were supporters of many other events to raise funds for a cure or treatment for blindness.

## **Sharper view of eye surgery**

### **Sharon Parmet**

November 8, 2016

Marty Cless, son of Gerhard Cless, looks through one of the simulation microscopes as Dr. Mark Rosenblatt, professor and head of ophthalmology and visual sciences in the UIC College of Medicine, looks on. (Photo: Diane Smutny)

Imagine needing to perform a surgery looking through the tunnel of a microscope. You need to manipulate your surgical tools within the space of a pea or less, and there's no tactile feedback. You also need to use both feet to control certain features of your equipment. It's not a task that you'd want to perform on a live patient for the first time, is it?

This need to hone fine skills before treating patients underlies the creation of the Cless Family Ophthalmologic Training and Simulation Center housed in the Eye and Ear Infirmary. The lab lets ophthalmology residents, fellows and surgeons perfect eye surgery techniques in a simulated surgical setting. The Cless Family Lab has been in use since 2015, but was officially dedicated in June when the department hosted a ribbon cutting ceremony.

"Surgeons need to simultaneously use their hands, feet and eyes in a highly coordinated fashion for most surgeries," said Mark Rosenblatt, professor and head of ophthalmology and visual sciences in the College of Medicine. "Being able to practice in a dedicated eye surgery simulation environment means they can easily practice both routine and new surgeries so that the risk for complications is significantly reduced when they operate on patients."

The lab includes nine surgical simulation stations. Each station has two surgical microscopes that look down on an operating field. One is for the fellow or resident practicing – the other allows an instructor or partner to observe the operation.

Trainees and surgeons can operate on a partially disposable plastic eye, a pig or human eye, or a highly advanced computerized plastic eye that senses the surgeons tools inside the eye and projects a realistic simulated video image of a human eye undergoing surgery back through the microscope in real time 3-D.

Most of the stations also come with several pre-programmed modules or a defined curriculum that allow surgeons to practice specific surgeries. On the simulated eye, Rosenblatt chooses a cataract surgery module and gets to work breaking up a virtual cataract and vacuuming up the debris. He uses the same exact machine, hooked up to the surgical station, that he uses in the operating room to pulverize and remove a cataract.

“It’s tremendously hard to mimic eye surgery outside the operating room, but the Cless Family Lab gets very, very close,” said Jose de la Cruz, assistant professor of ophthalmology and visual sciences in the College of Medicine. “The lab is really an advanced teaching tool, and we have built training curricula around the use of the lab. But students can always come to the lab on their own time to practice outside of formal classes.”

All the microscopes can project their field of view onto four large flat-screen monitors around the room so that others in the lab can watch along. The video can also be transmitted outside the lab to other simulation labs, to conferences or to physicians in other countries. Just as the video from the lab can be shared outside UIC, the screens can also receive video feeds from other labs or operating rooms so that surgeons can practice along with surgeons in another state or country. All the video feeds can also be recorded and stored for later viewing.

“All the tools used in the wet lab are exactly the same as those tools the surgeon would use in the operating room,” said de la Cruz. The surgical simulation lab also lets surgeons get the feel for using new surgical instruments. The Cless Family Lab has already hosted a regional course training senior surgeons new forms of less invasive corneal transplantation.

The lab, which has multiple philanthropic funders, is named after the Cless family. Gerhard Cless first came to know UIC in 1995 when he was referred for treatment for a macular hole. Since 2000, The Cless Family Foundation has funded an array of projects and needs for the department including vision research and education programs, the acquisition of advanced microscopy, recruitment of faculty, clinical studies and support for a retina fellowship. Prior gifts also established the Gerhard Cless Endowed Lecture, the Cless Best of the Best Award and the Cless Family Professorship in Ophthalmology.

### **Clinical trial tests cord tissue to treat macular degeneration**

[Sharon Parmet](#)

July 20, 2016

UIC is part of a national phase 2 clinical trial to evaluate the safety and tolerability of using cells derived from umbilical cord tissue to treat age-related macular degeneration, the most common cause of vision loss in people over 55.

The disease causes light-sensitive cells in the center of the retina to degrade, leading to loss of central vision and the ability to read, drive and recognize faces.

The layers of the retina include the RPE. Illustration: Lisa Birmingham

The cell therapy under investigation is for the “dry” form of age-related macular degeneration, which accounts for 90 percent of cases and currently has no treatment. Slower progressing than the wet form, it can ultimately lead to profound vision loss caused by a breakdown or thinning of the layer of retinal pigment epithelial cells in the macula. RPE cells form a layer just underneath the light-sensitive rod and cone cells of the retina and help nourish and support them. In the experimental treatment, cells derived from umbilical cord tissue are injected under the retina, in the hope that they will prevent further loss of rod and cone cells — and perhaps even restore vision.

“If the treatment is successful, that would mean that we might be able to use it in people with the beginning stages of dry age-related macular degeneration, when vision loss is not so severe, in order to slow the loss of RPE and photoreceptor cells,” said Dr. Yannek Leiderman, assistant professor of ophthalmology in the UIC College of Medicine and lead surgeon in the clinical trial at UIC.

Leiderman helped develop a specialized catheter to inject the RPE cells under the retina. “Eye surgeons usually work within the vitreous cavity, or the center of the eye,” Leiderman said. “To get behind the retina, we needed a totally new kind of catheter that could reach the area behind the very delicate retina without causing any collateral damage.” As part of the trial, in June, Leiderman injected the RPE-like cells into just one eye on each of two patients at UIC who have advanced dry age-related macular degeneration and significant vision loss. They will be followed up for several years.

A larger, phase 3 trial, in which participants will receive either cord cells or a placebo, will be needed to determine efficacy. “It will still be quite a while before we can determine if the procedure has had an impact on vision,” Leiderman said.

Dr. Paul Chan, professor of ophthalmology in the UIC College of Medicine, is a principal investigator on the trial.

The clinical trial is funded by Janssen Research & Development, LLC.

#### Search for Vision Disclaimer

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#### **NOTICE**

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