



Clinical Insight:

Team of Columbia Experts Restores War Correspondent's Sight

Sundown was drawing near in the Afghanistan village of Gewi, in Kunar province, on September 10, 2010, the last day of Ramadan. Embedded CBS News reporter Carmen Gentile walked down a narrow lane along with a foot patrol of U.S. forces. "The tension was palpable," he recalls. "Suddenly, a man popped out of a little stone hut and fired a rocket-propelled grenade in our direction."

In what the reporter called a "billion to one shot," the RPG had not detonated. It bounced off Gentile's face, hit the platoon leader next to him in the elbow, and then just clattered to the ground.

"My right eye went black immediately," Gentile says. "I was bleeding profusely, and I was certain he'd shot my eye out. As the medic was bandaging my face, I kept asking, 'Be straight with me, did he shoot my eye out? Do I still have my eye?' The medic was telling me yes, but I thought he was just trying to keep me calm. I kept asking, and he finally said 'Look, shut up, yes.'"

After his bleeding was controlled, Gentile was flown by helicopter to the Staff Sgt. Heathe N. Craig Joint Theater Hospital in Bagram, one of the largest and best-equipped trauma facilities in Afghanistan, where surgeons immediately operated to save his eye. "Many of the bones around my orbital socket had been crushed, and my eyeball was lacerated. They did initially think I would lose the eye," he recalls. "That's what a nurse told me when I woke up from surgery. They wanted to prepare me for the worst—but they did an amazing job on me there."

Still heavily medicated, Gentile was then flown to Landstuhl Regional Medical Center in Germany, the largest military hospital outside the U.S. Meanwhile, CBS

▶ continued on page 7



L to R: William Schiff, M.D., Carmen Gentile, and James D. Auran, M.D.

The video Mr. Gentile was shooting captures the incident. At one point, his camera is trained on two seated men, speaking to the soldiers. Then you hear a loud noise, and the image goes black. Next, you can hear the hollow boom of the RPG firing, the rush of it approaching, and a sickening thwack and moan as the grenade hits its target—the side of Gentile's face. The picture careens sideways as the camera—along with its operator—falls to the ground, pointing crookedly at a boulder. "Are you okay?" calls a man's voice. "No," Gentile moans back.

INSIDE

View from the Chair 2

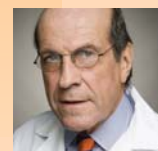
Science Insight 3

Collagen Cross-Linking: Strength Training for Diseased Corneas



Visionaries & Luminaries 4

Myles Behrens, M.D. to Retire from Columbia



First Annual Residents' and Fellows' Day



Young Talent 6

Gaetano Barile, M.D. Named to Espy Professorship: Department Celebration Honors Both Professors

On May 17, the Department of Ophthalmology celebrated the naming of Gaetano "Guy" Barile, M.D. as the first John Wilson Espy Professor of Ophthalmology with a dinner at the University Club to honor both Dr. Espy and Dr. Barile. Both men's families joined Department of Ophthalmology faculty members and other Columbia staff at the event. Highlights from the dinner included several toasts from colleagues, a review of Dr. Espy's history at the Eye Institute from Department Chair Stanley Chang, M.D., and a warm speech from Dr. Espy.

"I'm delighted that Dr. Barile has been named the first Espy Professor," says Dr. Espy. "From the

time that my family first endowed the chair, he was my first choice for the position."

About five years ago, Dr. Espy's family, led by daughter Burwell Schorr and her husband, finance executive Paul Carl "Chip" Schorr IV, approached the Department of Ophthalmology with the idea of honoring the long-time Department professor with a named professor-

ship. "We were inspired by his passion for medicine, his love for Columbia, and his interest in the next generation of ophthalmologists," says Mrs. Schorr. "From the time I was a child, when we'd go out of the city on weekends, he'd stop at the hospital first and I'd go with him on rounds. I absolutely loved it! Sometimes I could go into

the room with him, and I saw how much his patients loved him and appreciated his deep commitment to them."

Dr. Espy had no idea what his family was planning. "My daughter had told me that they planned to make a donation and

▶ continued on page 2



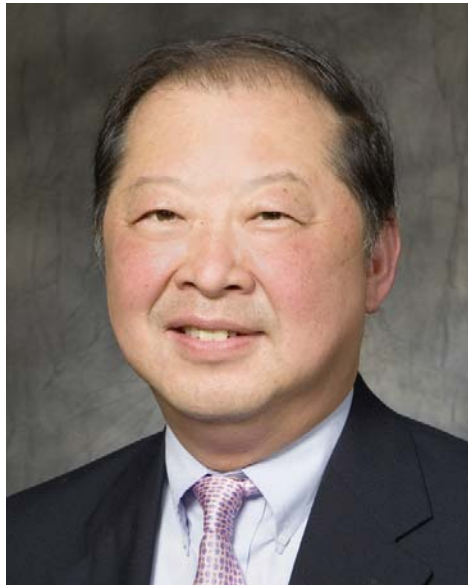
L to R: Gaetano Barile, M.D. and John Wilson Espy, M.D. at the festive dinner.

Dear Friends,

While our building here in northern Manhattan is located far from the remote Afghan village of Gewi, war correspondent Carmen Gentile's journey took him from that village, to Landstuhl hospital in Germany, to the halls of the Harkness Eye Institute. Having sustained a devastating eye injury after being hit by a rocket-propelled grenade while following U.S. forces in Afghanistan—a grenade that fortunately failed to detonate—Gentile was treated by some of Columbia's finest surgeons in an attempt to restore his vision. The extraordinary story of the battle to save Gentile's sight leads off this edition of the *Viewpoint*.

In this issue, we also feature an in-depth look at how collagen cross-linking is being used at Columbia to treat keratoconus through an experimental protocol that the FDA has only authorized at a handful of institutions in the nation.

The Department has recently bid farewell to two of our most august leaders, Professor John Wilson Espy, M.D. and Professor Myles M. Behrens, M.D., both of whom retired this year. For decades, they have exemplified the best of their profession, and their colleagues and patients alike will miss their presence here. However, rather than being saddened by their departures, in this issue we celebrate all that they have brought to Columbia. We feature an article about the awarding of the Espy Professorship to an exemplary recipient, Gaetano Barile, M.D. We also highlight the extraordinary neuro-ophthalmology career of Dr. Behrens in a fond retrospective.



Charles Manley

As there can be no endings without new beginnings, we are delighted to welcome four new Fellows to our service. In this issue we introduce you to them, their accomplishments, and the paths that have brought them to Columbia.

This year also marked another new beginning: the inaugural Residents' and Fellows' Graduation and Party, focused on celebrating the achievements of our departing residents and fellows. New comic talents and actors were discovered at this joyful event—you'll find out more in the pages to come.

Finally, we are delighted and honored that the Department of Ophthalmology has been named the recipient of a multi-million dollar bequest from the estate of Hearst publishing executive Richard Deems and his wife Jean. I had the pleasure of caring for Mr. Deems, and his loyalty and generosity in return are humbling.

As I have already announced, I plan to step down from my position as Chair of the Department and look forward to focusing my energies on clinical and research activities. While the search for my successor continues, I will guide Columbia Ophthalmology with the same dedication that you have come to rely on until the appropriate individual is appointed to fill this essential post. I am determined to hand over a strong and productive program to the next Chair.

With all best wishes,

A handwritten signature in blue ink that reads "Stanley Chang". The signature is fluid and cursive, with a large, sweeping flourish at the end.

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

Gaetano Barile, M.D. Named to Espy Professorship *continued from page 1*

I sent her a copy of proposals for use of the funds. She called me back and asked if a donation could be named," he recalls. "I told her I thought it could be, and I never heard another word about it until Christmas Eve. At that time they presented me with a card detailing the named professorship. I was just overwhelmed by their generosity."

The Espy professorship could not officially be filled until Dr. Espy retired, a step he took earlier this year. Dr. Barile was then named to the position, which he calls a tremendous honor. "John didn't just treat eye diseases, he treated the entire patient—generations of patients, in fact, because of his longevity," Dr. Barile says. "And he never lost his skills. We all spoke at the dinner about how it would be a difficult transition for him to leave his practice and patients, because he enjoyed those interactions so much."

Dr. Barile adds that Dr. Espy's wide-ranging acumen stands out even in a very knowledgeable field of practitioners. "Usually ophthalmologists will call me, as a retinal specialist, and tell me that a patient is having retinal symptoms and that they see some findings that suggest the risk of a retinal tear or detachment," he notes. "But

the difference with John is that he would pick up the phone and tell me where the tear was, or the extent of the detachment. He had accurately made the diagnosis, and it was my job to focus on treatment. His clinical examination skills are on the order of a retinal specialist—and that's just my field, not to speak of his grasp of glaucoma, corneal disease, hard contact lens fitting, and so many other areas where he had substantial respect from those specialists as well."

Dr. Espy enthusiastically returns the praise. "Over the years I've referred a tremendous number of patients to him," he says. "I've become very dependent on both his expertise and his manner, because he is a very kind and very dedicated physician. In fact, when I had a couple of retinal problems of my own, I went to him."

Since his retirement, Mrs. Schorr says the impact of her father's career has been brought home to her even more powerfully. "For awhile, I would get stopped on the street daily by patients

distraught to learn that my father was retiring," she relates. "That's part of the reason why my father so strongly promotes the support of the next generation of doctors. We've had such outstanding professionals in this generation, and it's so important to continue that legacy."

Dr. Barile has several key goals for his professorship. "I hope to always ensure that the Eye Institute maintains optimal clinical care, because that's the bedrock of our other efforts," he says. "You can't have good research and good teaching unless you take excellent care of people. I hope to be able to do clinical research less encumbered by administrative tasks and to engage in more mentoring. The greatest gift we can impart to the next generation, I believe, is to teach them how to take care of patients—not just about

diseases, but about professionalism of the kind that Dr. Espy exemplifies." ■



L to R: Paul Carl "Chip" Schorr IV, Burwell Schorr, and Peter Espy.

Science Insight:

Collagen Cross-Linking: Strength Training for Diseased Corneas

Familiar street signs become increasingly difficult to read.

Headlights on the highway emit trailing streaks.

Double images appear behind objects during daylight hours.

These are a few of the symptoms of keratoconus, a progressive eye disorder that, unlike many other eye diseases, usually strikes in adolescence and young adulthood. It is estimated that about one out of every 2,000 people in the general population will develop keratoconus, which occurs when the normal rounded dome of the cornea begins to thin and protrudes, ultimately forming a cone-like bulge.

At first, the increasing myopia and astigmatism can be corrected with glasses or soft contact lenses. As the disease progresses, the corneal surface becomes more irregular and keratoconus patients require rigid, gas-permeable contact lenses to achieve useful vision. These rigid lenses compensate for the surface irregularity but are uncomfortable and are

not tolerated by most patients.

When keratoconus becomes severe, the cornea becomes thin and irregular with the development of central scars. At this stage the only treatment is a corneal transplant. Until recently, there has been no known nonsurgical treatment for keratoconus.

But patients with keratoconus who come to Columbia University Medical Center today have hope that their disease can be stabilized, and in some cases even reversed, using a technique called collagen cross-linking.

Cross-linking in tissue has been performed for years—it's called making leather. "Cross-linking is a way of preserving tissue and making it stiffer," explains Stephen Trokel, M.D., Professor of Ophthalmology. "But about ten years ago, a German ophthalmologist named Theodore Seiler [M.D., Ph.D.] did something in the living eye that had previously only been achieved in dead tissue: he changed the physical characteristics of living corneal tissue by a technique known as photochemically induced collagen cross-linking."

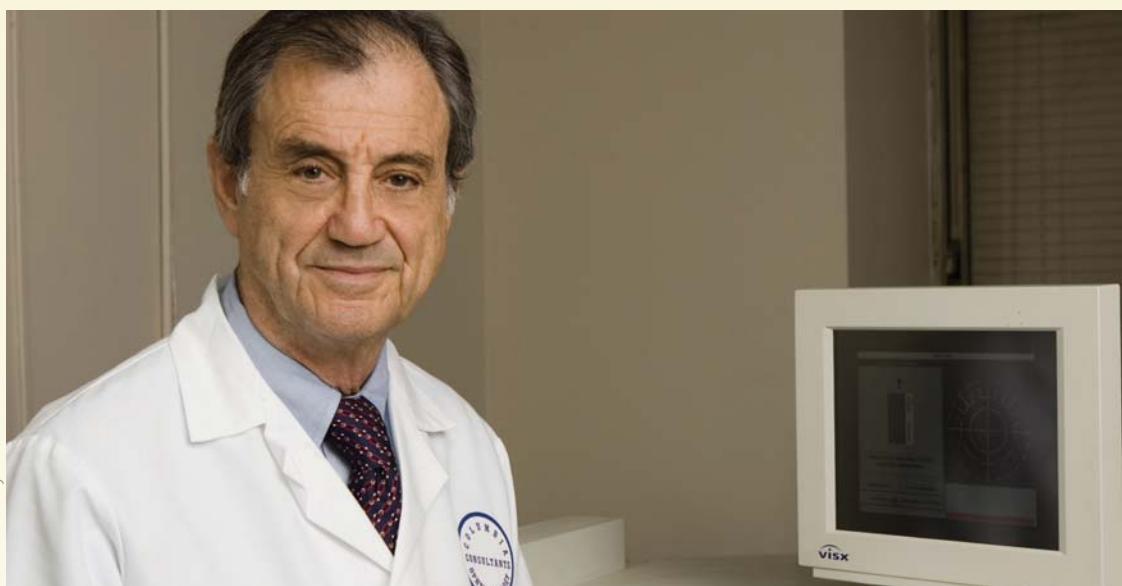
Dr. Seiler developed the idea while at the dentist's office. "The dentist shone some light on a gooey plastic in an inlay, to photochemically stiffen it," Trokel explains. "Dr. Seiler thought, 'If I can stiffen plastic in the mouth, why can't I stiffen the cornea in the eye?'"

The technique Dr. Seiler developed is surprisingly simple. The layer of cells that covers and protects the cornea is removed and riboflavin drops (vitamin B2) are placed on the cornea to saturate its structure. Then the eye is exposed to

UVA light over the course of about 30 minutes. It is believed that the photochemically activated riboflavin

increases the bond between the collagen fibers, linking adjacent strands of collagen and stiffening the cornea. The cornea is made more compact, slightly thinner and much stronger.

Cross-linking stabilizes the cornea in almost all patients. If a patient is seen as soon as keratoconus appears, in late adolescence or the early 20s, cross-linking can be performed early in life, yielding improved outcomes. Dr. Trokel comments, "In roughly 40% of cases, there is an improvement in the curvature of the cornea and best corrected visual acuity. But what we're



Stephen Trokel, M.D.

really trying to do is prevent the relentless progression of this disease to the point where the only possible treatment is corneal transplantation."

Over the past several years, Dr. Trokel and his colleagues, including Richard Braunstein, M.D., the Miranda Wong Tang Professor of Clinical Ophthalmology, and Amilia Schrier, M.D., Clinical Professor of Ophthalmology, have treated about 40 patients using collagen cross-linking, as part of experimental research protocols. The technique is not yet approved by the FDA and is available only at a limited number of sites nationwide. In addition to the clinical trial, the Columbia team has been authorized to treat patients under a "compassionate use" protocol that allows patients who are not actually part of the study to receive collagen cross-linking.

Dr. Trokel predicts that the technique will receive FDA approval some time during 2012 and notes that the technique has several other uses. The second major clinical indication is the stabilization of the very small percentage of LASIK patients that regress and develop astigmatism because their corneas have been weakened during the procedure. The third indication receiving increased attention is the treatment of corneal infections that are resistant to conventional therapies. Corneal infections form local ulcers that weaken the cornea and form scars. Photoactivated riboflavin has been shown to kill microbial organisms, inactivate destructive enzymes and at the same time strengthen the cornea.

Dr. Trokel believes that Columbia is the only center in the nation that is currently studying collagen cross-linking as a treatment for bullous keratopathy, in which small vesicles (bullae) form in the cornea due to endothelial dysfunction, causing a buildup of fluid, swelling and vision disruption. "Cross-linking stiffens the cornea and reduces the flow of water, ultimately reducing the bullae," he explains. "The diversity of ways in which we're making this therapy available to patients at Columbia is unique in the nation."

BOARD OF ADVISORS

Department of Ophthalmology

Louis V. Gerstner, Jr., Chairman

William Acquavella

Rand Araskog

Dr. Endré Balazs

Debra Black

Shirlee and Bernard Brown

Robert L. Burch III

Howard L. Clark, Jr.

Abraham E. Cohen

Joseph C. Connors

E. Virgil Conway

Alan K. Docter

Gloria and Louis Flanzer

Leslie Hinton

Joel Hoffman

T. C. Hsu

Florence and Herbert Irving

Helen Kimmel

Dr. Henry Kissinger

Ambassador John L. Loeb, Jr.

John Manice

Bjorg and Stephen Ollendorff

Homer McK. Rees

John Robinson

Patricia Rosenwald

Stephen Ross

James Shinn

William Spier

Miranda Wong Tang

David Tobey

Richard Woolworth

Dukes Wooters

IN MEMORIAM

Dorothy Eweson

Martin S. Kimmel

Seymour Milstein

Candace VanAlen

MEDICAL ADVISORS

Rando Allikmets, Ph.D.

James Auran, M.D.

Gaetano Barile, M.D.

Richard Braunstein, M.D.

Stanley Chang, M.D.

John Espy, M.D.

John Flynn, M.D.

William Schiff, M.D.

Scott D. Smith, M.D.

Harold Spalter, M.D.

Janet Sparrow, Ph.D.

Abraham Spector, Ph.D.

Stephen Trokel, M.D.

VIEWPOINT

Editor-in-Chief

Jane E. Heffner

Writing

Gina Shaw/Vagabond Media

Graphic Design

David Sakla

Photography

Charles E. Manley

End of an Era:

Myles Behrens, M.D. to Retire from Columbia

Neuro-ophthalmology Co-Chief Myles M. Behrens, M.D. could easily be reached at any given moment, even in the days before cell phones. The meticulous and dedicated clinician, whose career at Columbia began in medical school 53 years ago, had long since learned where all the phones were on the campus. “We used to joke that he would tell his secretary, ‘I’m going to be passing by the elevator bank on the 5th floor of Presbyterian Hospital at 12:02 pm, and here’s the number if you need to reach me,’” recalls Jeffrey G. Odel, M.D., Associate Clinical Professor of Ophthalmology, once a fellow of Dr. Behrens and for 26 years his associate in practice and Co-Chief of the neuro-ophthalmology service.



Myles M. Behrens, M.D.

Charles Manley

That anecdote seems to sum up the respected neuro-ophthalmologist with endless devotion to his patients, 365 days a year, 24 hours a day. Dr. Behrens is remembered for never being off call and for his encyclopedic mind with perfect recall. Now that he is retiring this year, the clinicians, scientists, hospital staff and patients who have worked with him over the years agree that the field will be lucky to see a doctor like Myles Behrens again.

A lifelong New Yorker and son of an ophthalmologist, Dr. Behrens grew up in Brooklyn idolizing his father, who died when he was 14 years old. Dr. Behrens’ father had graduated from the City College of New York in 1925 and was voted best student, most brilliant, most respected, and most likely to succeed. Then, he went on to the College of Physicians & Surgeons at Columbia University (P&S), so admission to that school became Dr. Behrens’ driving ambition.

Dr. Behrens had an inside track as a “legacy,” but even without his Columbia connections, his brilliant record as an undergraduate at Yale, majoring in English, would easily have earned him a place in the entering class. At P&S, he blazed a remarkable path. “I wanted to learn

everything I could. I was a driven student and graduated first in my class,” he recalls.

Although his father had been an ophthalmologist, Dr. Behrens initially pursued internal medicine, P&S being renowned in the field.

Early in his medicine residency, he recognized that ophthalmology was a better fit for him. With characteristic thoroughness, he continued the medicine residency while at the same time applying for the residency in ophthalmology.

Dr. Behrens’ decision to pursue his lifelong subspecialty, neuro-ophthalmology, came about almost by accident. “I was not particularly surgically inclined and had an interest in medicine,” he says. “But just as I was completing my

residency, our neuro-ophthalmologist went to Detroit. The Department Chairman, A. Gerard DeVoe, M.D., asked me to replace him.”

He advised training for the complex subspecialty with a yearlong fellowship in San Francisco, under the eminent William F. Hoyt, M.D., one of the pioneers in the field, who had developed a world-renowned unit in neuro-ophthalmology at the University of California, San Francisco.

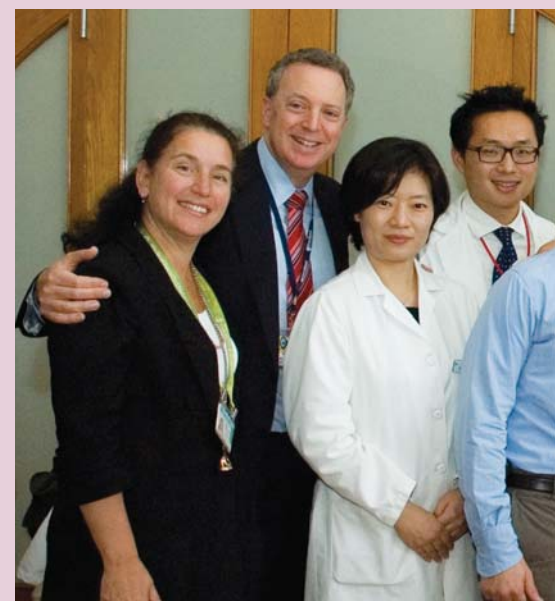
But it wasn’t as easy as just writing to Dr. Hoyt and asking to be admitted as a fellow. “He had six fellows scheduled that year, and he couldn’t take on another,” Dr. Behrens says. “Dr. Hoyt wrote a letter to Irene Loewenfeld, Ph.D., world authority on the pupil, who had long been a professor at the Harkness Eye Institute. Dr. Hoyt trusted her opinion, and fortunately for me, I had become close to her as a medical student. Irene put in a good word for me and I was accepted.”

When Dr. Behrens arrived in San Francisco, the rigorous Dr. Hoyt loaded him down with a copy of *Clinical Neuro-Ophthalmology*, the three-volume, nearly 3,000 page, compendium he had authored with Frank Walsh, M.D., founder of the specialty. Having consumed the first volume, Dr. Behrens began seeing patients with Dr. Hoyt. He rapidly became Dr. Hoyt’s



Top photo, L to R: Stanley Chang, M.D. with retina fellows, Ketan Loud, M.D. on his right and Quan “Donny” Hoang, M.D., Ph.D. on his left.

Above: Bryan J. Winn, M.D. giving the diploma to Vinod Voleti, M.D., Chief Resident.



favorite—and Dr. Hoyt was a tough character to please. “Whenever Dr. Hoyt would be at a national or international meeting, he would make his way to sit beside Dr. Behrens,” says Dr. Odel.

At the end of his fellowship year with Dr. Hoyt, he suggested that Dr. Behrens travel to London for a three-month stint at what is now the University College London Institute of Neurology, Queen Square, which he calls “probably the best neurology hospital in the world, with a former outstanding fellow, Michael Sanders and Alan Bird.” He then returned to Columbia to start his neuro-ophthalmology clinic and his own fellowship program.

“I tried to emulate Dr. Hoyt’s wonderful example,” he says. “Every morning, we would have rounds and see patients. In the Wednesday morning neuro-ophthalmology clinic I would usually start by seeing follow-up patients, while the fellows and residents would see one or two new patients. Then, we would all go to see and discuss each patient.”

First Annual Residents' and Fellows' Day Honors Graduates, Faculty

When Bryan J. Winn, M.D., Assistant Professor of Clinical Ophthalmology and Associate Residency Program Director, came to Columbia, he saw an opportunity. At the University of California-San Francisco, where Dr. Winn completed his residency, the Department of Ophthalmology held a formal ceremony to mark the residents' and fellows' graduation. Dr. Winn reflects that the tradition was one of the best times of the year and well worth introducing at Columbia.

On June 23 of this year, the Department of Ophthalmology held its first annual Residents' and Fellows' Graduation and Party. Richard Braunstein, M.D., Miranda Wong Tang Professor of Clinical Ophthalmology, who has directed the residency program for the prior 12 years, gave the graduation address, speaking to the residents, fellows, and faculty about how the program, specifically, and the ophthalmology residency, in general, have changed over the years. He then presented graduating residents with diplomas along with a Columbia University chair and the fellows with certificates.

Additionally, Dr. Winn and Jason Horowitz, M.D., Assistant Professor of Clinical Ophthalmology, were honored as recipients of teaching awards, which were presented by chief resident Vinod Voleti, M.D. "We devote a lot of time to thinking about resident education and teaching them how to be expert clinicians and surgeons. So this award is essentially the highest honor we can get," Dr. Winn enthuses. "It affirms that all the hard work we're doing is not going unnoticed."

The event also included some more lighthearted touches, most notably a resident and faculty roast. "We roasted the residents, and then they roasted each other and the faculty in a video presentation that they made," laughs Dr. Winn. "No one's ego was shattered—it lightened the atmosphere and gave everybody a chance to appreciate what the residents do with us and for us throughout the year."

The highlight, Dr. Winn says, was resident impersonations of faculty members. "We got to see a lot of comic skills and some previously unrecognized acting abilities! And as faculty, I think it's a good idea for us to laugh at ourselves once in a while."

But the main point of the day was to foster a sense of unity and community. Dr. Winn explains that a graduation ceremony helps to solidify relationships to an alma mater and is a good step in building an alumni relations program here at Columbia. ■



Glaucoma fellow, Melissa Yao, M.D. with Jason Horowitz, M.D.



Anu Gupta, M.D., cornea fellow in the middle surrounded by cornea specialists, L to R: Stephen Trokel, M.D., Amilia Schrier, M.D., Richard Braunstein, M.D., and James D. Auran, M.D.



L to R: Amilia Schrier, M.D., Richard Braunstein, M.D., SongEun Lee, M.D., Royce W.S. Chen, M.D., Frank Siringo, M.D., Alexandra Braunstein, M.D., Vinod Vineti, M.D., Rony Gelman, M.D., Brian J. Song, M.D., Mary Whitman, M.D., Bryan J. Winn, M.D., and Stanley Chang, M.D.

Over the years, Dr. Behrens trained many of the field's leading specialists, including Christian Wertenbaker, M.D., Director of Neuro-ophthalmology at Montefiore Hospital; Mark Kupersmith, M.D., at St. Luke's-Roosevelt Hospital as well as New York Eye and Ear; and Jacqueline Leavitt, M.D., who now heads the program at the Mayo Clinic.

"Just as he has been accessible to his patients over the past 40 years, Dr. Behrens has always been available to his fellows," recalls Jacqueline Winterkorn, M.D., Ph.D., the head of the neuro-ophthalmology service at Weill Cornell. "He has been a figure of paternal warmth, and has always defended his fellows and fought for them," she says. "I could always call him about a patient I was seeing, and I still do that even now."



Charles Manley

Jeffrey G. Odel, M.D.

Dr. Winterkorn has tried to base her practice on what she calls "the Behrens model." "I first take a long, extensive history. I then examine the patient, and the examination is a testing of hypotheses based on the differential diagnoses that I develop while taking the history," she explains. "I reach conclusions and do every test necessary to support those conclusions. Then I talk to the patient, telling him what I think is going on, and dictate a two- or three-page letter detailing my findings. That's hard to do in less than an hour and a half."

That meticulous devotion to each patient and each case is becoming a thing of the past under the time pressures of modern medicine.

"Even others who claim to specialize in neuro-ophthalmology full time never did it as full time

as he did," says Dr. Odel. "His extraordinary attention to patients is unequalled."

Now that he's ready to retire, where does Dr. Behrens plan to direct that fierce focus and drive? "I don't know, but it will not likely have to do with medicine!" For decades, he's pursued an eclectic array of scholarly interests with studies in other fields—from an art history major at Columbia's undergraduate school, to music studies at Juilliard and Talmudic inquiry at the Yeshiva of the Telshe Alumni in Riverdale, NY. Now, he's looking forward to further exploration of these and other interests.

"But the Department will feel his departure keenly," Dr. Odel says. "I've been talking to old-timers around the medical center and they all feel a great loss. He has great scholarly powers and has been a great teacher and doctor, very caring to his patients, a credit to his profession and to Columbia." ■

Young Talent

Retinal fellow **Quan "Donny" Hoang, M.D., Ph.D.** has always been a skilled problem solver, drawn to figuring out how things work.

During his undergraduate years at Northwestern University in Evanston, IL, Dr. Hoang entered an honors science program designed to prepare students for graduate school. For his sophomore-junior year research project his program director, who was involved in visual neurosciences and bioengineering, helped Dr. Hoang launch a project using electron microscopy to examine monkey and human photoreceptors. The project uncovered an additional role for mitochondria—bending light and having an optical wave guiding property.

That research project marked the beginning of Hoang's growing fascination with the eye. After completing a triple B.A. degree with honors (Chemistry, Integrated Science Honors Program, and Biology), he decided to pursue an M.D./Ph.D. degree at the University of Illinois in Chicago. In medical school and for his Ph.D. thesis—which received the University's 2006 top thesis award in the life sciences—Dr. Hoang focused on neuroscience, rather than ophthalmology. "About the time I began medical school, they had just discovered a pair of novel proteins, orexins, that, when insufficient, led to narcolepsy," he says. "I grew brain neurons, manipulated molecular structures and DNA, and measured electrical current to try to figure out at the single-channel and single-neuron level why narcolepsy happens."

After defending his Ph.D. thesis, Dr. Hoang was about to return to complete the rest of his medical degree, when his thesis advisor, Yasuko Nakajima, M.D., Ph.D., inquired about his plans for the future. Dr. Nakajima, an ophthalmologist herself, thought the field would be a good fit for Dr. Hoang.

Fortunately for Dr. Hoang, one of his thesis committee members was a retinal electrophysiologist, so in his last two years of medical school he began pursuing research in ophthalmology. Ironically, Dr. Hoang's project entailed measuring the same electrical currents he had previously researched—but now, in the retinal pigment epithelium. Continuing his research during his residency in ophthalmology at the University of Illinois Eye and Ear Infirmary, Dr. Hoang ultimately earned the Chicago Ophthalmological Society's prestigious Beem Fisher Award in 2009, as well as the 2010 Illinois Eye and Ear Infirmary Top Resident Research Award.

When it came time to choose a fellowship, Dr. Hoang's path was obvious. "Having focused so intensely on the retina, which is such a beautiful part of the eye, I was drawn to Columbia's unique program and world-renowned faculty," he remarks. "This was a place where I knew I could learn surgery and clinical aspects of the retina, as well as explore basic and clinical science."

His current research as a retinal fellow focuses on extreme myopia. "Patients with this condition have eyes that tend to be longer than normal, and

as they continue to elongate they form small outpouchings called staphyloma," he explains. "These patients tend to have weakness in the eye walls, which causes the outpouchings. I am collaborating with wonderful mentors to obtain MRIs and ultrasounds of the eyes in these patients as well as in rabbits, and injecting different chemicals to strengthen the sclera in the rabbit eye wall through cross-linking."

Dr. Hoang envisions a future at Columbia. "I would like to practice in an academic setting, where I can be in the lab a few days and the clinic a few days. There are not many places where people seem to be able to pull that off, but Columbia is one of them."

Corneal fellow **Jennifer Hung, M.D.** never anticipated a career in ophthalmology. Her initial goal was to go into business, having majored in politics, philosophy, and economics at Pomona College, a small liberal arts school in California. "I think I was a little bit in denial," she says. Though she had always been involved in health care through volunteering with the Red Cross and other medical organizations, Dr. Hung thought business was a more practical career path. After interning at a brokerage firm, Dr. Hung explains, "I really wasn't excited by the work. I had an epiphany that I wanted to go into medicine. I realized I was much more fulfilled when I was helping people."

Fascinated by population health, Dr. Hung first pursued a master of public health degree at the Mailman School at Columbia University Medical Center. Dr. Hung's goal was to "serve people broadly, not just one individual at a time." Public health, she figured, would be one avenue to effect change on a greater level.

While at medical school at the University of Southern California, Dr. Hung intended to specialize in internal medicine, until she discovered her passion for the operating room (OR). "At the end of my third year, I was shadowing an ophthalmologist and spent a lot of time in the OR. I loved it. I never imagined that I would be someone who wanted to perform surgery!" she laughs.

Working closely with an ophthalmologist led Dr. Hung toward her future specialty. "When you go through medical school, you get so little exposure to the eye," she says. "You don't realize how many diseases, beyond just diabetes and hypertension, are manifest in the eye, allowing the ophthalmologist to diagnose these diseases sometimes even sooner than an internist can. It's one of the smallest organs in the body, yet so complex and with so many levels."

Dr. Hung chose an ophthalmology residency at the University of South Carolina. She later realized what a fortunate choice it had been. There, she was influenced by many people whom she considers both mentors and friends. "The education I received and the relationships I developed with the physicians, especially the Department Chairman, Edward Cheeseman, M.D. and my cornea attending, Kristiana Neff, M.D., have shaped my professional career and development," she says. As a resident, she gained experience with corneal surgeries such as Descemet's stripping endothelial keroplasty, and had the opportunity to perform many cataract surgeries including toric IOL implantation.

Dr. Hung loves the buzz of scholarly activity at Columbia. "I'm definitely pursuing a career in academic medicine. I enjoy the involvement I have with the residents here. My dream would be to specialize in both cataract and corneal surgery, including corneal transplantation," she says. "I'm really excited by the new, disease-specific surgeries we can undertake now, operating not just on the whole cornea but a layer or a part of it."

Having spent time in Ghana with the National Student Medical Association during medical school, Dr. Hung hopes to spend more time overseas as a practicing clinician. "I've been looking for a way to get involved with Project ORBIS, the flying eye hospital that treats blindness around the world," she says. At ORBIS, she could perform cataract surgeries in developing countries. She has been accepted as a volunteer with Unite for Sight, an international program supporting eye clinics in the developing world. "Once my fellowship is over, I am hoping to go to India for awhile and perform cataract procedures there. International health is a passion of mine, which I hope to incorporate into my future career."

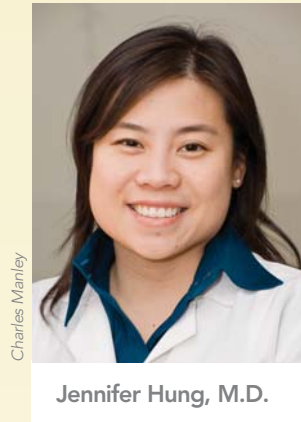
Glaucoma fellow **Michelle Pham, M.D.** found her passion for science early, after her chemistry teacher at Woodrow Wilson High School in Camden, NJ, steered her toward an after-school program that provided tutoring in science and medicine. While in college at the University of Pennsylvania, Dr. Pham became interested in medicine. "I loved surgery in particular, because of the instant gratification you feel seeing a patient benefit from the procedure you've just performed," she explains.

She attended medical school at the University of Medicine and Dentistry of New Jersey (UMDNJ), where a third-year general surgery rotation cemented her decision to pursue a surgical specialty. After an elective in ophthalmology, Dr. Pham was drawn to the elegance of ophthalmic surgery. Working closely with her medical school mentor, Stuart Greene, M.D., Ph.D., and head of the New Jersey Vision Technology Center, Dr. Pham shadowed Dr. Greene's surgeries, worked with all his patients, and interacted with him directly through research.

During her second year of residency, she found an additional mentor, Robert D. Fechtner, M.D., the head of glaucoma programs who directs the Glaucoma Diagnostic Laboratory. Dr. Fechtner guided Dr. Pham through her subspecialty selection. Having learned so much clinically and surgically from him, she decided to pursue glaucoma.

Dr. Pham was a good friend of a previous UMDNJ resident, Scott Walsman, M.D., who had pursued a glaucoma fellowship at Columbia. "He told me that it was a great program, and through him I had the opportunity to meet the glaucoma faculty," she says. "They seemed like wonderful mentors, so I chose Columbia, and fortunately they chose me!"

After her fellowship, Dr. Pham foresees a mix of academic and private practice in her future. "I like interacting with residents and bouncing ideas off other faculty members, and I enjoy doing research because there are still so many



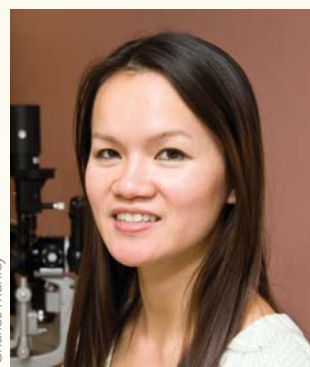
Charles Manley

Jennifer Hung, M.D.



Charles Manley

Quan "Donny" Hoang, M.D., Ph.D.



Charles Manley

Michelle Pham, M.D.

Team of Columbia Experts Restores War Correspondent's Sight *continued from page 1*

unanswered questions in science," she says. "But at the same time, I think I need the personalized schedule that private practice can offer."

The key to being a good glaucoma specialist, Dr. Pham has learned, is to be very patient with all the questions people have about the disease. "First and foremost, it's important that people understand their condition," she explains. Many of her patients confuse their diagnosis with cataracts or macular degeneration. She is always prepared to provide clear explanations, so patients learn more about their disease, as well as understand the services she is providing.

International retinal fellow **Gonzalo Sepulveda, M.D.**, the first member of his family to study medicine, decided on a medical career at the age of 16, when attending high school in his native country, Chile. In medical school at Pontificia Universidad Católica de Chile, Dr. Sepulveda found himself immediately drawn to surgery. Upon graduating with highest distinction, Dr. Sepulveda decided on ophthalmology.



Gonzalo Sepulveda, M.D.

Dr. Sepulveda's fascination with ophthalmology stems from its unique combination of concepts of optical physics, neurology, internal medicine, pediatrics, and surgery. "We serve patients of

all ages and genders, with a variety of eye diseases that threaten their vision, and offer them both medical and surgical therapies," Dr. Sepulveda marvels.

Dr. Sepulveda completed a residency in ophthalmology at Fundación Oftalmológica Los Andes, Universidad de Los Andes, in Santiago—also with highest distinction. He found tremendous opportunities for learning at such a highly respected academic institution. Not only did Dr. Sepulveda mature as medical doctor and an eye surgeon, but he was also entrusted to teach residents and to present at several national and international meetings, including American Academy of Ophthalmology's 2006 annual meeting in Las Vegas and 2009 annual meeting in San Francisco.

Dr. Sepulveda remained at Fundación Oftalmológica Los Andes for his retinal fellowship. "Retinal degenerations are vision-threatening diseases that will increase in the future," says Dr. Sepulveda of his decision to pursue the retina as a subspecialty. "For example, the increase in life expectancy and diabetes is associated with an increase in age-related macular degeneration and diabetic retinopathy, respectively. I also chose the retina because retinal surgery is a precise, delicate, and beautiful microsurgery."

After meeting Department Chair Stanley Chang, M.D. in Chile, Dr. Sepulveda knew where he wanted to serve his international fellowship. "It is an honor to have the opportunity to spend a year with Dr. Chang and his associates, and to learn their world-renowned approach to patient care with the best professional and technological resources available here at the Eye Institute."

In July 2012, after completing his fellowship, Dr. Sepulveda plans to return to Chile where he will take a position at his alma mater and apply his knowledge and clinical skills in the development of Chilean ophthalmology. ■

News medical correspondent John LaPook, M.D., Associate Professor of Clinical Medicine at Columbia, had been alerted to Gentile's injury. He went to work assembling a team of what Gentile now calls "the best doctors one could hope for."

Among the leading members of that team were retinal specialist William Schiff, M.D., Professor of Clinical Ophthalmology, and cataract expert James D. Auran, M.D., also Professor of Clinical Ophthalmology at Columbia.

Dr. Schiff still clearly recalls what he saw when he examined Gentile's eye in the office. "There was so much blood that we could not determine if there was a retinal detachment or not," he explains. "We typically examine the eye either by direct visualization using a light and a lens, or by ultrasound. We couldn't use direct visualization, because there was still so much blood."

Ultrasound revealed what Schiff calls a "disorganized" eye. "Things didn't look the way they typically look," he says. "In addition, Carmen had developed a cataract due to the trauma. His status was quite grave. Injuries like this usually do quite poorly, unless you're very lucky." Indeed, he told Gentile that had the same incident occurred ten years ago, he would have definitely lost the eye.

Luckily, there was still hope for Gentile to keep his eye, due to surgical techniques that have been developed over the last decade in large part as a result of injuries sustained in battle. No one expected he'd come out with normal vision, but there was hope that he wouldn't be entirely blind. "Dr. Schiff told me that there was a good chance I'd get much of my vision back, but he wanted me to be aware that it wouldn't be perfect," Gentile says.

The three-part operation, which lasted a total of about four hours, began with Dr. Auran removing the cataract from Gentile's eye. "Fortunately, the front part of the eye was in pretty good shape, which made it easier for Dr. Schiff to see in the back," he notes. "But it was still quite a traumatized, deranged eye, with a detached retina and a lot of blood beneath."

Then, Dr. Schiff took over. "The retina had become partially incarcerated—pulled back into the suture site where they attached the wound," he says. "There were multiple blood clots underneath and on the surface of the retina, which are difficult and tedious to remove because of the retina's fragility. You have to think on your feet, because with this kind of trauma, it's not cookie-cutter surgery where one thing follows the next."

After clearing the blood from the vitreous cavity and anterior chamber of the eye, and then around the retinal tear and underneath its surface, Dr. Schiff removed early scar tissue from the retinal surface to make it more mobile. Then, using perfluorocarbon liquid injections, he was able to flatten the retina and repair the tear.

Gentile's surgical journey continued, as his swollen head and shattered cheekbone had to be put back together—a particularly challenging task in light of the recent eye repair surgery. "Because the operation to save his eye was so delicate, any pressure that we would put on that eye while retracting to try to get to the bone could quickly increase the intraocular pressure and undo what the eye surgeons had done," explains Sidney Eisig,

D.D.S., George Guttman Professor of Clinical Craniofacial Surgery, Columbia University College of Dental Medicine.

Dr. Eisig reconstructed Gentile's right cheekbone, while Michael Kazim, M.D., Clinical Professor of Ophthalmology and Surgery at Columbia, operated on the bones of the eye socket and performed other facial reconstruction. Rather than making a new incision on Gentile's battered face, the two surgeons were able to enter through the existing laceration from his injury. This decision minimized the amount of facial scarring.

Unfortunately, some shattered bones had to be left unrepaired. According to Dr. Kazim, an attempt to repair certain fractured bones within the eye socket could have put enough pressure on the eye to rupture the sutures. Gentile would then have been faced with little chance at visual recovery as well as loss of all eye contents.

Following the surgeries, all Gentile could do was wait, rest, and heal. "I had to spend four weeks with my head down, in order for my retina to heal, a difficult task for a peripatetic war correspondent," he says. But Gentile followed Dr. Schiff's instructions to the letter. "For a month, I walked around, ate, and slept with my head down. I kept the faith that he knew what was best for me."

Although the eye had been repaired, Gentile couldn't really see out of it yet. "I could see colors and shapes, but the eye didn't really have a lens to focus images," he explains.

Then, in March, he returned to Columbia, where Dr. Auran implanted a new, permanent lens. "I was worried, because you never know what complications you're going to encounter," Dr. Auran says. "I had the fire trucks lined up at the end of the runway. But the scars released without bleeding and the lens implanted behind the iris just like it was supposed to. It all went very smoothly."

And then they asked Gentile what he could see. The result shocked everyone.

"Sure enough, the man sees close to 20-20. In a million years, I never would have expected that," Dr. Auran marvels. "It's a testament to Dr. Schiff more than anyone else. He's one of the best surgeons I've ever seen in my life."

In May, Gentile was cleared to return to work in the field, and within a couple of weeks, he had made his way back to Afghanistan. During the trip, he stopped at the Bagram hospital where he'd been treated to see the staff ophthalmologist for a checkup. "Of course, it wasn't the same doctor who had operated on me, but they all knew about my case and they just marveled at the work that had been done."

Dr. Auran returns the compliment. "A lot of the credit goes to the military hospital for the primary closure," he says. "In a lot of other hands, at any point of the process, he would have lost that eye or lost a lot of his vision, yet here he is walking around almost 20-20. You have to credit everyone involved."

"These guys are permanently on my Christmas card list," Gentile enthuses. "I had the who's who of Columbia taking care of me, and I wouldn't be where I am without them." ■

Department Receives Major Bequest from Deems Estate

In September 2006, Hearst publishing executive **Richard Deems**, then 93, lost vision in his right eye due to a vitreous hemorrhage. Already blind in his left eye because of a retinal detachment 25 years previously, the courtly man, still active with the Board of Directors of the Hearst Corporation, sought out the aid of the top retinal surgeon—Stanley Chang, M.D.

Dr. Chang restored Mr. Deems' sight, well enough for him to read *The New York Times*. The publishing executive never forgot the care he received at Columbia. He and his wife, Jean, supported the Department with a generous gift in January 2009, shortly before he passed away in May of that year. In August 2010, his wife died, and the Department was named in the couple's estate as the recipient of a multi-million dollar bequest. An unexpected gift of this size from a single benefactor is a rare and most welcome

surprise, one that will help significantly bolster the department's endowment.

Mr. Deems spent 83 years in publishing, starting at age 13 as an errand boy at the Staten Island Advance. Right after graduation from Staten Island's Curtis High School, he became owner and editor of Interstate News Service. In 1939, he joined the Hearst Corporation as a member of the sales staff for Harper's BAZAAR. By 1952, he had been named vice president in charge of advertising for all of Hearst's magazines; four years later, he was made President of Hearst Magazines, a role he held until 1978.

Known as "the editor's publisher," Mr. Deems recruited talented individuals who became some of the country's most prominent magazine editors, including Helen Gurley Brown, who in 1965 had an idea for a new magazine, entitled *Femme*. Mr. Deems liked her ideas, but felt they couldn't be sustained for 12 monthly issues per

year. When she rose to the challenge by producing ideas for two more issues over a single weekend, Mr. Deems hired her to revive a moribund Hearst title known as *Cosmopolitan*. Today, the domestic edition of *Cosmo* sells more than 2 million copies each month.

Mr. Deems was decorated with the Knight of the Order of St. Martin, and received the Henry Johnson Fisher Award as Publisher of the Year in 1979.

Dr. Chang comments, "Mr. Deems was highly respected, kind, and always a true gentleman whom I was fortunate to have met. His gentle character earned him many devoted friends." Jane Heffner, the Department's Director of Development, adds, "Mr. Deems helped to shape the modern publishing industry and give it vibrancy. The Department of Ophthalmology is extremely honored that he and his wife remembered us so generously." ■

Richard Deems

Charles Manley



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



COLUMBIA UNIVERSITY
MEDICAL CENTER

THE EDWARD S. HARKNESS EYE INSTITUTE AND
THE DEPARTMENT OF OPHTHALMOLOGY
635 WEST 165TH STREET
NEW YORK, NY 10032-3797

RETURN SERVICE REQUESTED

PRESORTED
FIRST CLASS MAIL
U.S. POSTAGE
PAID
WATERBURY, CT
PERMIT NO. 186