In April 2008, the School of Medicine’s Department of Ophthalmology received the largest gift in its history—a $1 million commitment from 1939 UNC alumnus David Kittner in partnership with the Samuel and Rebecca Kardon Foundation—to establish an endowed innovation fund for the department’s future.

On June 12, 2008, in recognition of Kittner’s and the foundation’s generosity, the department’s facility at UNC’s Ambulatory Care Center was dedicated and named the Kittner Eye Center.

Kittner’s nephew, Sam Kittner, a 1985 Carolina alumnus, gave a special presentation honoring his uncle and remarks were offered by Chancellor James Moeser; Dr. Etta Pisano, Vice Dean of Academic Affairs for the UNC School of Medicine; and Dr. Travis Meredith, Department Chair and the Sterling A. Barrett Distinguished Professor of Ophthalmology.

“Our future is much brighter now,” Meredith said when the gift was first announced. “The need for ophthalmology services is increasing, and this endowment will help us provide even more advanced and technologically sophisticated services for our patients.”

For Kittner, the gift represents his strong love for Carolina and his deep appreciation for good vision, particularly after witnessing how various members of his family and others benefited from advanced eye care.

“I thought that the gift would be a great way to help people well into the future,” he said. “I look forward to seeing the advancements the center will continue to make.”

Annual expendable funds earned from the endowment will be used for patient care projects such as the purchase of state-of-the-art equipment, technology, clinical research, education and other focused projects. The specific use of funds will be approved annually by the department’s chair.

The goal of the ophthalmology department’s research and education activities is to increase knowledge of patient care options that will ultimately lead to improved vision or cures for blinding eye diseases, while at the same time training the next generation of ophthalmologists.

Major multicenter national clinical trials are currently underway at UNC on diseases such as macular degeneration, diabetic retinopathy and retinopathy of prematurity. The department is also pursuing internationally recognized translational glaucoma research with the goal of improving patient care after testing new discoveries in clinical trials.

Patient visit numbers per year for eye care at UNC have more than doubled from 1993 to 2007. The needs for ophthalmologic care are expected to continue increasing as more baby boomers retire and North Carolina’s population continues to grow. Over the next three to four years, it is estimated that annual patient visits will increase by more than 25 percent.

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— David Kittner
Occasionally in my clinic, a patient will bring me an article and ask, “Do you know about this?” It is always encouraging to see our patients asking about the latest knowledge on their eye diseases. These interchanges remind me that we need to share how heavily involved we are in teaching and research. Staying at the forefront of information exchange is an important part of our work.

How do we do that?

• Like many of our colleagues, we learn a great deal from reading our medical and scientific journals and perusing the internet, but there are many more opportunities for staying in the forefront of medicine at an academic health center. Foremost among these is research. At any given time we are participating in 8 to 10 national clinical trials which are testing the newest scientific therapies available for our patients. In our laboratories, cutting edge research is being done to produce new scientific information that will allow us to design the new therapies of the future.

• Our physicians travel broadly to exchange information with their colleagues as teachers. In the last several months, Drs. Amy and Craig Fowler were Visiting Professors at George Washington University in Washington, DC. Drs. Cohen and Dutton lectured at the Michigan Medical Society Annual Meeting, and Dr. Dutton taught a special surgical course in San Antonio educating specialists in ocularplastic surgery in surgical techniques.

• We bring outstanding professors from around the country to UNC to teach us and our community colleagues. With the support of several generous donations, we have initiated a Visiting Professor series which will bring six leading professors who are experts in their chosen subspecialties of ophthalmology to the Kittner Eye Center. During their time with us, each Visiting Professor offers insights during consultations and teaches the latest techniques. Dr. Mark Terry, a leading developer of a new method of corneal transplantation, was our first Visiting Professor in this academic year in August. Dr. Terry met first with our residents informally and then gave an illuminating presentation on his ground breaking work. In the spring, we host a Continuing Medical Education event in which we bring four guest professors to Chapel Hill to share their latest research and clinical insights.

• Our faculty, residents, and staff also travel to learn. Our third year residents attended a course at Harvard University on cataract surgery in June, where they were able to learn the latest in cataract surgical techniques from surgeons around the world. The faculty included our own Drs. Kenneth Cohen and Craig Fowler. Next year, we will send a contingent of residents and faculty to a course at University of California Los Angeles (UCLA) sponsored by the Association of University Professors in Ophthalmology designed to teach the latest in clinical research techniques.

• We are involved in international ophthalmology as well. Dr Cohen and our residents have traveled to Vietnam and to China on teaching missions. Dr. Metin Unal is currently spending four months with us taking time from his own position in his home country of Turkey to learn the latest in retinal surgical techniques.

We welcome conversations and questions with our patients about what is happening in the world of eye care and research. We strive to be in the forefront of ophthalmology so that when you visit us at the Kittner Eye Center, you are assured that you have a global window on the ophthalmic world. Being an integral part of the global ophthalmic community is an important element of providing World Class Care with a Hometown Touch!

—Travis A. Meredith, MD
Your vision is a priceless gift. Those of us whose lives have been touched by low vision or blindness know so well its value. The Kittner Eye Center faculty and staff at UNC are committed to the quest for breakthrough science that will prevent and help cure eye diseases. Won’t you join us as we seek to offer help and hope?

Planned giving, during your lifetime or beyond, can enable you to benefit the work at Kittner Eye Center while also providing financial benefits to you and your loved ones. You may wish to provide a reliable source of income and substantial tax benefits to yourself or your family, while at the same time making long term contributions to the Kittner Eye Center at UNC.

To explore the many choices of planned giving from charitable annuities and trusts to gifts through wills, please contact Sandy W. Scarlett in the Development Office at 919-843-1299.

A 1939 UNC graduate with a business administration degree, Kittner now practices law in Philadelphia. In addition, he has two brothers, three nieces and two nephews who all have degrees from UNC. Previously Kittner and the Kardon Foundation – a charitable foundation based in Philadelphia, Pa. – have given more than $300,000 to various components of the university, primarily to the Rose and Louis Kittner Scholarship Fund, which provides need-based scholarships for undergraduate students.

Did You Know?

According to the National Eye Institute in a March 2008 press release on a survey with 3000 respondents:

- 71% reported that a loss of their eyesight would rate as a 10 on a scale of 1 to 10, meaning that it would have the greatest impact on their day-to-day life.
- 51% said that they have heard that people with diabetes are at increased risk of developing eye disease, but only 11 percent knew that there are usually no early warning signs.

The National Eye Institute (NEI) is part of the National Institutes of Health (NIH) and is the Federal government’s lead agency for vision research that leads to sight-saving treatments and plays a key role in reducing visual impairment and blindness. For more information, visit the NEI Website at www.nei.nih.gov.
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A normally quiet corner of Sitterson Hall, home to UNC’s computer science department, is full of chatter today as kids and adults wait in a knot. In the middle of the floor, a slender girl with bright blonde hair hops onto a plastic mat divided into nine squares.

A tune starts to play, and the girl moves her feet, first tentatively, then with more confidence as she learns to stomp on the squares in time to the beat. The projector screen in front of her displays an equally blond animated character doing dance moves with her upper body, smiling when the player correctly hits a beat.

Animal sounds in Cymone’s head-phones signal her to move her on-screen character by leaning left or right.

Photo by Kelli Gaskill, ©2008 Endeavors magazine.

Jordan places Sweet Tarts in holes on a board to create music. The Sweet Beat game uses a webcam to detect when a hole on the board is covered, and adds a new sound to the pattern of rhythms.

Photo by Kelli Gaskill, ©2008 Endeavors magazine.

The game sounds a lot like the dance video games that have been popular in the United States for nearly a decade. But there’s one major difference: the girl standing on the dance pad is blind. She can’t see her dancing counterpart on the screen in front of her — and she doesn’t really need to. The game gives her audio feedback on her performance: a handclap when she steps in time to the beat, an occasional buzzer when she’s off rhythm. Six-inch-wide pieces of carpet cover the centers of the squares on the pad, telling her feet where to step.

Like many of the other games on display nearby, Move to the Music includes visual effects to appeal to sighted players. But all the games were designed by student creators primarily for players who can’t see.

The students are getting lots of opportunities to test their work. Maze Day — named for a maze kids navigate by listening for the sounds of howling wolves and trumpeting elephants — has drawn seventy kids from around North Carolina, all of them visually impaired.

According to a November 2007 Associated Press-AOL Games report, 81 percent of children ages four to seventeen now play video or computer games at least occasionally. And the gaming sector is growing rapidly.

Marketing research group NPD reported that Americans spent $17.9 billion on video games and consoles in 2007, up from $12.5 billion in 2006. Players can get just about any kind of game they want, from sports to shooting games to online role-playing worlds with millions of characters. But the games all have something in common: you have to be able to see the screen in order to play.

There’s one trend in the gaming industry that may be hopeful for blind people: the recent popularity of games incorporating a physical dimension. In 2001 Dance Dance Revolution (DDR) became the first popular dancing game to come to home consoles. Since 2005, Guitar Hero — a game that cues players to press buttons on a guitar-shaped controller to simulate playing rock music — has become popular with both kids and adults. And in 2006, Nintendo’s Wii console with a detached controller opened up the possibility for a variety of games in which players shake, wave, and swing the controller to direct on-screen action.

None of these popular technologies were marketed to visually impaired players. But with practice, a visually impaired kid can stomp on a pad, swing a controller, or strum a guitar as well as a sighted one can.

Moving around while playing a video game may be even more helpful for blind kids than it is for sighted ones. “There aren’t as many things you can do when you come home from school, if you’re a blind kid,” Bishop says. “You’re not running around outside as much, you’re not playing basketball or riding bikes.”

Exercise was an important motivation for the students who adapted DDR for people with visual impairment. In the original game, directional arrows moving on the screen cue a player to step on the up, down, left, and right arrows on a dance pad. “The game is being put in schools now as a way to get exercise, but obviously blind kids can’t use it,” says Jason Cisarano, who worked on Move to the Music.

“We wanted to make something blind kids could play, but that would also be fun to do with their classmates or siblings who can see.”

Most of the games at Maze Day are based on widely available technology with fewer modifications. “It reflects the focus I have now on commodity hardware,” Bishop says. “If I make custom hardware, nobody’s going to have a copy. But if I use stuff you can buy off the shelf, it’ll be relatively inexpensive and lots of people will be able to use it.” A lot of the games at Maze Day use microphones or webcams that can be bought for about $15. Even the DDR-style games are made up of inexpensive gear, and the only modification is gluing on some squares of scrap carpet.

There are a few more expensive or more technical exceptions, such as the WiiMotes, which currently sell for about $40. Maze Day this year also included a blind-accessible guitar-playing game, developed by two students in Bishop’s first-year seminar. As in Guitar Hero, note cues on the screen appear to travel toward the player. The students’ innovation is in the guitar-shaped controller: they modified the buttons to make buttons vibrate, first weakly, then more strongly to signal the player when to play a note.

Bishop’s goal, echoed by many of the students who worked on the accessible games, is to make most of their products freely available online.
Move to the Music

working on a web site to advertise site SourceForge. Kevin Coletta is the game on the open-source web Beep Ball’s authors, plans to put class. Carl Schissler, one of Wii improving their games outside of they may continue to work on products. allows other programmers to easily improve or build on each other’s source programming tools. This by powerful libraries of open- such as Python that are backed by these kids.”

There aren’t as many things you can do when you come home from school, if you’re a blind kid. You’re not running around outside as much, you’re not playing baseball or riding bikes.

— Gary Bishop, Professor, UNC Computer Science

filing a niche that markets don’t. Many of the games were written in popular computer languages such as Python that are backed by powerful libraries of open-source programming tools. This allows other programmers to easily improve or build on each other’s products.

All the groups of students said they may continue to work on improving their games outside of class. Carl Schissler, one of Wii Beep Ball’s authors, plans to put the game on the open-source web site SourceForge. Kevin Coletta is working on a web site to advertise Move to the Music. He’s also trying to add an important feature: letting users import their own music files. The challenge is making a program that can reliably detect the beat of a tune, Coletta says.

For Bishop, who has organized Maze Day for four years, a major motivator is knowing that he and his students are in a relatively small pool of computer scientists working on such projects. This year their half-day event drew kids and teachers from as far away as Buncombe and New Hanover Counties. “We even had one teacher who was from Alabama,” Bishop says. “People are willing to come from so far away — it tells you something about how little there is out there for these kids.”

The ophthalmologist has done all that can be done medically and all too often the patient hears there is no hope to lead a full life. The lack of hope can often lead to depression and confusion as to how their lives will be for the future. What do they do now that the diagnosis has been given? What is the best next step?

Although there are other eye diseases for young and old that can lead to blindness, age related macular degeneration has become one of the top adult eye diseases that often leaves patients with limited or no central vision. Glaucoma can leave patients with limited or no peripheral vision. As a result of these and other eye diseases, patients are often unclear as to how to cope with their vision loss which currently seems incurable. Whether they fear never reading again, never seeing clearly the faces of loved ones, driving their car, cooking their own meals or communicating through the computer or written word, each patient has to face several challenges and difficulties. Thus every such patient needs a thorough individual low vision assessment that will lead to personalized advice and help. What works for some might not be the help others seek.

This story is about two men who are leading full and productive lives after the medical diagnosis of macular degeneration. They have received the very best medical care possible, but macular degeneration has ultimately meant making several major changes in their lives. With their help UNC Eye has formed a UNC Eye Low Vision Support Group to consult with the faculty and provide a resource to patients that come through our doors seeking hope if not a cure. Two founding members of the Low Vision group are Major General (Retired USAF) Arthur W. Clark and Herb Halbrecht who owned a senior level high tech executive search firm. These two low vision patients can be found in the early morning hours exercising at the UNC Wellness Center, or speaking regularly to friends and acquaintances about where to go to get help with low vision, and working closely with UNC Eye to develop and promote UNC’s services to those with low vision.

Arthur Clark

“We seek to combine our knowledge with that of others in the medical, occupational therapy and technology fields. Additionally we join UNC Eye faculty and staff to gather examples of what works for other low vision patients and then use their experiences to guide how you can best be served.”

Herb Halbrecht

“While we hope that the medical profession can help those of us with vision problems, realistically, many of us are beyond medical assistance. I have advanced dry macular degeneration and cannot read normal text and have to work out my own aids to meet my daily needs for a fulfilled life. In the process of learning to read with my ears, I have learned much about what technologies are available, such as Mac speak, Dragon-Naturally Speaking, and use of Voice Recognition. Recently Mac developed an excellent voice recognition program for its Apple computers. Microsoft also offers voice recognition. For me the goal is about inspiring hope and direction for low vision patients. The ability to give others hope is my inspiration and is why I am working with any low vision patient to assist in any way as needed.”

Gary Bishop is a professor of computer science in the UNC College of Arts and Sciences. Reprinted with permission a portion of a recent article in Endeavors.

To find out how to contact either of these volunteers for information on low vision aids that work for them or for information on how to schedule your low vision assessment, contact Sandy W. Scarlett at 919-843-1299.

Arthur Clark

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A Commitment to Listening to our Patients

Your many words and gestures of appreciation to our faculty and staff over the years have been an inspiration. For many patients, precious vision has been restored; for others, there has not been a full restoration of sight and they are referred to our "Living with Low Vision" service. You came to us for hope and caring and it is our goal to provide both. We value serving you and seek to increase our ability to meet the growing numbers of patients coming through the doors of the Kittner Eye Center.

The doctors are committed to keeping up with the latest research and treatments to improve outcomes for eye diseases in our youngest to our oldest patients. At this special time of the year, we ask those who are able to consider making a gift towards our growth. Your gifts make a difference when added to others. Together we can help others see. You may want your gift to be in honor of your doctor or to be directed to your area of interest. Indicate your preference on the check or in a note accompanying your gift. A self-addressed, postage free envelope is enclosed for your convenience.

To arrange other giving, including a gift of appreciated property, I am as close as your phone, email, or mailbox. Please contact me at 919-843-1299, use the enclosed envelope, or email me at Sandy...Scarlett@med.unc.edu.

I hope to meet many of you in coming months. Until then, please accept my best wishes to your loved ones and you for a healthy and happy New Year in 2009.

Sandy W. Scarlett, M.A., M.B.A., CFRE

Dr. Kenneth Cohen Celebrates 30 Years at UNC

Kenneth L. Cohen, MD, celebrated 30 years with the UNC Department of Ophthalmology on September 1st, 2008. Dr. Cohen attended the University of Illinois College of Medicine for his medical education, where he received his degree in 1971. After completing his residency training in ophthalmology at Northwestern University and a Cornea fellowship at the Medical College of Wisconsin, Dr. Cohen joined the Department of Ophthalmology at UNC as an Assistant Professor in September, 1978.

Over the last 30 years, Dr. Cohen has established himself, both nationally and globally, as one of the leading experts in cataract and intraocular lens surgery. He has been on the forefront of developing and promoting new surgical techniques and having them available to patients of UNC Eye.

Most recently Dr. Cohen brought Deep Stripping Endothelial Keratoplasty (DSEK) surgery to UNC. DSEK provides a much less invasive mode of corneal transplantation, which in turn provides much faster post-op wound healing. With DSEK patients, improvement of vision can be seen in as little as one to three months post-op, where improved vision after traditional penetrating keratoplasty can take as long as one year.

Throughout his career with UNC Eye, Dr. Cohen has been an advocate for the education of resident physicians and his peers, locally and on the international level. In 2007, Dr. Cohen along with then Chief Resident Casey Mathys, MD, traveled to Hanoi, Vietnam on a trip sponsored by ORBIS International, a humanitarian organization dedicated to blindness prevention and treatment in developing countries. The mission of the trip was to teach corneal transplant surgery to the ophthalmologists at the Vietnamese National Institute of Ophthalmology.

UNC Eye would like to congratulate and thank Dr. Cohen for 30 years of outstanding service and dedication to his patients and the department.
Dr. Mary Elizabeth Hartnett, a Clinician-Scientist with Scientific Insight

Beyond the exquisite complexities of her research and the full-throttle demands of a clinical practice, ask Dr. Mary Elizabeth Hartnett, MD, what drives her, and her answer is elegantly uncomplicated. "My patients," she said. Her patients are at two extremes: those 60 and older, who suffer from age-related macular degeneration, and the very young—premature babies afflicted with a disorder called retinopathy of prematurity. Each is the principal cause of blindness for that age group. "I can’t tell you how many sleepless nights I have had about an infant. My goal is always to try to have vision develop in both eyes, or at least to get one eye," Dr. Hartnett said. "I feel the same way about the elders. If we can do something to provide sight to a person so they don’t feel they’ll lose their independence, that’s very important."

Dr. Hartnett is the only surgeon in the UNC system to have received not one, but two RO1 research grants from the National Institutes of Health. The translational research she conducts brings laboratory discoveries to bear on clinical practice, and takes observations in patients into the lab for investigation. Dr. Hartnett is a true clinician-scientist, with a combination of scientific insight, persistence, and true dedication," said Department Chair Travis A. Meredith, MD. "She is absolutely determined to make a contribution to this work."

"I am trying to understand why blood vessel growth goes awry, because that is what causes vision loss," Dr. Hartnett said, describing the work supported by the two NIH grants, which are from the National Eye Institute.

Retinopathy of prematurity is a disorder experiencing a comeback because babies are being saved at younger gestational ages. The National Eye Institute estimates that in the US, about four hundred to six hundred infants each year become legally blind from retinopathy of prematurity. In this disorder, oxygen exposure causes the development of blood vessels in the retina to become abnormal. The exact cause is unknown. "That’s why we’re using an animal model that has similarities to what actually occurs in preterm infants," she said. Her laboratory research exposes animals to fluctuations in oxygen at levels similar to what human preterm infants experience in neo-natal intensive care units.

At the other end of the spectrum are patients over 60 suffering from the wet form of age-related macular degeneration. "One of the things they develop is blood vessels that invade the neurosensory retina, and that then causes vision loss," she said. Her current studies spring from research done about a decade ago, during fellowship training in Boston. Dr. Hartnett was using infrared light to image the maculas in patients with macula degeneration, a new technique at the time that produced a three-dimensional perspective that "looks like the topography of the moon."

"We found we could detect what appeared to be newly formed or abnormal choroidal vessels before they became apparent through the standard imaging method. The choroid is often where the blood vessels originate, then they grow into the neurosensory retina. We found that some people who had abnormal blood vessels did develop changes, and those people had vision loss," she said.

From those observations, she developed a hypothesis to test in the lab. Today her lab is using an in vitro cell co-culture she developed and animal models to study what causes the blood vessels to grow from under the choroid into the neurosensory retina.

What the two investigations share, she said, "is that rather than inhibiting blood vessel growth, we’re actually interested in redirecting it. Either having it grow into the retina, in the case of retinopathy of prematurity, or, in the case of macular degeneration, having it not grow into the retina."

Why did she choose her field?

"I find surgery challenging and technically interesting, and when it goes well, extremely rewarding. It seems valuable for me to offer sight to someone who otherwise would not have it. It was the combination of that and the idea that there was so much more to be done. The same for macular degeneration. I guess every person I saw was older and struggling. My heart goes out to them, especially those who lived through World War II and the Depression. They have worked so hard and have great values. They are really special."
A Unique Way of Seeing

Artists have different ways of seeing our world and the rest of us are inspired by those visions and works. It is to note that you are a friend of the Kittner Eye Center. The gift will be made after your purchase.

Visit www.samkittner.com to experience a “different way of seeing” through panoramic photography. Sam Kittner has discovered how to capture the amazing beauty in our surroundings from nature to major cities. The above photo was taken at Cape Hatteras, North Carolina.

The above photo was taken at Cape Hatteras, NC. Sam Kittner, Class of '85, and nephew of David Kittner, Class of '39, donated a copy of his panoramic photo of the Old Well on the UNC campus. The framed photo is located in a central area of the Kittner Eye Center.

As you view the gallery and consider a purchase, you can know that any purchase you make will result in a gift by Sam Kittner to the Kittner Eye Center. All you have to do is note that you are a friend of the Kittner Eye Center and the gift will be made after your purchase.

Enter the print gallery at: www.kittnerstore.com. From there you will see a listing of images including the Old Well photo and the Hatteras photo. Print a note of your wishes and end the purchase transaction. His photos are excellent for your office, home or to share as gifts. Also, be sure to visit the “Art for UNC Eye” program on our website at www.unceye.org. There you will see other artists who have agreed to donate a portion of their sales to UNC’s Kittner Eye Center. We are grateful for their interest and support.