



## Clinical Insight: Artistic Vision

**"Happy are the painters, for they shall not be lonely. Light and colour, peace and hope, will keep them company to the end of the day."**  
— Winston Churchill



But what does an artist do when the light and color begin to fade? Laurie Fendrich, an abstract painter and a fine-arts professor at Hofstra University, admits she initially did nothing when a "wiggle" began muddling the vision in her left eye: "I was supposed to be paying attention and I wasn't. I don't go to doctors very much, and I was practicing denial."

Fendrich describes herself as a "clean painter" whose sharply defined work is inspired by the early American modernists and Russian constructivists. "I do everything by hand, and I have to see things without a wiggle," she says. "I finally went to my ophthalmologist, and he said, 'I know the man who can fix this.'"

That man was the chairman of Columbia's Department of Ophthalmology. Stanley Chang, M.D. prescribed surgery to remove a membranal growth on Fendrich's retina.

*Foolish Vanity*  
by Laurie Fendrich.

"I have a dear friend who lost the sight in one eye from retinal detachment," Fendrich says. "When I told him I was going to Dr. Chang, he told me, 'You have the best doctor in the whole world.'"

Today, more than a year after a highly delicate procedure, Fendrich is in full, ecstatic agreement with her friend's assessment. She

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## Clinical Corner:

# Frontline Advance Makes Front-Page News

On September 27, 2009, *The New York Times* reported on Columbia's leading role in an extraordinary medical advance – the restoration of sight in people who are totally blind, through the implantation of electrodes programmed to act as an artificial retina. The front-page article told the story of 56-year-old Barbara Campbell, whose surgery was performed by Lucian Del Priore, M.D., Ph.D., Professor of Clinical Ophthalmology and the Robert L. Burch III Scholar at Columbia.

A sighted person perceives images after the light-sensitive photorecep-

tor cells in the retina turn light into an electrical signal. That signal is transmitted to other nerve cells – first in the retina, and then in the brain. But when an injury or a disease damages retinal nerve cells, light cannot be detected and vision is blocked.

With the artificial retina, Dr. Del Priore says, "You're essentially bypassing the cells that don't work." He describes the core of the device as a multiple electrode array that looks like a tiny postage stamp. Once it is

tacked into position touching the retina, the device is wirelessly connected to a digital camera mounted on the patient's eyeglasses. Dr. Del Priore credits the development of

this new technology to a multi-year collaboration between Mark Humayun, M.D., Professor of Biomedical Engineering and Cell and Neurobiology at the University of Southern California, and Second Sight Medical Products, Inc. Dr. Del Priore's surgical team at Columbia is one of the few nationwide to perform the groundbreaking surgery.

After a five-hour operation that required general anesthesia and began with a cataract removal by Columbia ophthalmologist

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## Dear Friends,

We are living in an era of dramatic change, challenge and renewal. In health care, the economy, education, real estate and so many other sectors, our world is rapidly changing. As you read this issue of *Viewpoint*, you will see how the Department of Ophthalmology is building upon its legacy of excellence – never by standing still, but by meeting today’s challenges and preparing for future advancements in research and patient care.

The downturn in the real estate market has enabled us to make maximal use of a lead gift from the Louis & Gloria Flanzer Charitable Trust, a major gift by Mr. Robert L. Burch III, and contributions from other supporters, by obtaining a long-term lease of prime space in midtown Manhattan at a very favorable rate. On page 8, you will read a brief notice about the opening next spring of the Gloria and Louis Flanzer Vision Care Center – a facility that will provide comprehensive care in a great location for many years to come.



Charles Morley

Longer articles introduce new members of the faculty, and share news of groundbreaking achievements in research and patient care by veteran faculty members like our two Drs. Smith – R. Theodore (Ted) Smith, M.D., Ph.D., a leading retina specialist, and Scott D. Smith, M.D., M.P.H., director of our Glaucoma Service. You

will also read here about a front-page story in *The New York Times* covering Lucian Del Priore, M.D., Ph.D. and his pioneering work on the artificial retina. And *Viewpoint’s* own front-page article tells the stories of talented visual artists whose eyesight was saved when they came to Columbia for surgery and other treatment.

In a reflective piece on the vital task of training future generations of ophthalmologists, we hear from Martin L. Lieb, M.D., who ran our medical-student education program for the past 27 years. Michael F. Chiang, M.D., M.A., the new educational director, also weighs in, offering his thoughts on the role educational technology plays in our plans for the future.

As always, my colleagues and I recognize that our ongoing achievements and future plans rely on the philanthropic support of our loyal donors and new friends. It would be impossible to overstate the appreciation and admiration I feel for these benefactors – especially during a time of economic crisis and continuing fiscal uncertainty. Thus, I am taking this opportunity to address our donors and say thank you again – for your commitment to medical science, your compassion for the patients treated at Columbia, and your generous financial support.

With all best wishes,

Stanley Chang, M.D.  
K.K. Tse and Ku Teh Ying Professor  
Edward S. Harkness Professor  
Chairman, Department of Ophthalmology

## Artistic Vision continued from page 1

reports, “Now I can look at one of my paintings about 50 feet away and see it very clearly – with no wiggle.” Adding that a fellowship this year enabled her to work in the south of France, and that the drawings she did there are appearing in her new show this November, she declares, “I’m a very happy camper.”

Another happy camper is Jane Vern, who was referred to Columbia when her eyesight and life as an artist were threatened by a hemorrhage in her left eye. A resident of the Litchfield Hills of northwest Connecticut, Vern has worked in a variety of mediums, including oils, watercolor, ink and collage, and she credits her artistic adaptability partly to an autoimmune disorder. The disorder, autoimmune polyendocrine syndrome, sometimes causes her to become allergic to substances she has worked with over a period of time. It also causes diabetes, which hardens the blood vessels in her eyes and leads to hemorrhages of varying severity. Small hemorrhages can be handled by the body, which reabsorbs the blood, but for Vern a large bleed in 2001 required reparative surgery.

“I was on my way to being blind,” she remembers. “Dr. Chang did a vitrectomy, which cleared

the blood out of my eye, and he’s been following me ever since. I wouldn’t be doing any artwork without his care. He has made my life possible.”

Fendrich and Vern were fortunate to have the best possible care the first time they needed eye surgery. But among the visual artists whose vision was saved at Columbia, there are those who found their way to its ophthalmologists



Going Home, a collage by Jane Vern.

after receiving previous treatment elsewhere. One of those artists is photographer Paul Richman of Boulder, Colorado. A retired computer scientist with a Ph.D. from Stanford

University, Richman has built a second career that is as successful and fulfilling as his first. Richman’s landscapes, created with the latest in digital photographic technology, capture the awe-inspiring beauty of both nature and architecture around the world.

“In 1978, I lost my right eye completely to bad surgery for juvenile cataracts. I picked the surgeon carelessly, and after that I got very careful about selecting surgeons,” Richman says. “In 1994, when I had a giant retinal tear in my left eye, a Denver surgeon told me that surgery had only a 40% of chance of success and had to take place in the next 24 hours. He said Dr. Chang was the best surgeon in the country, so I flew to New York that day. I saw Dr. Chang in the morning, he had me lie on my side for 12 hours to get the retina into the proper position, and then he did cryosurgery to fix the retinal tear. He saved my eye.” Since then, Richman has been surgically treated for iritis (inflammation of the iris) by Naresh Mandava, M.D., a Denver ophthalmologist who was trained at Columbia.

Back east in the New York town of Glens Falls, photographer Thomas Sullivan says he, too,

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# Science Insight: Imaging the Retina

**Like many diseases of the eye**, macular degeneration is a stealthy assailant. All too often, this aggressor is uncovered only after it has inflicted considerable harm on the retina and has stolen a sizeable share of an individual's sight.

The most advanced and destructive form of the disease is the "wet" (neovascular) form. In this form, abnormal new blood vessels grow under the retina and eventually burst, damaging the tissue of the macula – the part of the retina responsible for central, focused vision.

"When you lose your central vision, you lose the ability to read, write, and recognize faces. If a retinal hemorrhage is large enough, it can even lead to total loss of vision," said Columbia physician and researcher R. Theodore Smith, M.D., Ph.D., who has dedicated himself to finding methods of early diagnosis and effective treatment for macular degeneration. Currently, he says, the best means of slowing progression of the disease is vitamin therapy – a regimen of C and E, Omega-3 fatty acids, and the carotenoids lutein and zeaxanthin.

Cases of the wet form of macular degeneration eventually develop in about 10% of those who have suffered from the far more common "dry" form. The dry form is a growing threat as people get older and afflicts about 30% of the population over the age of 80.

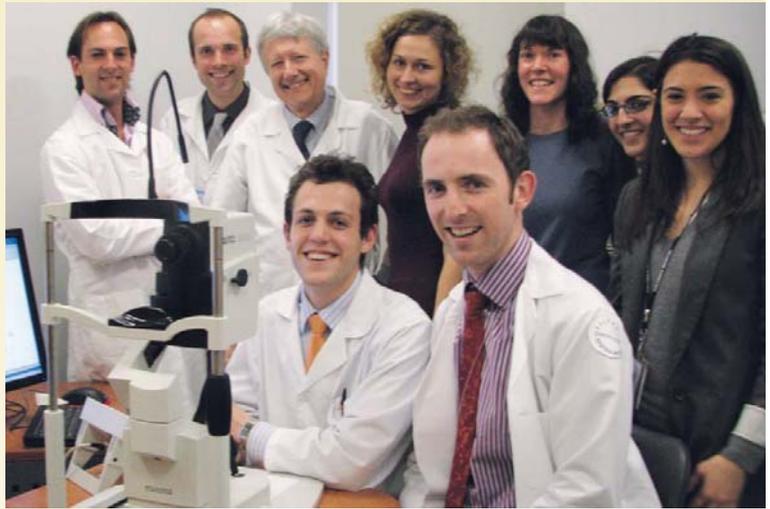
It is characterized by yellow waste deposits called drusen, which collect among the light-sensitive cells of the macula and interfere with the cells' functioning. Dr. Smith was one of the first to report on a type of drusen pattern called "reticular macular disease," which is strongly associated with advanced macular degeneration and suggests an inflammatory process at work.

"We've known all along that in addition to environmental factors like smoking and heavy sun exposure, there's a genetic component to the disease. For whatever reason, certain ethnic groups are at greater risk," Dr. Smith said. "An ancient, inherited mutation allows inflammation to start, go uncontrolled, and end up damaging the macula. Right now we're trying to figure out the trigger for inflammation, because on top of the genetic susceptibility, the disease process can be triggered by an infection or some other non-genetic factor. If we can find a trigger, we can develop more effective treatment options."

Thousands of patients are currently enrolled in a Columbia study in which

their genetic makeup is analyzed and scans of their maculas are taken with highly sophisticated equipment. Since biopsy of living retinas is hazardous, retinal images are a key component of patient treatment and research.

"Now at Columbia, we're involved in perfecting the equipment itself. In a new project, we're modifying autofluorescence equipment to make it reveal exact levels of lipofuscin, an important biomarker for macular degeneration, Stargardt disease, and retinitis pigmentosa. And in collaboration with the University of Southern California and Reichert Ophthalmics, we're developing hyperspectral imaging technology, which can identify compounds in the living eye. It's like having a chemistry lab in a camera," said Dr. Smith, adding, "Much of our image analysis and technological innovation is pursued in collaboration with the Biomedical Engineering department at Columbia – in particular the hyperspectral imaging project and the



R. Theodore Smith, M.D., Ph.D., top row, third from left, with the fellows, medical students and biomedical engineering graduate students working in his laboratory.

development of automatic image analysis techniques." Dr. Smith works closely with Biomedical Engineering Professors Paul Sajda, Ph.D. and Andrew Laine, D.Sc. and their graduate students, whose expertise in MRI and PET scan image analysis has been applied to retinal image analysis. This collaboration has resulted in a patented algorithm, several other pending patents, and computer applications which enable data sharing with other research institutions.

Dr. Smith's own Ph.D. in mathematics and expertise in biomedical engineering make him especially suited to the rigors of image analysis and the development of advanced equipment and automated techniques. Indeed, it was the technology and precision of ophthalmology that first attracted him to medicine. The doctor was a Columbia mathematics professor in his prior life.

Today Dr. Smith spends about half his time on research and half seeing patients. In the laboratory and on clinical rounds, he is also training the next generation of ophthalmologists. From his perspective, the view ahead couldn't be clearer or brighter.

"I can't believe people pay me to do this. I've got great colleagues – people at the top of their fields – and we have a critical mass of enthusiasm, resources, and brain power," he said. "It's always fun to get to work." ■

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## Frontline Advance Makes Front-Page News *continued from page 1*

Amilia Schrier, M.D., Barbara Campbell healed well and experienced no complications. She went through a period of intensive visual training as she learned to use the device. Now, she reports, visible items include traffic lights, the doorway to her apartment building, and even large letters on her computer monitor.

The *Times* article described Ms. Campbell's delight at being able to discern lights and shapes for the first time in decades, and her hopes that one day she'll see colors again. The article also quoted Dr. Del Priore on the limitations and formative nature of the brand-new device, and on the certainty that improvements in

design and reductions in size will enable future models to work faster and better and be easier to implant: "In 20 years, people will think it's primitive, like the difference between a Model T and a Ferrari. But the fact is, the Model T had to come first." ■

*Reading, 'Riting and Rotation:*

## Martin L. Leib, M.D. Reflects on His 27-Year Tenure as Director of Medical Student Education

**July 1, 2009** marked the end of an **educational era** at the Columbia University College of Physicians & Surgeons. On that date, nearly three decades after he first assumed responsibility for organizing and overseeing the ophthalmological training of all medical students at Columbia, Martin L. Leib, M.D. passed the torch to a new director.

Michael F. Chiang, M.D., M.A., Associate Professor of Ophthalmology and Biomedical Informatics, inherits a program that excelled and grew as other medical schools scaled down clinical education in the field.

"Nationally, only 30 percent of all medical schools still have a required program in ophthalmology. Most students don't get any exposure to the discipline, and that's very unfair to patients, who expect their doctor to know something about the eye. Nor is it fair to students as they make their career choices," says Dr. Leib, Clinical Professor of Ophthalmology and Director of Orbit and Ophthalmic Plastic Surgery at Columbia. Dr. Leib continues to teach medical students and residents, and maintains his busy practice specializing in cataract and laser surgery, and ophthalmic plastic, lacrimal and reconstructive surgery.

Because the loss of vision is a terrifying prospect for anyone, ophthalmology students at Columbia are taught to be especially sensitive to their patients' fears, and to answer patients' questions with clarity, compassion and support. Students learn to take a humanitarian approach to the discipline at the same time they are becoming trained in the technical, step-by-step procedures of an eye exam. Also notable is

Columbia's unusually high faculty-student ratio, which pairs each ophthalmologist with only one or two students. This enables the faculty member to pay full attention to an individual student's progress and uncertainties.

The educational experience benefits the teacher as much as the student, according to Dr. Leib. "It's imperative that we place ourselves in the company of young, questioning minds. Our students may naively ask questions that make us rethink what we thought we understood perfectly," he says. "The demands of teaching in the lecture hall, the laser laboratory, the operating room, the clinic and the private office constantly force our faculty members to see things in new ways and keep abreast of the latest advancements in our field."

Dr. Leib says he will continue to look forward to the challenge and inspiration of his students' questions. And he hopes that Columbia's required third-year rotation will continue to inspire about five to eight members of each class to specialize in ophthalmology. "That's a relatively high number, and it says a lot about the rotation," he notes.

It also says a lot about the doctor who designed and ran the rotation, and about the significant effect of Dr. Leib's work on past, present and future generations of students, graduates, medical researchers, and clinical practitioners.

"It's humbling to take on this job after Dr. Leib has done it for so many years. Under his leadership, Columbia has produced so many superb ophthalmologists who are



Martin L. Leib, M.D.

now leaders in the field," Dr. Chiang says, adding, "I love working with medical students, and we're thinking of ways to make their educational experience even better – particularly by incorporating modern information technology like examination simulators and online lecture videos.

Simulators would enable students to learn how to perform eye exams without practicing repeatedly on patients, and offering video lectures would free students from attending lectures at set times – making it easier for them to focus on patient care, Dr. Chiang explains. "With innovations like this," he says, "I hope to be able to build upon Dr. Leib's legacy." ■

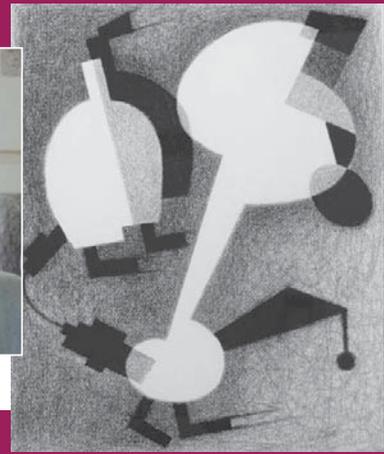




Jane Vern with her collage, *Pulling Down the Sky*.



Laurie Fendrich with her drawing, *Untitled #28*.



Paul Richman with his photograph, *Dreaming Sand*.

## Artistic Vision *continued from page 2*

owes his remaining eyesight and lasting career to Columbia's Department of Ophthalmology. Already totally blind in his left eye due to a giant tear in the retina and three unsuccessful operations, Sullivan had managed to sustain his success as a freelance photographer, shooting covers and inside art for magazines, recording sports events and social gatherings, and working for *The Chronicle*, Glen Falls' local newspaper. "But then I started having trouble with my right eye," he says. "A year after a cataract operation, my vision felt like a tether, as if a curtain of the eye were swinging and starting to close."



Ophthalmologists in both Glens Falls and Albany told him to see Dr. Chang. After his appointment, Sullivan recalls, "I stayed overnight in Manhattan, and the next morning I was operated on for a retina that was already detached." That operation was followed by another, and by a six-week recovery period. He had to keep his head down and lie on his stomach.

"The recuperation was tough but I did my homework. Now the vision in that eye is about 20-40," Sullivan reports. He says that from now on he won't let anyone but his Columbia doctors take care of his eyes, and praises Dr. Chang for being "a wonderful humanitarian, a wonderful human being."

*The next issue of Viewpoint will tell the stories of Robin Antar, Judith Shea and Betty Woodman, three sculptors whose eyesight has been saved by ophthalmologists at Columbia.*

Thomas Sullivan with his photograph, *Winning Horse*.



## Promotions

**James D. Auran, M.D.**  
promoted to Clinical Professor of Ophthalmology, effective Jan. 1, 2009

**Gaetano (Guy) R. Barile, M.D.**  
promoted to Professor of Clinical Ophthalmology, effective Sept. 1, 2009

**Michael F. Chiang, M.D., M.A.**  
promoted to Associate Professor of Ophthalmology and Biomedical Informatics, effective Sept. 1, 2009

**Golnaz Moazami, M.D.**  
promoted to Associate Clinical Professor of Ophthalmology, effective Jan. 1, 2009

**William M. Schiff, M.D.**  
promoted to Professor of Clinical Ophthalmology, effective Sept. 1, 2009

**R. Theodore Smith, M.D., Ph.D.**  
promoted to Clinical Professor of Ophthalmology (in Biomedical Engineering), effective July 1, 2009

# Clinical Spotlight: Glaucoma Service

**In their cutting-edge research,** and in the advanced training they provide to medical students and specialists at Columbia and around the world, the doctors in the Glaucoma Service are at the fore of inquiry, discovery and education in one of ophthalmology's most critical fields. But they excel most dramatically in the care and treatment of patients like Unda Brechtel.

The pressure in Brechtel's left eye had been climbing steadily, at a frightening rate. Over a three-year period, the numerical marker for glaucoma had soared from 18 to 38.

"Normal is around 14. Once it's over 20, doctors get nervous," Brechtel said. A retired public-library director who lives in a small town on the Hudson River, Brechtel also had a cataract in the afflicted eye.

After talking to a number of doctors, she chose Scott D. Smith M.D., M.P.H., Director of the Glaucoma Service. Dr. Smith performed her dual cataract and glaucoma surgery on September 3, 2009. "I was so scared" Brechtel recalled. "But the surgery only took about 20 minutes. I was awake, and there was no pain. It was really amazing." Her eye pressure immediately fell to 15, and less than a day after the surgery, she was seeing extremely well.

The surgery was quick and minimally invasive due to Dr. Smith's use of a new surgical device called the Trabectome, which lowers pressure in the eye by clearing natural drainage pathways.

Dr. Smith earned his medical degree at Yale and his master's in public health at Johns Hopkins. As a medical student, he was drawn to glaucoma research: "I originally became interested in investigating the factors that regulate fluid production in the eye, and how these factors can be altered to lower eye pressure. Then I also saw how rewarding it could be to have a direct impact on someone's life – to restore their vision or help them not lose their vision."

His current research is aimed at finding ways to improve the diagnosis of angle-closure glaucoma – a form of the disease that often afflicts people born with an especially narrow angle between the iris and the cornea. "We're working on the use of anterior segment imaging techniques to measure the curvature of the iris and quantify the anatomic features of the anterior segment," Dr. Smith said. "For people who don't realize they're anatomically vulnerable to angle-closure glaucoma, such imaging may be a useful screening tool."

Meanwhile, as Associate Professor of Clinical Ophthalmology, Dr. Smith



Scott D. Smith, M.D., M.P.H.

is training the current generation of medical students, residents, and fellows in glaucoma. "To contribute to the development of other physicians is extremely rewarding," he said. "It allows me to benefit not only those patients whom I care for directly, but to indirectly benefit the innumerable current and future patients of those I am teaching and training."

Dr. Smith and his colleagues conduct educational programs not only for ophthalmology residents practicing at Columbia, but also for ophthalmology residents from other institutions in the metropolitan area.

One Columbia eye surgeon who sees teaching as a deeply fulfilling calling is Lama Al-Aswad, M.D., Assistant Professor of Clinical Ophthalmology. She also plays a big role in instructing medical students, residents, fellows in glaucoma, and visiting doctors. The founder of the New York Chapter of Women in Ophthalmology, she is also a highly regarded lecturer at major citywide seminars for ophthalmology professors and ophthalmology residents.

In 2006, in collaboration with the Friends of The Congressional Glaucoma Caucus Foundation, Dr. Al-Aswad created New York's Glaucoma Screening Program, which brings screening and extend-



Lama Al-Aswad, M.D.

ed treatment to disadvantaged, medically underserved communities throughout New York City. It's different from other programs, she said, in that it has met her conditions to follow up with patients after screening and treat those who don't have insurance.

Dr. Al-Aswad was responsible for bringing the Trabectome to the Eye Institute. In fact, she is one of the certified trainers in the use of this surgical device in the Northeast. Ophthalmologists from around the US and from abroad have come to Columbia for training in this innovative surgery, and to date 45 doctors have completed the program and

earned certification in the procedure. Training videos for the implant operation are also circulated on a global level, enabling ophthalmological surgeons everywhere to enhance their knowledge and skills.

For Dr. Al-Aswad, a career in ophthalmology offers the best of two worlds – dramatically curative surgery, and a continuing relationship with each patient. "The eye is fascinating, and when you save a person's sight, you feel that you're having a great influence on the rest of their life," she reflected.

Her feeling of accomplishment is especially strong when she is able to successfully operate on patients with very complicated conditions. Such is the story of an 80-year old woman with endstage uncontrolled glaucoma, epithelial downgrowth (a corneal disease that causes vision and eye loss) and cancer. Dr. Al-Aswad was able to control the patient's glaucoma, treat her corneal disease and maintain her vision until she died three years later. The patient was so grateful that she thanked the doctor in an acknowledgement in the last book she wrote.

To continually improve the treatments available for all of her patients, Dr. Al-Aswad also engages in a wide range of clinical research. "I'm working on ways to improve the glaucoma drainage implants function, on the anti-metabolites used in glaucoma surgery to prevent scarring, and on ocular imaging to help in the diagnosis of the disease," she said.

Dr. Al-Aswad travels around the world to lecture and perform surgery, but she's always happy to return home. "Columbia is a great place to work," she said. "I enjoy the academic stimulation, the ability to grow and develop, the support of the department and the chairman, and the ability to collaborate with doctors in other specialties. It's an honor to be a part of this institution." ■

# Rising Talent

Always a magnet for the best and the brightest, the faculty of the Department of Ophthalmology recently welcomed three extraordinarily talented doctors to its ranks. The new faculty members' respective specialties are the retina, the cornea and refractive surgery, and ophthalmic plastic and reconstructive surgery. All three appointees now hold the academic title of assistant professor of clinical ophthalmology, as they dedicate themselves to the care and treatment of patients, the training of students and residents, and the exploratory and evaluative process of frontline ophthalmic research.

**Louis K. Chang, M.D., Ph.D.** didn't have far to travel in his move to a new post. He was already at the Harkness Eye Institute, completing a clinical fellowship in vitreoretinal surgery. Expressing his delight at staying on at Columbia, he says, "The people here are a wonderful group to have as colleagues. And the level of patient care is top notch."

With dual doctoral degrees from the Medical Scientist Training Program at Washington University in St. Louis – a medical degree and a Ph.D. in neuroscience – Dr. Chang is particularly knowledgeable about what constitutes top-notch care. His doubly rigorous education, he said, taught him "to always think critically about how we diagnose and treat disease, and to continually try to overcome our current limitations in treatment and find new solutions to problems."

In his own research at Columbia, he's focusing on the development of new treatments for retinal vein occlusion (a common cause of blindness) and new methods of imaging the retina. In his clinical practice, he performs surgery and provides ongoing medical management for patients with retinal diseases like macular degeneration, diabetic retinopathy, and retinal detachment.

Dr. Chang says that it was the ability to dramatically improve the quality of people's lives by saving their vision that drew him to ophthalmology. The other attraction, he says, was "the beauty and complexity of the retina itself."

**Leejee H. Suh, M.D.** had a little farther to travel when she came to Columbia in early July. Before the move, she was a clinician, researcher and faculty member at the University of Miami's Bascom Palmer Eye Institute, and before joining the faculty at Bascom Palmer, she had completed a fellowship there in corneal and external diseases of the eye.

When she relocated to New York this summer, Dr. Suh was actually coming home – and returning to the city for the second time. She grew up in Queens and graduated from Stuyvesant High School, and after graduating from MIT, came back to earn a medical degree at NYU. Her residency in ophthalmology was in Baltimore, at the Wilmer Eye Institute at Johns Hopkins. At Columbia, she says, it's exciting to be part of a

group of cornea and refractive surgery specialists making great advancements in research and patient care.

Dr. Suh is evaluating a new surgical treatment for patients with corneal edema or swelling – a condition in which the cornea's innermost layer of cells, the endothelium, is reduced or faulty due to prior surgery or to a progressive hereditary disease called Fuchs' endothelial dystrophy. For this condition, Dr. Suh performs a new procedure called Descemet stripping endothelial keratoplasty, or DSEK, which avoids the serious drawbacks of traditional corneal transplantation. A partial thickness graft containing healthy endothelium is inserted into the patient's eye and attaches to the patient's own cornea without sutures, minimizing suture-related complications like infection, rupture, and extreme astigmatism. "Recovery time is a few months rather than a year," Dr. Suh reports.

She is also playing a central role in the use of new technology and the development of new techniques to improve LASIK refractive surgery and cataract surgery. Looking forward to the arrival of a femtosecond laser at Columbia's anticipated new refractive surgical center, Dr. Suh is eager to use this technology to perform "blade-free" LASIK surgery. In addition, the femtosecond laser can customize traditional corneal transplantation procedures – the laser creates a customized cut on the patient's recipient cornea and can also sculpt the donor cornea to create an exact mold that fits the cuts on the patient's cornea. Thus the donor and recipient tissues fit like a puzzle and allow for a more stable graft and faster wound healing.

At the same time, Dr. Suh is working with Columbia ophthalmologists Stephen Trokel, M.D., Richard Braunstein, M.D. and Amilia Schrier, M.D. to investigate collagen cross-linking – a new way of retarding the progression of keratoconus, a progressive

disease that distorts the shape and structure of the cornea. Expressing admiration for her colleagues at Columbia, Dr. Suh affirms, "This is a great place to work." Moreover, on her days off, she's able to easily make the trip to Queens to cheer on another favorite professional team (albeit one with a more mixed record of success). "I'm a diehard Mets fan," she says.

For **Bryan J. Winn, M.D.**, the faculty appointment at Columbia is also a return to familiar, favored territory. After growing up in Bergen County, New Jersey, and graduating from Amherst College, Dr. Winn received his medical degree from Columbia.

While at Columbia's College of Physicians and Surgeons, Bryan Winn strived to achieve a balance between the arts and the sciences. He was the musical director of the school's a cappella group, *The Ultrasounds*, and as a member of the medical school's theater group *The Bard Hall Players*, he directed and acted in several plays. He also did a clinical research fellowship in Ocular Electrophysiology and Neuro-ophthalmology, was elected to the Alpha Omega Alpha medical honor society, and received the Janeway Prize

for highest achievement and abilities in the graduating class.

Dr. Winn went on to complete his medical internship at the Brigham and Women's Hospital/Harvard Medical School, ophthalmology residency at the University of California, San Francisco, and an ASOPRS fellowship in oculoplastic surgery in Seattle, Washington. Explaining his philosophy on medical care, he says, "So much of medicine today is run like an assembly line in a high-volume factory, often falling short of creating a quality product. I believe there is still a place for the detective, craftsman and innovator. I'd much rather take the time necessary

to tease out the correct diagnosis, custom-design a treatment plan with my patient, and execute that plan with painstaking attention to detail than be an 'assembly line' physician."

He has recently been looking for clues about a rare type of orbital disease: sclerosing orbital inflammation. Some patients with this condition also develop inflammation and scar tissue around the kidneys, pancreas and thyroid gland – a systemic autoimmune condition called multifocal fibrosclerosis. "I set out to see if there were observable similarities in the cases of sclerosing orbital inflammation that turn out to have multifocal fibrosclerosis, so that it could be diagnosed correctly and the other organs could be saved in time," Dr. Winn explains. His findings, which were recently submitted for publication, include the observation that inflammation associated with systemic disease almost always occurs behind both eyes, whereas the non-systemic type is almost always one-sided.

In another research project, he is measuring the effects of cosmetic Botox on muscles in different parts of the face using electromyography (EMG) to determine why the upper face requires significantly more Botox treatment than the lower face to achieve optimal cosmetic results. This application of scientific principles is uncommon in cosmetic surgery, where answers are found all too often through trial and error.

For Dr. Winn, aesthetics and function are both the highest priorities, and are always inextricably linked – whether he's performing a cosmetic procedure, removing a malignant tumor on the eyelid, or, as the associate residency director, training the next generation of ophthalmologists. And he's thrilled to be at an institution where all of his colleagues – in ophthalmology and other specialties – are leaders in their fields. "In oculoplastic surgery, I work regularly with doctors from many other specialties, including otolaryngology, neurosurgery, dermatology and plastic surgery," he says. "Here, the quality of collaboration in research and patient care is second to none." ■



Charles Marzby

Leejee H. Suh, M.D.



Charles Marzby

Louis K. Chang, M.D., Ph.D.



Charles Marzby

Bryan J. Winn, M.D.

# News

## Opening Next Spring: Gloria and Louis Flanzer Vision Care Center

Take an observant walk down 53rd Street in midtown Manhattan, and you'll take in an eye-full of iconic institutions and attractions. From the Museum of Modern Art to Lever House, from Paley Park to the Lipstick Building, the block is home to major international beacons of culture, business, architecture and recreation. Soon the block will also be the home of the Gloria and Louis Flanzer Vision Care Center.

Funded by a lead gift from the Louis & Gloria Flanzer Charitable

Trust, a major gift from Mr. Robert L. Burch III, and gifts from other supporters, this new midtown facility will occupy the entire second floor of 880 Third Avenue's prime corner location. The site will provide Columbia ophthalmologists and their patients with state-of-the-art equipment in beautifully spacious, conveniently located offices. As it joins its famous neighbors on that distinguished block, the center will shine as another beacon of excellence – excellence in eye care and ophthalmological procedures in midtown Manhattan. ■



Above: Lobby Entrance  
Right: Building Exterior  
Below: Flanzer Center  
Waiting Area



### Important Patient Care Information

Specialties: Cornea/External Ocular Disease  
Glaucoma  
Pediatric Ophthalmology and Strabismus  
Refractive Surgery/LASIK  
Vitreoretinal and Uveitis

*For inquiries and appointments, please call 212.305.9535*



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