Why is the cornea of the eye free of blood vessels? This medical puzzle has intrigued physicians and scientists for centuries. The mystery was solved recently by a team of Massachusetts Eye and Ear Infirmary (MEEI) researchers led by Reza Dana, M.D., M.Sc., M.P.H. Not only does this critical discovery offer hope for preventing and curing blinding eye disease, this knowledge can also be applied to illnesses such as cancer, in which blood vessels grow abnormally and uncontrollably to feed the tumor. The findings were published in the July 25 issue of the prestigious journal The Proceedings of the National Academy of Sciences.

The cornea is the transparent, dome-shaped window that covers the front of the eye. Extremely sensitive, it is one of a few tissues in the body that is free of blood vessels; cartilage is another. The cornea is also a powerful refracting surface, continues on page 8 >>>

Since it was founded in 1824, the Massachusetts Eye and Ear Infirmary (MEEI) has conducted research to improve treatment for people all around the world. Examples of major advances include new drug treatments for age-related macular degeneration and devices for hearing screenings now received by most newborn infants in the United States. On June 14, MEEI celebrated the creation of three new programs, each a partnership between clinicians and research scientists, which will continue the tradition of bench-to-bedside treatment for patients. Initiated by the generosity, caring continues on page 12 >>>

High school hockey star Edward “Major” Bowen almost died after a small, undetected tumor caused spinal fluid to build up in his brain, resulting in a brain herniation. The ordeal left Major in a coma that his doctors feared would be permanent. Major stunned everyone by coming out of his coma and resuming many daily activities.

The pressure from the tumor, however, had left one side of Major’s face, from eye to jaw, completely paralyzed. Although Major continued to improve physically and mentally, the “facial droop” caused by the paralysis became increasingly worse. continues on page 4 >>>
Dear Friends,

After 17 years at the helm, I am stepping down at the end of the year. I want to tell you how much your friendship has meant to this great institution. Since I came on board, MEEI has grown in so many ways.

Eleven research labs have been expanded, renovated or created. Numerous new clinical services have been created, including a Pediatric Voice, Speech and Swallowing Center, a Laser Vision Correction Service, and Boston’s first Hyperbaric Medicine Service. The number of physicians on staff to care for those who need them most has grown exponentially; in otolaryngology alone, we have grown from fewer than 10 to 40 surgeons. Treatment options unheard of in 1990 are routine today. Philanthropic support has increased from $2.5 million to $12.5 million this fiscal year. And the momentum continues.

In this issue of Contact, you will read about some exciting new advances. You will be introduced to two new programs that incorporate both significant new patient care options and research: the Tinnitus Center and the Auditory Brainstem Implant Program.

You will learn how physicians in the Facial Nerve Center, who treat those with facial paralysis caused by Bell’s palsy, Lyme Disease, accidents and other conditions, put the smile back on one young man’s face. You will also read how the age-old mystery of why corneas are free of blood vessels has been solved and what these findings may mean to those suffering from blinding diseases.

Led by breakthroughs in technology and quantum leaps in science — the mapping of the human genome, dramatic discoveries in hair cell biology, stem cell biology, angiogenesis, and more, some of them pioneered at MEEI — patient care is being transformed year by year. And MEEI’s leadership is growing and expanding. I recently had lunch with a man who spent years traveling to see retina specialists all over the United States for his vision problem. “One of the most interesting things,” he told me, “is that most of the very top specialists, all across the country, trained at the Mass. Eye and Ear.”

Expect great things from our physicians, scientists and nurses. I hope you take great pride in partnering with them.

With appreciation,

F. Curtis Smith, President

Dr. Ivana Kim, retina specialist, addressed seniors at the Curley Community Center in South Boston as part of a national campaign called My Eye Health. Dr. Kim discussed age-related macular degeneration, the leading cause of blindness in people over the age of 60. The campaign is organized by Pfizer in collaboration with Prevent Blindness America and the Macular Degeneration Partnership. Dr. Kim participated as part of the Massachusetts Eye and Ear Infirmary’s community benefits program.
Friends Gala Sparkles with Success

Dancing with the Stars, the spring gala hosted by the Friends of Massachusetts Eye and Ear Infirmary (MEEI) in May, was the most successful to date. The dinner dance and auction raised more than $100,000, which will be used to support the research of Dr. Stacey Gray (sinus surgery) and Dr. Douglas Rhee (glaucoma) and a hearing research fund named in honor of Trustees Sol and Georgette Boucai, in recognition of Mrs. Boucai’s important contributions to the Friends and their work.

MEEI President F. Curtis Smith expressed his appreciation to those individuals who planned the event: Mrs. Boucai, Hilda Jabbour, Jane Denis, Carole Clarke, Caroline Rocco, Barbara Griffin, Ann Bland, Carol Covell, Mary Lee Culver, Evalynn Hajjar, Sandra Heath, Claire Miller, Ruth Nadol and Ruth Doyle. “The Friends have a long history of supporting initiatives that improve the lives of patients and help our researchers in their quest for cures for diseases,” Mr. Smith said. “The Friends are truly friends of this hospital.”

For information on joining the Friends of MEEI, please call 617-573-3164. In addition to the spring gala, the Friends sponsor other fundraising events throughout the year and are always seeking members.

Trustee Georgette Boucai (left) was instrumental in the success of Dancing with the Stars. She is pictured with Board member Paul Donahue and his wife, Ruth.

Friends gala committee members (from left to right) Caroline Rocco, Jane Denis and Ruth Nadol catch their breath before the dancing begins.

Dr. Douglas Rhee (center) is working to find the cure for glaucoma by understanding what causes the disease and finding genetic ways of making the drains of the eye function better. Proceeds from the gala supported his research efforts. He is pictured with his wife, Tina, and Dr. Louis Pasquale, fellow glaucoma specialist.

Dr. Stacey Gray is exploring a novel approach to enhance sinus surgical technique by use of simulators. Proceeds from the gala are supporting this effort. She attended the gala with her husband, Luther Gray.
“Major was unable to smile or speak clearly, and the corner of his mouth shifted to the middle of his front teeth,” said Major’s father, Bill Bowen. “His facial deterioration became so consuming that he indicated to me that he no longer wanted to live.” Mr. Bowen, who has dedicated his life to bringing Major back to “120 percent” of his pre-tumor state, set out to find the best treatment.

“We visited many doctors, but each time I knew that Major wouldn’t be satisfied with the surgical results,” Mr. Bowen said. Eventually, Mr. Bowen learned about the Facial Nerve Center at the Massachusetts Eye and Ear Infirmary (MEEI). After extensive testing Major underwent hours of delicate surgeries including complicated nerve and muscle transplants. This was followed by extensive physical therapy.

While Major still faces challenges, among them short-term memory loss, he is living life fully. Mr. Bowen says, “Major has entered college and is on the Dean’s list, and he has earned a black belt in Tae Kwon Do. He also has a nearly perfect smile on his face.”

The MEEI Facial Nerve Center

The Facial Nerve Center at MEEI, directed by Tessa A. Hadlock, M.D., treats facial nerve disorders, which typically involve facial paralysis. About 25 new patients visit the Center each month. They receive treatment from a multi-disciplinary team of renowned nerve disorder medical specialists, including neuro-otologists, facial plastic surgeons, ophthalmologists, plastic surgeons, audiologists, nurses and physical therapists.

“The deep experience within our practice enables us to deliver a level of care to facial nerve patients that is difficult to find outside this center,” said Dr. Hadlock. “We see hundreds of patients, which enables us to constantly build on our knowledge. We can quickly prioritize issues, and develop integrated treatment plans that emphasize patient quality of life.”

Dr. Hadlock joined MEEI in 1995 and completed four years of residency as well as a year of sub-specialty training in facial plastic and reconstructive surgery. At the Center, Dr. Hadlock works closely with Dr. Mack L. Cheney, MEEI’s director of the Facial Reconstructive Surgery Service.

The Center’s innovative treatment includes photo and video documentation of facial movement and electrophysiological testing of nerve function. The Center’s digital photography and videography capabilities enable a team-based assessment of patient needs.

Causes of Facial Paralysis

The facial nerve carries impulses from the brain to the facial muscles, which allows facial expression and movement. The nerve also activates tear and salivary glands, tiny ear muscles, and carries taste sensations from the tongue to the brain. When impulses to the facial nerve are interrupted, any or all of these functions may be affected. Facial nerve disorders often cause significant disfigurement and may severely impair function.

The most common cause of facial nerve disorders is Bell’s palsy, a rapid onset of facial paralysis on one side of the face. Many doctors believe that a virus such as herpes simplex virus (HSV) causes Bell’s palsy. That the disorder often responds to antiviral and anti-inflammatory medications further supports the theory. Another leading cause of facial paralysis is nerve damage resulting from the surgical removal of tumors. Facial nerve disorders can be inherited or occur during pregnancy or birth. Serious head injuries, ear disease, or infectious and inflammatory processes, such as Lyme Disease, multiple sclerosis and diabetes, are among other causes.

Facial paralysis typically affects one side of the face, but can affect both. Side effects include difficulties with speech and eating, facial asymmetry and drooling. Patients may also be unable to close one or both eyes. The physical effects of facial paralysis are devastating, but the emotional impact on patients and their families can be even more traumatic.

“Patients may lose the ability to communicate, both verbally and nonverbally, and common activities like eating at a restaurant become something to avoid,” says Dr. Hadlock. “So it is not unusual that the patient has severe feelings of isolation and depression.”
Upon arrival at MEEI’s Facial Nerve Center, new patients undergo a complete consultation along with a physical and neurological examination. Doctors electronically record facial function information. Patients may receive evaluation from radiology and audiology specialists.

Dr. Hadlock’s team typically considers a cross-section of three treatments: medical therapy, surgery and physical therapy. Medical therapy, which is often used to treat Bell’s palsy, includes the use of steroids, antiviral medications and botulinum therapy.

“Surgical options depend on the nature and severity of the disorder and must be carefully considered,” says Dr. Hadlock. “Doctors may try to reduce nerve inflammation and pressure, or if the nerve endings are cut, doctors will try to reconnect the endings. If the nerve is injured or parts of it lost, doctors might take a nerve graft from another part of the body to connect the nerve endings and restore facial function.”

In some cases, doctors may bring neurons into the facial nerve from a nearby nerve to restore facial movement. This approach, called reinnervation, requires cutting a different motor nerve, like that to the tongue or to the shoulder, which creates an entirely new motor problem.

Dr. Hadlock’s team rarely uses reinnervation. “This technique treats the entire face as one unit, which can cause speech impairment and other problems,” said Dr. Hadlock. “We divide the face into zones to correct problems locally, yet as part of the whole. This enables us to restore function in one area without affecting other functions of the face.”

After more than one year, paralyzed face muscles tend to undergo atrophy and scarring. If this occurs, Dr. Hadlock’s team may transfer muscle into the face from the head and neck, or from elsewhere in the body. Contraction of the newly transferred muscle imitates the native facial muscles to permit smiling, eye closure, and movement of the lower lip.

Techniques for Static/Still Features
In addition to preventing certain functions, facial nerve disorders can freeze features on the paralyzed side. A patient’s mouth may droop on one side, the nose might collapse, or the space between the upper and lower eyelids might widen, making one eyebrow lower than the other and causing the loss of the blink reflex. To correct these problems, Dr. Hadlock’s team works closely with patients to determine the best option. An eyebrow can be repositioned to match the other brow’s height, for example, during rehabilitation of a paralyzed eye; doctors can widen the nasal cavity using small cartilage grafts; or, “static sling” techniques can reposition corners of the mouth, without a muscle transfer.

After surgery, physical therapy is key in recovery. MEEI boasts one of the world’s most highly accredited physical therapists, Mara Robinson. “Although neuromuscular retraining can’t restore perfect function, it helps with facial muscle control and increases self-confidence,” says Dr. Hadlock. She added, “If a doctor stops with surgery, the patient’s quality of life may fall short.”

The Central Role of Research and Education
In keeping with MEEI’s strong commitment to research and education, the Facial Nerve Center engages in extensive laboratory and clinical research. This results in innovations in facial nerve grafting, muscle and nerve transfers and other areas central to treating facial nerve disorders. MEEI urges physicians to focus on reconstructive plastic surgery to treat complex problems like facial paralysis, ear deformities in children, and severe burns. Because these surgeries require extensive subspecialty training, MEEI is establishing a fellowship program to train new specialists.

Under this program, a physician who has completed general ENT residency training will spend up to two years in specialty training in facial nerve and reconstructive surgery, with a clinical or research component. The fellow will be exposed to the most complex and challenging cases, both in the MEEI operating room, and during MEEI humanitarian missions to repair pediatric deformities. Dr. Hadlock and Dr. Cheney travel annually to Ecuador to use reconstructive surgery to help children with microtia, a congenital ear deformity.

Mr. Bowen says, “We almost went down the wrong road in terms of surgery before discovering MEEI. Tessa Hadlock diagnosed my son accurately, which was crucial to developing the right treatment plan.”

He continued, “Dr. Hadlock, Dr. Cheney and their team literally wrote the book on this surgery. I believe that MEEI has done more of these procedures than anyone in the country, and they’ve perfected this surgery. They did a wonderful job! It’s an honest to God success story.”

For more information, contact the Development office at 617-573-3345.
Research Round-Up

Examination of the Larynx Essential in Management of Thyroid Cancer

MEEI physician Greg Randolph, M.D., FACS, in collaboration with MEEI research fellow Dipti Kamani, M.D., found that examination of the larynx (voice box) is essential in the management of thyroid cancer. The study compared a group of 21 patients with invasive thyroid malignancy that was selected from a group of 365 patients undergoing thyroidectomy and compared it to a larger group of 344 patients who had benign thyroid disease or non-invasive cancer.

In the group with invasive thyroid malignancy, the authors found that recurrent laryngeal nerve paralysis was a significant marker for this condition, occurring in 70 percent of patients with invasive disease and in only 3 percent of patients with non-invasive disease. Of these patients, voice change was associated with vocal cord paralysis in only one third and preoperative CT read positive for paralysis in only 25 percent. As voice assessment and radiographic evaluation are insufficient, the authors recommend laryngoscopic exam for patients undergoing thyroid surgery to detect the extent of the disease, allow for appropriate surgical planning and patient counseling, as well as accurate management of the recurrent laryngeal nerve during surgery. Damage to the recurrent laryngeal nerve during surgery can result in temporary or permanent voice problems, in addition to impacting swallowing and breathing. Monitoring this nerve during surgery can decrease the risk of these problems. This study was published in the March issue of the journal Surgery.

Type 2 Diabetes Associated With an Increased Risk of Glaucoma

A comprehensive 20-year study headed by Massachusetts Eye and Ear Infirmary (MEEI) staff has shown that type 2 diabetes is associated with primary open angle glaucoma (POAG), the most common form of glaucoma. Louis Pasquale, M.D., co-director of the Glaucoma Service at the MEEI and assistant professor of Ophthalmology at Harvard Medical School, was lead author of the paper that was published in the July issue of the journal Ophthalmology.

Dr. Pasquale and his collaborators observed more than 76,000 women over the age of 40 who were enrolled in the Nurses’ Health Study from 1980 to 2000. After controlling for a variety of factors, they found that type 2 diabetes was positively associated with POAG. However, the relation between type 2 diabetes and POAG did not increase with longer durations of type 2 diabetes. While obesity fuels the type 2 diabetes epidemic, it appears that factors unrelated to obesity contribute to the positive association between type 2 diabetes and glaucoma. The study suggests that all people with type 2 diabetes should be screened for glaucoma.

Glaucoma is a blinding disease in which premature deterioration of the optic nerve occurs. Early detection is critical. Left untreated, glaucoma can result in irreversible vision loss. According to the National Eye Institute, POAG accounts for 60 to 70 percent of all glaucomas and affects more than 2 million individuals in the United States. With the rapidly aging U.S. population, this number is predicted to increase to more than 3 million by 2020.

In addition to the important work they do every day, many Massachusetts Eye and Ear Infirmary (MEEI) employees also volunteer their time to worthy causes outside of the hospital. MEEI Grant Accountant Kristen Kirk helps coach the Boston Renegades, a competitive baseball team whose members are visually impaired. The Association of Blind Citizens sponsors the team, which was invited onto the field at Fenway Park this summer for the national anthem, in honor of Disability Awareness Night. In this photograph, Kristen is on the bottom row, fourth from the right, and behind the guide dog.
Smoking Increases Risk, Eating Fish Decreases Risk of AMD

Researchers in Boston lead by Johanna Seddon, M.D., director of the MEEI Epidemiology Unit and an associate professor of Ophthalmology at Harvard Medical School, studied elderly male twins and found that those who smoke or have a history of smoking had an increased risk of developing age-related macular degeneration (AMD) as compared to those who never smoked. At the same time, those who ate more fish and had diets with higher levels of omega-3 fatty acids reduced their risk of this blinding disease. Their findings were published in the July 2006 issue of the *Archives of Ophthalmology*.

The team studied 681 male twins from the National Academy of Sciences-National Research Council World War II Veteran Twin Registry. To determine genetic and environmental risk factors for AMD, twins were surveyed for a prior diagnosis of AMD and underwent an eye examination, fundus photography, and food frequency and risk factor questionnaires. The study included 222 twins with intermediate and late stage AMD and 459 twins with no signs of the disease. Current smokers were found to have a 1.9-fold increased risk of developing AMD, while past smokers had about a 1.7-fold increased risk. They also found that increased intake of fish reduced the risk of AMD, particularly if they ate two or more servings per week. Dietary omega-3 fatty intake was also inversely associated with AMD. This study of twins provides further evidence that cigarette smoking increases risk while fish consumption and omega-3 fatty acid intake reduce risk of AMD.

AMD is the leading cause of irreversible visual impairment and blindness among persons aged 60 and older. With the elderly population steadily growing, the burden related to this loss of visual function will increase. Limited treatment options exist and prevention remains the best approach for addressing this public health concern.

Smoking and High BMI Increase Genetic Risk of AMD

MEEI researchers reported for the first time that cigarette smoking and high body mass index (BMI) increase a person’s genetic susceptibility to developing age-related macular degeneration (AMD).

Lead author Johanna Seddon, M.D., in collaboration with the Channing Laboratory at Harvard Medical School, found that a BMI of 30 or higher was associated with a twofold increase in the risk of developing AMD, while current cigarette smoking increased the risk fivefold. These two modifiable risk factors are related to an even greater risk for those with a particular gene (the common coding variant in the complement factor H (CFH) gene, Y402H). The findings emphasize the importance of adhering to a healthy lifestyle, such as maintaining a normal weight, exercising and not smoking. Complete results of the study were published in the August issue of the journal *Human Heredity*.

Guys for Eyes Calendar Available

The 2007 Guys for Eyes Calendar, the proceeds of which will benefit retina research at the Massachusetts Eye and Ear Infirmary (MEEI), is on sale now for $15. Inspired by the outstanding care her mother received at MEEI, Suzi Reynolds created this calendar to support a cure for macular degeneration and other retinal diseases. This year’s calendar focuses on a diverse group of guys at all ages — from an architect to a high school teacher, a fireman, F16 fighter pilots, and not to mention Ernie Boch, Jr., an auto czar and marketing guru. The 2007 calendar with be double the fun for MEEI employees and patients alike, as Robert Hughes, M.D., chief of the MEEI Medical Unit, and Aaron Fay, M.D., MEEI oculoplastic surgeon, will be featured as Mr. May and Mr. October.

Order your 2007 calendar by contacting Suzi Reynolds at 617-899-1998 or by email at suzi@guys4eyes.org. Visit www.guys4eyes.org to place an online order or to learn about upcoming events to help fight retinal disease.
providing most of the eye’s focusing power. Comparable to a watch crystal, the cornea gives people a clear window to look through. The epithelium is the thin membrane covering the cornea. Without a clear cornea, vision is impaired.

“I noted in my clinical work that the epithelium that covers the cornea displays properties that suppress inflammation and angiogenesis [growth of blood vessels]. But we didn’t know the reasons why,” said Dr. Dana, head of the MEEI Cornea Service, a Senior Scientist at the Schepens Eye Research Institute and an Associate Professor of Ophthalmology at Harvard Medical School. “If there are blood vessels in the cornea, vision is impaired. Corneal blindness is a major cause of blindness worldwide, accounting for the second most common cause of blindness after cataract. Between 10 and 20 million people can be afflicted. Scarring from blood vessels is a very common problem in the cornea. We wanted to determine why the healthy cornea is free of blood vessels and why the epithelium can stop the growth of blood vessels.”

His research on corneal anti-angiogenesis began approximately four years ago using mouse models and human tissues. “Most of our work was done with mice because they are genetically identical,” he explained. “We also examined human tissue in the laboratory.”

According to Dr. Dana, the key to maintaining a blood-vessel free cornea is vascular endothelial growth factor receptor-3 (VEGFR-3), a protein that is naturally present in large amounts on a healthy corneal epithelium. “VEGFR-3 acts as a kind of ‘sink.’ This protein neutralizes the growth factors sent by the body to stimulate blood vessel growth,” he noted. “In most other tissues of the body, blood vessel growth occurs in response to a need for increased blood flow to heal an injured or infected area. The immune system sends in growth factors such as vascular endothelial growth factors (VEGF) to bind with a protein receptor called VEGFR-2 on blood vessels to trigger growth. Three forms of VEGF — A, C, and D — bind with this receptor. Two of them, C and D, also bind with VEGFR-3, which is usually found on cells lining lymphatic vessels and sprouting new blood vessels, to stimulate their growth.”

To test this theory Dr. Dana and his team conducted experiments using corneas with and without epithelial layers that were injured and discovered that the corneas without the layers developed
blood vessels. When a substitute for VEGFR-3 was added to corneas without epithelial layers, blood vessel growth continued to be suppressed. When intact corneas were exposed to an agent that blocked VEGFR-3, blood vessels began to grow, showing that the epithelial suppression of blood vessel growth was due to its high expression of VEGFR-3.

“These tests confirmed our belief that VEGFR-3, which is present in abundance on healthy corneal epithelium, is the major factor in preventing the formation and growth of blood vessels in the cornea,” said Dr. Dana. “One can surmise that the presence of VEGFR-3 in the cornea also prevents scarring and vascularization after LASIK surgery.”

He added, “By knowing how the cornea works normally or physiologically, we can understand what can interfere with it pathologically. We can apply our knowledge to the cornea, the retina, or to cancers in other parts of the body. Breast cancer is one example. Cancer cells need blood vessels to proliferate. If we can stop the blood vessel growth, we can potentially stop the cancer.”

Dr. Dana has been on the MEEI medical staff since 1994. He conducts research in his lab at the Schepens Eye Research Institute, treats an average of 50 to 60 patients a week with corneal and ocular inflammatory problems, and performs surgeries, primarily corneal and ocular surface transplantation. The Infirmary’s mission meshes with Dr. Dana’s reasons for entering the field of ophthalmology. “Science is profoundly important — the foundation of history,” he said. “Ophthalmology is a field where you can help and, sometimes, even cure people.”

He described the Infirmary’s environment as stimulating, because clinician-scientists are given the resources to conduct research, see patients, perform surgery, and apply new technologies that define the cutting edge of modern medicine. “In many other facilities, clinicians only get to see patients or perform research,” he said.

MEEI is also home to an Angiogenesis Laboratory, where a team of clinical researchers including Joan W. Miller, M.D., chief of ophthalmology at MEEI, and Evangelos S. Gragoudas, M.D., the director of the Retina Service at MEEI, are conducting experiments that complement Dr. Dana’s work. Dr. Dana’s collaborators include Claus Cursiefen, M.D., Lu Chen, M.D., Ph.D., Magali Saint-Geniez, Ph.D., Pedram Hamrah, M.D., Yiping Jin, M.D., Ph.D., Saadia Rashid, M.D., and the late J. Wayne Streilein, M.D., all from the Schepens Eye Research Institute; and Kris Persaud, Bronislaw Pytowski, and Yan Wu from ImClone Systems, Inc. in New York.

According to Dr. Dana, the next stage of his research will focus on developing drugs that use VEGFR-3 to heal corneas that have suffered trauma or help shrink tumors that are fed by the rapid growth of blood vessels. “After we have worked out the processes in the laboratory, we can then move to the clinic,” he said. “I’m confident that we’ll be able to restore the sight of many individuals or, even better, prevent the medical problems from developing in the first place.”

In addition to this avenue of investigation, Dr. Dana would like to establish a first-of-its-kind Ocular Surface Center at MEEI. One potential project would grow cells from the lining of a patient’s mouth and use them to reconstruct the corneas of patients for whom surgery is no longer an option. He explained, “This technique would help two types of patients. Individuals with two bad eyes would have a new and safe source of stem cells that could be used to reconstruct the corneal surface. These stem cells could also be used on patients with one bad eye and eliminate the risk of damage to the good eye during the harvesting process.”

To learn more about Dr. Dana’s work, please contact Melissa Paul at 617-573-4168.
The Massachusetts Eye and Ear Infirmary welcomes the following physicians who recently joined the hospital-based medical staff. To learn more about these physicians and other members of the medical staff, visit http://www.meei.harvard.edu/shared/staff/staff.php.

**OPHTHALMOLOGY**

**Dean M. Cestari, M.D.**, joined the Neuro-Ophthalmology Service in July. Dr. Cestari attended Sackler School of Medicine, Tel Aviv University, Israel. He completed residencies in neurology and ophthalmology at New York Presbyterian Hospital/Weill Cornell Medical College, NY, and a fellowship in neuro-ophthalmology at MEEI.

**Stacey Tutt Gray, M.D.**, joined the Otolaryngology staff last winter. Dr. Gray’s clinical interest is rhinology, the treatment of disorders of the nose and sinuses. She received her medical degree from Georgetown University School of Medicine, completed her residency in the Harvard Residency Program in Otolaryngology – Head and Neck Surgery, and completed a fellowship in rhinology and sinus surgery at MEEI.

**Alex Grilli, M.D.**, joined the South Suburban Center for Otolaryngology, Head and Neck Surgery, in Quincy, in May. Dr. Grilli diagnoses and treats diseases of the ear, nose, and throat. He received his medical degree and completed his residency at Tufts University School of Medicine.

**Adrian James Priesol, M.D., FRCPC**, was appointed as a Consultant in Otoneurology in March. Dr. Priesol’s clinical interest is in dizziness and balance disorders. He received his medical degree and completed his residency in adult neurology at the University of Toronto. He also completed a research fellowship in neuro-ophthalmology at the University of Toronto.

In September **Mary Lou Jackson, M.D.**, joined the staff as Director of Vision Rehabilitation. Dr. Jackson, a native of Toronto, Canada, completed her medical training at McMaster University, Ontario, and did her ophthalmology residency at the University of Toronto. After 12 years at Northwestern General Hospital in Toronto, she became affiliated with the Vancouver Island Health Authority in western Canada. Dr. Jackson is a world-renowned expert in the extremely specialized field of vision rehabilitation.

**Ula Jurkunas, M.D.**, joined the Cornea Service in July. A recipient of a Harvard Medical School Mentored Clinical Scientist Program Award, Dr. Jurkunas will do research at Schepens Eye Research Institute in addition to her clinical efforts. Dr. Jurkunas graduated from the University of Louisville School of Medicine and completed her cornea fellowship at MEEI.

**Lucia Sobrin, M.D.**, joined the Retina Service in July. A graduate of the University of Miami School of Medicine, Dr. Sobrin completed a retina fellowship at MEEI and continued with a fellowship in immunology/uveitis at the Massachusetts Eye Research & Surgery Institute, Cambridge, Mass. She will do research at MGH as part of her Harvard Medical School Mentored Clinical Scientist Program Award.

**OTOLARYNOLOGY**

**Ronald de Venecia, M.D., Ph.D.**, joined the Otolaryngology staff in July. After receiving his Ph.D. at the University of Arizona, Dr. de Venecia received his medical degree at the University of Maryland School of Medicine. After a surgical internship at the Brigham and Women’s Hospital, Dr. de Venecia completed his residency in the Harvard Combined Residency Program in Otolaryngology – Head and Neck Surgery. He recently completed a subspecialty fellowship in neurotology at MEEI. Dr. de Venecia will play a large role in both the clinical and research components of MEEI’s new Auditory Brainstem Implant Program.

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Michael Rho, M.D., joined the Otolaryngology staff last winter. Dr. Rho received his medical degree from the Albert Einstein College of Medicine in New York and completed his residency in the Harvard Residency Program in Otolaryngology – Head and Neck Surgery. He specializes in sinus surgery and allergy, voice disorders and laryngology, surgery of the ear, pediatric ear, nose, throat, head and neck surgery, and thyroid surgery. Dr. Rho’s office is located at the North Suburban Center in Stoneham.

Phillip Song, M.D., joined the Otolaryngology staff in June. Dr. Song specializes in laryngology, voice and swallowing disorders, specifically neurological disorders of the larynx and head and neck. He received his medical degree from Tufts University School of Medicine, completed his surgical internship and residency in otolaryngology at New York University Medical Center, and later completed a fellowship in laryngology at St. Luke’s Roosevelt Hospital Center in New York.

The Massachusetts Eye and Ear Infirmary’s (MEEI) fifth annual Founders’ Day luncheon took place on May 18 at the Fairmont Copley Plaza Hotel in Boston. Founders’ Day recognizes the Infirmary’s loyal and generous friends who have wholeheartedly committed to MEEI’s mission to be a world leader in treating people with hearing, vision, voice and balance problems and in finding better treatments through research.

Specifically, Founders’ Day honors the Infirmary’s Annie Sullivan Society and The 1824 Circle. Members of the Annie Sullivan Society have made the ultimate gift to the Infirmary by remembering MEEI in their wills or planned gifts. Membership in the Annie Sullivan Society has grown to 142 members since its inception six years ago. Members of The 1824 Circle generously contribute more than $12,500 unrestricted annually, understanding the vital role unrestricted support plays in MEEI’s success.

During the luncheon, renowned management consultant and author, Thomas A. Barocci, Ph.D., provided his perspective as a patient of MEEI’s Laryngology Service. As a frequent lecturer, the thought of permanently losing his voice was devastating. Thanks to the superlative efforts of Ramon Franco, M.D., and his team, Dr. Barocci is doing very well today and continues to lecture and consult. With humor and heartfelt praises, Dr. Barocci reflected on the exceptional care provided in every aspect of his MEEI experience.

For more information about The 1824 Circle or the Annie Sullivan Society, please contact Melissa Paul in the Development Office at 617-573-4168.

Members of the Annie Sullivan Society circulate before the luncheon. Pictured (l to r) are: Helen Desmond, Elinor O’Brien, Robert Lindstrom, Helen Lindstrom and Mary Taylor.

MEEI Trustee Christian Snook and his wife, Susan Stoddart, are members of the 1824 Circle.
and enthusiasm of Infirmary friends, these programs offer renewed hope to people with hearing disorders and help the Infirmary move closer to cures.

**The Eliasen Professorship**

Perhaps nothing could be more central to MEEI’s mission than the establishment of a professorship. The Gudrun Larsen Eliasen and Nels Kristian Eliasen Professorship of Otology and Laryngology, made possible by the generosity of Axel Eliasen and others, will help ensure MEEI’s continued leadership in improving patient care through research. The professorship is endowed in perpetuity through Harvard Medical School and will support an ongoing succession of senior researchers interested in the conditions that affect hearing.

“The mission of the Infirmary is not only to provide outstanding medical care, but also to perform research that will have an impact on a global level. I’ve seen how the research my mentors conducted has improved the quality of care provided to our patients. The establishment of this professorship will make sure this important research continues,” says Dr. Merchant, the first recipient of the Eliasen Professorship.

**The Auditory Brainstem Implant Program**

MEEI’s expertise and reputation for pioneering research may bring about another instrument of hope to those with hearing loss: an improved Auditory Brainstem Implant (ABI). It was Grant and Helene Wilson’s respect for the expertise of neurotologist Michael McKenna, M.D., that convinced them the ABI Research and Development program belongs at MEEI. The ABI program will consist of a multidisciplinary team, including audiologists, neurotologists, and hearing scientists who will provide clinical care to patients and perform research and development to discover ways to advance patient care.

Think of the ABI as a “bionic ear”—an electrical device that is surgically implanted in the brain and provides input to the auditory system for people without functioning auditory nerves. The device is FDA approved for those who have hearing loss as a result of neurofibromatosis, type II. The ABI program at MEEI is the first of its kind in the New England area.

According to neurotologist Ronald de Venecia, M.D., Ph.D., a principal investigator in the program, the current device has been able to restore hearing to patients with this condition, allowing those previously deaf to hear sounds in their environment, such as horns or doorbells.

Although the ABI has already produced positive results, co-investigator Christian Brown, Ph.D., believes that further research will improve the function of the device. Dr. Brown is studying the area of the brain stem called the cochlear nucleus, which is where the ABI is implanted.

Drs. de Venecia and Brown are working to develop a measurement system that would be used during surgery to better locate the cochlear nucleus, as well as to determine where on the cochlear nucleus to place the device to achieve the best results. This work should also allow for better adjustment of the ABI after implantation.
“Research to improve this device offers hope to thousands of people with hearing loss, and for whom cochlear implants are not an option,” says Dr. Brown.

The Tinnitus Center
Though it might seem that tinnitus or “ringing in the ears” is the result of an ear condition, research has shown that many people who experience tinnitus have no hearing problem. Conversely, about 20 percent of people with profound deafness have no tinnitus. In fact, many people develop tinnitus due to interactions between hearing and non-hearing regions of the brain.

Until now MEEI researchers have only been able to devote a limited amount of time to study this condition. Now the initiative of an anonymous Infirmary friend, Jack and Shelley Blais, and Ken Griffin, has made possible the formation of a Tinnitus Center for Research and Patient Care.

The Tinnitus Center, a collaboration between co-investigators Robert Levine, M.D., a neurologist, and Jennifer Melcher, Ph.D., an auditory neuroscientist, will allow full-time research on this problem, which affects about 10 percent of adults.

“Right now, there is not a uniform cure for people living with tinnitus,” says Dr. Melcher, who uses imaging to uncover abnormalities in the brains of people who suffer from tinnitus. “By imaging people’s brain activity patterns, we hope to differentiate different types of tinnitus and identify treatments based on the activity patterns.”

Dr. Levine, who has devoted much of his career to better understanding tinnitus and recently discovered a cure for a specific type of the disease, called “Typewriter Tinnitus,” further emphasizes the need for the Center. “For some people experiencing tinnitus, there can be great frustration and feelings of hopelessness, depression and even suicide in the worst cases,” says Dr. Levine. “The Tinnitus Center is a victory for the patients who will ultimately benefit from this generous gift.”

It is not only MEEI patients who will benefit from this gift. “This donation allows the formation of the Tinnitus Center at MEEI and will also launch a multidisciplinary international consortium for collaboration in research to find new treatments for people experiencing tinnitus,” says Dr. Melcher, who will be a member of the consortium, along with Dr. Levine.

But the excitement of these new programs is not limited to the possibilities of research and treatments. These programs highlight the fact that passionate friends are making a difference through their determination to create better lives for people with hearing problems. <<<

Citizens Bank – Caring Above and Beyond

It’s true: Citizens Bank is not your typical bank. The bank is committed to strengthening the communities where they do business and it has a “soft spot” for helping the underprivileged. It was with compassion that Citizens jumped at the chance to help Massachusetts Eye and Ear Infirmary (MEEI) provide free eyeglasses and subsidized hearing aids to people who cannot otherwise afford them.

“We are delighted that this donation will provide sight and sound to people who can’t afford the high cost of glasses and hearing aids,” said Heather Campion, group executive vice president and director of Corporate Affairs at Citizens Financial Group. “This program is just one example of the wonderful work MEEI is doing to ensure that all of its patients’ needs are met.”

“We have a 182-year tradition of doing everything we can to preserve sight and hearing,” said F. Curtis Smith, MEEI president. “In cases where vision loss and hearing loss cannot be corrected, eyeglasses and hearing aids make a big difference in one’s quality of life. We have great admiration for the services that Citizens provides to the low-income residents of Massachusetts, and we couldn’t be more pleased about this partnership,” he said.

Originally founded as a charitable eye clinic, MEEI has a long tradition of caring for the poor. By establishing the Citizens Bank Foundation Caring Above and Beyond Fund, Citizens Bank is helping to build upon this tradition.

Heather Campion

MEEI Chief of Otolaryngology Dr. Joseph Nadol, (left), celebrates with Drs. Jennifer Melcher and Robert Levine, who will collaborate in research at MEEI's newly formed Tinnitus Center. The Tinnitus Center was the result of generous gifts from an anonymous benefactor, as well as Infirmary friends Jack and Shelley Blais and Ken Griffin.
The Massachusetts Eye and Ear Infirmary (MEEI) and the Massachusetts Lions Clubs have enjoyed a partnership that has spanned 50 years, stemming from Helen Keller challenging the Lions to become “knights of the blind in the crusade against darkness.” Through the years, the Massachusetts Lions Clubs have contributed more than $4 million to seed eye research that has translated into significant discoveries.

When the Lions Clubs International’s Annual Convention — and more than 10,000 attendees — arrived in Boston the week of June 30, it was a natural fit for MEEI to be the Official Sponsor of the International Convention. In this role, the Infirmary created a 10-minute “Together We Fight for Sight” DVD to be distributed to attendees, a salute to this longstanding partnership which illustrates the lives that have been transformed through significant eye research seed funding at MEEI.

If you are interested in learning more about MEEI’s ground-breaking eye research, please contact Courtney Hudson at 617-573-3347 to receive a complimentary “Together We Fight for Sight” DVD. Supplies are limited.
They say that some receive their calling at an early age. For the late Albert R. Gillespie, M.D., his came as a young boy growing up on a farm in southwest Virginia in the 1920s. “I remember him telling my brother and me that one of his earliest childhood memories was learning that there was a doctor in Virginia who specialized in eye, ear, nose and throat diseases and knowing at that point this would be his calling,” said his son, Ritchie Gillespie, M.D. “That was back in the day when Ophthalmology and Otolaryngology were one specialty.”

For the senior Dr. Gillespie, medicine was more than just his profession, it was his way of life. After medical school and a tour in World War II, he started a private practice in Staunton, Virginia, as the only eye, ear, nose and throat specialist in that area, where for decades he cared for his patients and was on call at the hospital 24 hours a day, every day.

“My father worked long days and every night I can remember him sitting down with his medical journals, keeping up with the two specialties,” said his son Curt Gillespie. “He was absolutely in love with his profession and he was a vigorous pursuer of continuing medical education.”

This year, in memory of Dr. Gillespie who passed away in 2004 at the age of 92, Curt and Ritchie Gillespie endowed the Albert R. Gillespie Continuing Education Fund at the Massachusetts Eye and Ear Infirmary to support educational activities such as visiting professors and lectures.

“Gifts such as this one are deeply important to the Infirmary’s teaching mission,” said Dr. Joseph B. Nadol, Jr., chief of Otolaryngology. “As academic physicians, sharing information with our colleagues here and throughout the country and the world is at the heart of our work. Through teaching, new ideas are born and the standard of care we can offer our patients continues to improve.”

“Our father was passionate about caring for patients, and he was an avid advocate for lifelong learning,” said Dr. Gillespie. “We couldn’t think of a gift that would be a better tribute to his life’s work than this one.”
MEEI Enters 2007 Boston Marathon

Calling all runners! For the second year in a row, the Massachusetts Eye and Ear Infirmary (MEEI) is convening Team Eye and Ear to run in the Boston Marathon. MEEI is thankful for the continued generosity of John Hancock, which has provided official race numbers for 50 runners who will have the opportunity of a lifetime to run in the world-renowned Boston Marathon and to raise funds for an important cause: to preserve vision, hearing, voice and balance.

Last year’s team raised more than $180,000 in funds to support the MEEI’s mission. We hope this year’s team will be just as successful, if not more so. MEEI welcomes people of all backgrounds and abilities to consider joining the team. People who participated last year ranged from first-time marathon runners to triathlon athletes!

To find out more about joining Team Eye and Ear, please contact Courtney Hudson at (617) 573-3347 or Courtney_hudson@meei.harvard.edu.

Run the Boston Marathon with an MEEI number. Call 617-573-3347 for information.