ONE of the things I love most about my job as Dean of New Jersey Medical School is that one day is never quite like the next. Just as every day is varied, so are the people who make up the NJMS community. Our faculty, staff and students collectively present an incredibly diverse group, well-poised to meet the demands of the ever-changing realm of health sciences.

Diversity has long been critical to the success of New Jersey Medical School and today it is even more evident. While African Americans, Hispanics and Native Americans make up 25 percent of the U.S. population, only 12 percent of the students who graduate from the nation’s medical schools are from these groups. Even more significant, just 6 percent of all practicing physicians are members of these minority groups.

Last year, UMDNJ was ranked number one in the total number of minorities receiving a first professional degree in medicine by *Diverse Issues in Higher Education* magazine. Here at NJMS, a number of longstanding programs seek to attract minority students to the health sciences.

We are proud to be ahead of the curve on an issue that the American Association of Medical Colleges is actively campaigning for this year. As part of their initiative to increase diversity in medicine, the AAMC has embarked upon a career marketing effort to reach an untapped segment of potential minority students. While more minorities are studying biology in college, the number of these students who applied to medical school in the last decade has remained flat.

Just as in any campaign, word of mouth carries great weight. As someone who cares about medical education, health care and health sciences, I encourage you to use your influence to personally contribute to this important endeavor. As our population becomes increasingly diverse, we will rely on a cadre of healthcare professionals that appropriately reflects the people we serve.

Diversity is not just important to the future of healthcare, but for the continued health of our great nation.

In Health,

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Cover photo by Pete Byron; building photo this page by John Emerson
Match Day 2007

March 15 marked a highly significant day on the calendar of the New Jersey Medical School class of ’07 as they joined their fellow fourth year students nationwide in a simultaneous noontime (ET) opening of the all-important sealed white envelopes. The long-awaited contents determine where the next leg of their journey will take them. In a favorite “Match Day” tradition, all students put a small donation into a skeleton designed annually by Ann Marie Naso from NJMS laboratory education. The last person to have his or her name called receives the money.

Once again NJMS students had stellar results. Not only is the match rate 99 percent for the 163 participating students, but Johns Hopkins, Brown, Yale, Harvard, Mass General, Columbia Presbyterian, Weill-Cornell, Stanford, University of Pennsylvania, the Mayo School of Graduate Medical Education and Children’s Hospital of Pennsylvania are among the prestigious matches. Radiation oncology, dermatology, neurosurgery, ophthalmology, otolaryngology and urology are some of the highly competitive programs that NJMS graduates will soon enter. Forty-seven class of ’07 members will stay in New Jersey.

Congratulations to all.
Breathing Easier

The new Children’s RESPIRA Education Program will provide bilingual medical education to Latino families in Essex County who have asthmatic children. Funded by a $332,664 grant from The Healthcare Foundation of New Jersey and supported by Newark community organizations, RESPIRA, the Spanish word for “breathe,” is located at The University Hospital. Each participating child will receive an individualized Asthma Action Plan. “Latino families often face language barriers and difficult socioeconomic conditions,” says Evelyn Montalvo-Stanton, MD, assistant professor of pediatrics at NJMS, a pediatric lung specialist, and lead researcher for the program.

Families entering RESPIRA will first attend an education session, followed by two home visits, conducted by a bilingual nurse case manager, who will assess how the child is doing, obtain information about any hospitalizations or emergency room visits, check for asthma triggers in the home setting, and provide supplemental education about allergens.

Children in urban areas are more vulnerable to asthma due to increased exposure to second-hand smoke, insect allergens, mold, pet dander and nitrogen dioxide, a by-product of gas stoves and space heaters.

“We anticipate that this program will improve quality of life for asthma patients,” says Montalvo-Stanton.

In Memoriam

The NJMS community was saddened to learn of the passing of three colleagues: Jose Colon, MD, Franklin Behrle, MD, and Kristin Thistleton, MA, MPH.

JOSE COLON, MD, joined NJMS in 1986 as a fellow in the Department of Obstetrics, Gynecology and Women’s Health with a specialty in reproductive endocrinology and infertility. After accepting a faculty appointment in the department, he served as director of the Andrology Laboratory and then the Human In Vitro Fertilization Program. Colon was a dedicated, inspiring teacher and mentor, much loved by his students. In recognition of his outstanding contributions to his field, he received the Association of Professors of Gynecology and Obstetrics Excellence in Teaching Award in 2006. He died September 26, 2006 at the age of 53.

FRANKLIN CHARLES BEHRLE, MD, served as chair of the Department of Pediatrics from 1964 to 1985. He was the second chairman of the Department of Pediatrics, following Dr. Stuart S. Stevenson. After Behrle’s passing, a former student, Joseph A. Cannaliato, MD’63, wrote a note to Behrle’s family: “Frank not only taught me how to practice medicine; by setting an example, he taught me about respect, about honor, and about integrity.” The Franklin C. Behrle, MD Resident Education Fund and the Franklin C. Behrle Memorial Fund have been established in recognition of his dedicated service to New Jersey Medical School. Contributions to these funds may be made by contacting Elizabeth Ketterlinus at the Foundation of UMDNJ, 973-972-2486.

KRISTIN THISTLETON, MA, MPH, long-time administrator for the Department of Pediatrics, died in January after a long illness. Thistleton was deeply committed to the practice of pediatrics, as well as the education of pediatric residents and fellows. Colleagues will remember her professionalism, her dedication to the school, and her role as a mentor to the many people with whom she worked.

Pneumo-Vac for Babies is Common “Cents”

A NOVEL cost analysis of an expensive vaccine published in The Lancet provides compelling evidence for the financial importance of investing in the future. According to Anushua Singh, MD, MPH, NJMS assistant professor of preventive medicine and community health, and colleagues from Johns Hopkins and Harvard, investing in infant vaccines against pneumonia would not only save lives but money too. Despite the relatively high cost of the vaccine, savings would be realized by averting nearly half a million deaths and 1.2 million hospitalizations.

This would save 8.3 million disability-adjusted life years, or DALYs, a year. DALYs are a measurement developed by the World Health Organization for the overall burden of disease, combining years of life lost due to premature death with years of full health lost due to disability.

According to Singh’s paper, some 3.8 million infants between 3 and 29 months die each year from potentially preventable causes.
Newark and NJMS—Perfect Together

New Jersey Medical School and the City of Newark have long enjoyed a collaborative relationship, one that has been recently infused with the infectious enthusiasm of the new Corey Booker administration. In November, the school hosted the City of Newark and HOT 97 radio on campus for a program that encouraged young people to stay in school. Close to 300 Newark teens participated in a live broadcast of the HOT 97 show “Street Soldiers” hosted by Lisa Evers. During the program, panelists Stephon Marbury of the NY Knicks, Mayor Booker and writer Tāi Beauchamp stressed the importance of education in achieving success as an adult.

Representatives from a number of programs located at the UMDNJ Newark campus joined members of community-based organizations during an information fair held prior to the 9 p.m. broadcast. According to Robert L. Johnson, MD, Interim Dean of NJMS, the event captured the true spirit of collaboration that has been critical in forging a strong partnership between NJMS and the City of Newark.

Another joint initiative between NJMS and Newark is the development of a re-entry program for ex-offenders to assist in their re-integration into the community. By addressing issues such as mental and physical health, employment, housing and education, the program aims to prevent recidivism.

Later this year, NJMS and Newark’s Department of Child and Family Wellness anticipate the opening of a Center for Excellence in Urban Health, which will combine research, education and social services focused specifically on urban issues.

Home Sweet Home

MORE THAN HALF of this year’s entering class of students are calling 180 West Market home. The first ever on-campus residence building for UMDNJ includes 233 apartments that can accommodate 462 UMDNJ students and faculty, combining the convenience of apartment living with greater proximity to campus life.

Fully furnished studio, one-, two- and three-bedroom units are available. Amenities include air conditioning, high speed Internet, on-site parking and 24-hour security. An outdoor terrace on the 6th floor and a quiet study lounge on the 8th floor offer alternate venues for socializing and studying.
Exploring New Partnerships

Non-traditional partnerships between public and private entities are helping to advance science. The Center for Applied Genomics, part of the Public Health Research Institute at New Jersey Medical School, and MicroDysis, Inc. recently received a state grant from the New Jersey Commission on Science and Technology to further their work on improving the speed and lowering the cost of microarrays—an increasingly popular method for genetic testing. Established in 2003, MicroDysis develops microfabrication technology and fluidic microarrays for clinical analysis and diagnostics. The Center for Applied Genomics produces, processes and distributes high quality, affordable microarrays for academic and industrial research communities.

Experts Reach Across Disciplines and State Lines

Researchers from New Jersey Medical School and Case Western Reserve University have joined forces to identify the beneficial effects of two toxic gases—nitric oxide and carbon monoxide—on the regulation of blood pressure.

Annie Beuve, PhD, assistant professor of pharmacology and physiology at New Jersey Medical School, and Focco van den Akker, PhD, assistant professor of biochemistry at Case Western Reserve University, collaborated on a study that appears in the January 24 issue of The EMBO Journal, the academic publication of the European Molecular Biology Organization, which is published by Nature Publishing Group.

The paper documents how NO and CO bind to a protein called soluble guanylyl cyclase (sGC), which is critical in the formation of a molecule messenger, cGMP, which induces the relaxation of blood vessels. Dysfunction in this process is responsible for many cardiovascular diseases including hypertension (high blood pressure), atherosclerosis (hardening of the arteries) and erectile dysfunction. Understanding this process will help develop new strategies for the clinical treatment of these diseases which affect more than 50 million Americans.

This novel discovery was only made possible through collaboration. Van den Akker is an expert in revealing the three-dimensional structure of various molecules, while Beuve is an expert in nitric oxide signaling and its receptor.

Transplant Surgeon Urges African-Americans to Consider Organ Donation

Dorian Wilson, MD, associate professor of surgery and an organ transplant specialist, was featured in a segment of the NBC Today Show that highlighted the National Organ Sabbath Day, a program in which churches deliver messages about the importance of organ donation during services.

Survivors of the 1918 Flu May Unlock Secrets to Flu Vaccine • Eric Altschuler, MD, of the Department of Physical Rehabilitation and Medicine, needs volunteers for a study of 1918 flu survivors. His study aims to identify antibodies present in the blood that may be used to develop a vaccine for this virulent form of the flu virus. A front-page story in The Star-Ledger and a spot on “CBS Weekend News” brought in 500 phone calls from potential volunteers for the research.

Massage Shown to Benefit Osteoarthritis of the Knee • Adam Perlman, MD, associate professor and executive director of the Institute for Complementary and Alternative Medicine at UMDNJ, was featured several times regarding his recent publication in the Annals of Internal Medicine, indicating that regular Swedish massage may mitigate knee pain associated with osteoarthritis. The study also demonstrated that the beneficial effects of massage were sustained over a period of time. Perlman, the lead author of the article, collaborated with David Katz, MD, from the Yale School of Medicine and director of Yale’s Prevention Research Center. The story appeared in The New York Times, and on Channel 11 News and ABC Eyewitness News and was picked up by Reuters Health wire and the Web MD website.

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More than 70 million Americans over age 20 have hypertension, which can result in heart attack, stroke, or kidney disease if left untreated. Medications are often prescribed to control hypertension, but researchers at New Jersey Medical School are studying a Chinese herb that they think can have a significant effect.

A team of researchers looked at tanshinone IIA, an active ingredient in a Chinese herb called danshen, in an animal model. The study results are available online and will be published in the May edition of the American Journal of Physiology—Heart and Circulatory Physiology. According to David Kim, PhD, an assistant professor of pharmacology and physiology at NJMS and a practitioner of oriental medicine, tanshinone IIA had a beneficial effect on blood pressure. Kim, the principal investigator of the study, said the change was produced by an increase in the production of nitric oxide, which induced widening of the blood vessels.

While the mechanisms of how tanshinone IIA or danshen work in hypertension are not yet fully understood, Kim says, “We believe a combination of Oriental and Western Medicine can lead to better treatments for patients who suffer from hypertension and vascular diseases.”

Walter N. Durán, PhD, a professor in the Department of Surgery, director of the Division of Vascular Surgery, and a member of the Department of Pharmacology and Physiology, also participated in the study, entitled “Endothelial nitric oxide synthase is a molecular vascular target for the Chinese herb danshen in hypertension.”

The team also demonstrated that acupuncture at specific sites, called meridians, reduces blood pressure in hamsters. The acupuncture study was published in the journal Microcirculation in September 2006. Both studies were supported by a grant from the National Institutes of Health (NIH).
The Autism Center of New Jersey Medical School raised $320,000 at its Third Annual Dinner/Dance on December 2. AJ Calloway, former host of BET’s music video show “106 and Park” and a current correspondent on the television show “Extra,” served as the evening’s Master of Ceremonies. Funds raised during this evening of “glamour and elegance” will support the center’s ongoing efforts to advance research, treatment and outreach in the field of autism.

According to the U.S. Department of Education, the incidence of autism is on the rise. In the last 10 years, the numbers in New Jersey have increased 1,000 percent.

“At a time when autism affects approximately one in 165 children, we can’t begin to imagine the effect autism will have on our society, both from a financial and ethical perspective,” said Jeffrey Gitterman, chair of The Autism Center of New Jersey Medical School’s Advisory Board and the parent of an autistic son.

“The Autism Center of New Jersey Medical School is driven by sound, innovative science and supported and enhanced by community involvement, particularly the involvement of our dedicated donors,” said Charles Cartwright, MD, Interim Medical Director of The Autism Center. “We are encouraged by and indeed indebted to them for their stalwart support for such an important cause.”

The evening included the recognition of three people whose dedication to the field of autism has played an important role in the growth of The Autism Center:

- Governor Jon S. Corzine, who sponsored the TEACH (Teacher Education for Autistic Children) act and recently established the Office of Children and Families to focus on New Jersey’s most vulnerable population;
- Barbie Zimmerman-Bier, MD, a developmental pediatrician who is the Division Director for Child Development in the Department of Pediatrics at New Jersey Medical School and the Clinical Director of The Autism Center;
- Linda Walder Fiddle, Esq, Executive Director and Founder of The Daniel Jordan Fiddle Foundation, which supports programs and services for adolescents and adults with autism.

Shocking News

Charles Kellner, MD, professor and chair of psychiatry at New Jersey Medical School and an expert in electroconvulsive therapy (ECT), is featured in the recently released book “Shock” by Kitty Dukakis and Larry Tye.

Kellner believes the book has been helpful in allaying much of the fear associated with this treatment. His latest research from 2005 and 2006 supports the continued efficacy and use of shock therapy, particularly for people with medication-resistant depression.

According to Kellner, since its introduction in 1938, ECT has remained an important treatment for selected serious neuropsychiatric illnesses and continues to be one of the most effective treatments in psychiatry. ECT has evolved into a technically sophisticated procedure with a proven track record of safety. New Jersey Medical School is the only academic research center in the state where research in ECT is being conducted.
OPENING A NEW BUILDING is not unlike unwrapping a long-awaited gift—the impatience climbs high, the anticipation sometimes higher. But what a joy when the moment arrives and probability becomes reality.

So it was when the first researchers—after setting up shop in the eye-catching tall building near the corner of South Orange Avenue and Bergen Street—threw open the doors in December and proudly invited UMDNJ faculty and staff to view their new home. And their visitors were far from disappointed.

The building boasts state-of-the-art research laboratories with open floor plans to invite collaboration, high caliber equipment, and a sense of light and space—but no building comes alive without the people inhabiting it. Meet two researchers who relocated to the state to head-up laboratories at the New Jersey Medical School-University Hospital Cancer Center and who represent just some of the “brains” and energy driving this forward-moving initiative.

UTZ HERBIG

On the Telomere Trail

UTz Herbig spends much of his workday thinking about aging. And he’s been at it for a number of years now. Does he have white, thinning hair? A lined face? An extreme fear of death? No way! In fact, he’s young, vibrant and ready to take on any number of challenges—one of them being a better understanding of how humans age.
Maybe it’s the sun, or maybe it’s the stars, or maybe it’s just the right time in the chronology of science. But it seems as if extending lifespan—or at least stemming the tide of the chronic, debilitating illnesses often associated with aging—is on everyone’s minds and tongues these days. Herbig is right there on the front lines of this booming field.

Born and raised in a small village in southern Germany, he studied at the University of Munich, completing his Master’s degree in chemistry before being wooed to the U.S. by Ellen Fanning, PhD, an American who was his professor in Germany and had just gotten an offer to become chair of biological sciences at Vanderbilt University in Tennessee. He entered a PhD program there in 1995—doing research in Fanning’s lab, where he describes the focus as “DNA replication, which is dysregulated in a majority of cancers.”

Herbig’s decision to move across the Atlantic was apparently an easy one. He had traveled around the U.S. in the summers of 1982 and 1984—both times for two months—with his father, who held a doctorate in chemistry and was also a scientific writer researching the hunters and gatherers of Native American tribes. The teenager was wowed by “the diversity of nature and culture and the grand space of the Midwest.” He returned to the U.S. four or five times during his undergraduate college career—this time to visit New York City with friends—and was duly impressed.

He “loved graduate school” at Vanderbilt, learned “an incredible amount,” and found it to be “so much fun.” In Germany, he says, attending a university is free—or more accurately $7 per year—but “the teaching is antiquated.” A faculty position is permanent, he explains, so professors are often unresponsive and unfriendly towards their students, who never have the opportunity to evaluate them. And there is little energy in the research arena, he says, because the element of competing for grants is generally missing.

From Nashville, Herbig moved on to Brown University for a post doc and that’s where he became immersed in aging. “I needed something new,” he says, about his research in cellular senescence, which he began at the end of 2000.

Working in the laboratory of John Sedivy, PhD, professor and chair of the Department of Molecular Biology, Cell Biology and Biochemistry at Brown University and a well-known researcher in aging, Herbig started down a new path. “What researchers have known for awhile is that cells have a limited potential to replicate and eventually stop growing. This is called growth arrest or cellular senescence,” he says. “What no one understood is why this happens.”

One theory at the time was that cultured cells studied in the laboratory stopped dividing because they were grown outside of their natural environment, the human body.

Looking to determine whether cellular senescence also occurs in living organisms or simply is an artifact of cultured cells, he developed an assay that was capable of detecting senescent cells in skin tissue of baboons, which age similarly to humans, with a lifespan averaging 25 to 30 years. The study had striking results, which were published in Science (Vol 311, March 3, 2006) with Herbig as first author.

The researcher determined that senescent cells with telomere damage, a biomarker of cellular senescence, increase exponentially as we get older. Using small samples from the baboons’ forearms, he found that these senescent cells make up “about 4 percent of the connective tissue cell population in 5-year-olds. In 30-year-olds, that number rose as high as 20 percent,” indicating that old age and senescent cells are clearly linked. These senescent cells are the likely culprits behind skin thinning and wrinkling, and slower wound healing, in our later years, he says.

What Herbig wants to know next is whether this also happens in other organs. Therefore his next step will be to study multiple tissues, not just exposed skin.

So what else will Herbig do in his laboratory in the new New Jersey Medical School-University Hospital Cancer Center?
NEW & NOTABLE

Most of us may have heard of telomeres by now. An article entitled “Living Longer: Science” in the September/October issue of AARP, The Magazine, calls telomeres “the discovery that has generated the most excitement among scientists who study why we age,” and describes them as “chunks of DNA at the ends of each chromosome in the nucleus of every cell that are sometimes likened to a string of beads.”

The article explains how telomeres are thought to work: “Each time the cell divides, one of the beads—or telomeres—disappears. When there are no more telomeres left, we start to die.”

It may be a little less poetic, but Herbig’s description gets right to the point: “Telomeres—the physical ends of linear chromosomes—become shorter with every cell division until they tell the cell to stop dividing. We now believe, although it’s not proven, that telomeres are sensors of stress, that they can sense environmental changes and trigger growth arrest. What we don’t know is how.”

So learning how telomeres trigger cell growth arrest is one of Herbig’s current interests, a finding that would also have important implications in the cancer field, he says. The relationship between senescent cells and cancer is a hot topic right now for scientists. “There were four papers published last year on cellular senescence stopping the growth of cancer,” he says.

“Moles are composed of senescent cells,” he explains. Moles, it turns out, are actually a pile-up of cells that had been multiplying out-of-control, but by some internal process, the brakes were suddenly put on and the rapid multiplication of cells stopped.

“When the cell acquires enough mutations, it grows out of control, forming this tumor mass,” says Herbig. But something kicks in that makes the cells stop multiplying, in other words—makes them senescent and the tumor stops growing.

Herbig is very excited about his twofold research plan—to continue studying aging moles in order to learn more about cell senescence, telomeres and the aging process in humans; and also examine the potential role of telomeres in stopping the growth of pre-cancerous lesions.

“The field of aging is exploding,” he says. “Have you heard about Resveratrol?”

For those who haven’t, a quick read of the article in the January 2007 issue of Fortune magazine entitled “Can red wine help you live forever?” is worth your time.

Resveratrol is the ingredient in red wine that made headlines in November when scientists demonstrated that it kept overfed mice from gaining weight, turned them into the equivalent of Olympic marathoners, and seemed to slow down their aging process. Few medical discoveries have generated such instant buzz…” says the author David Stipp.

Unfortunately, the finding is not going to do us much good right now because in order to reap its great effects, you “need to drink 100 glasses of wine each day,” says Herbig. But the good news is that the Harvard researcher who made the finding has teamed up with a venture capitalist to found a biotech company that will try to produce similar and more potent molecules synthetically.

“This might be a substance that plants produce in times of stress, for example during a drought. Animals that eat these plants activate cellular defense mechanisms, allowing them to survive through these adverse times. As a result, these animals are healthier and therefore live longer,” explains Herbig.

So who’s to say that Herbig and other scientists won’t come up with pharmaceutical blockbusters to stave off aging and cancer in our lifetimes?

Not me! —EVE JACOBS

BETSY BARNES
Medicinal Chemist

TAKE a few steps over to the neighboring laboratory on G-level of the new Cancer Center and you’ll run into a research team with a very different focus. First, meet lab leader Betsy Barnes, whose vibrancy and obvious enthusiasm for her work—along with her already-recognized successes—portend great things to come.

Barnes has arrived in Newark via Minnesota, Virginia, Germany (where she spent five years), Florida, Wilmington, North Carolina (where she earned her BS and ran track), Chapel Hill, North Carolina, Baltimore, and South Dakota (where she never lived but which is home to both sets of grandparents). Her father’s Air Force career kept the family moving and left Barnes feeling “rootless”—but the upside is that she is very comfortable pretty much anywhere. New Jersey has been her home—and that of her infant daughter, Hazel Francis Wright, and husband—since last summer.

No one would argue that Johns Hopkins’ loss is UMDNJ’s gain. The scientist has a string of research publications that belies her age and relatively short scientific career. A premed major in college, she “loved” organic chemistry—the bane of most undergraduate science majors—but decided after she had applied to medical schools, and been accepted at several, that she wasn’t sure doctoring was her calling.

Spending the year after graduation in the labs of a small biotech company in Research Triangle Park set her on her life’s path. She entered a PhD program at the University of North Carolina, Chapel Hill in 1994, and five years later earned her degree in medicinal chemistry, which she explains is “like getting a
PhD in chemistry and a PhD in pharmacology—the perfect marriage for me.” Her research focused on the design of new pharmaceuticals, and as part of that work she began looking at cytotoxic agents against tumors. It was here that Barnes first became interested in cancer and also published her first articles in scientific journals—some with the young researcher as corresponding author.

In 1999, she moved on to begin a post-doc at Johns Hopkins. When funding fell through for the breast cancer research project she was slated to work on, Barnes switched gears, joining a “very prominent” university lab that is credited with isolating two interferon regulating factors (IRFs). Her project was to study IRF-5.

“Interferon regulatory factors are involved in virus and interferon signaling pathways and play an important role in antiviral defense, immune response, lymphoid cell development and cell growth regulation,” she explains.

During her first three years at Hopkins, she became an expert on IRF-5, including its role in kicking off cytokine and chemokine activity following infection with virus or the introduction of pathogens, and in 2002, Barnes had what she calls “a very lucky find.”

“We discovered that IRF-5 as a tumor suppressor, she began to understand more about its relationship to p53. While that may not sound fabulous to a nonscientist, plug her name into Google and you’ll change your mind. You can read about those findings in Cancer Research [63, October 1, 2003].

Researchers now know that a large majority of human diseases involve defects in cellular communication. Since these cell-signaling flaws contribute to the onset and progression of cancer as well as other illnesses, drug developers often target molecules involved in cell signaling. This is what Barnes’ lab in the new Cancer Center will concentrate on. In her short time in the Garden State, she has put together her core team of five (four post docs and herself).

Apoptosis, or programmed cell suicide, and p53, which functions as a tumor suppressor by preventing genome mutation, all enter into Barnes’ research now. Many cancers have impaired p53 function, contributing to resistance to chemotherapy and treatment failure. At least some of the functions of p53 can be accomplished by IRF-5, so pumping up the natural production of this interferon regulating factor—along with giving conventional cancer chemotherapy—may work for patients by making tumors deficient in p53 more sensitive to apoptosis generated by medication.

In 2005, Barnes and her team at Johns Hopkins published a discovery that garnered a great deal of attention. They found that the combination of interferon-B and irinotecan (CPT-11)—a chemotherapeutic used in cancer treatment—inhibits cell growth in colon cancer better than either agent is able to achieve alone; and that IRF-5 “synergizes with them to further promote apoptosis.” The synergism, she explains, is “due to IRF-5 signaling since a striking defect in apoptosis and cell death was observed in IRF-5-deficient cells.

“There are lots of problems when using interferon alone,” she says. “You can use it in lower concentrations when it’s combined with other drugs. Combination therapies are the way things are going in cancer treatment.”

IRF-5 is still high on the list of important molecules deserving more attention, according to Barnes. Her lab will focus on its role in lupus, and possibly asthma.

In addition, her team will do further research on certain genotoxic stressors, including infrared radiation (IR), UV radiation and chemotherapeutic agents, to try to better understand how they might utilize the IRF signaling pathway.

They will also work on APO2L/TRAIL, a human protein that can trigger apoptosis in certain cells, killing these cells without damaging normal, healthy ones. “No one really knows all of the components necessary for turning on this new apoptotic signaling pathway,” says the scientist.

“The ultimate goal of my lab is to come up with new combination therapies for cancer,” says Barnes.

“There are so many projects that I want to work on. We’ll start with a few and build slowly.” —EVE JACOBS

Look for more new researchers in upcoming issues of the magazine.
Masters of Artful Teaching

Tough, demanding, dynamic, brilliant, original... all words commonly used to describe exceptional teachers, those who stand out from a long list of educators you may have had since grammar school. But the word “master” connotes a leader in the field—someone at the top of their game. “Masters” coax the shy student to the front of the class to belt out Shakespeare, teach the struggling language student to read novels in Spanish, and in medical school, this powerful person inspires future doctors to excel beyond the classroom. Meet two NJMS faculty members—among the best of the best—whose talents were recently recognized with their induction into the Stuart D. Cook, MD, UMDNJ Master Educators’ Guild. But if you’re tempted to think of them only as great science teachers, think again. They are also both accomplished artists, but not necessarily in the conventional sense. If ever there was a connection between art and medicine, it can be seen in Debra Heller, MD, professor of pathology, and Richard Feinberg, PhD, associate professor of ophthalmology and director of educational resources. The first clue lies in their offices.

Finding a Pattern in Science and Art

Aside from the microscope (a dead giveaway) in the center of her desk, you would have to look very closely to determine Debra Heller’s line of work. Next to the grossing room—where tissue samples are collected and dissected—and labs in the anatomic pathology wing of the medical school, Heller’s colorfully decorated office reflects her personal style and approach toward teaching.

Her love of medicine began with a career in obstetrics and gynecology. After four years as a practicing obstetrician, Heller felt a pull toward pathology. She completed a second residency in anatomic pathology along with fellowships in pediatric and gynecologic pathology. “I harnessed my clinical background and funneled it into a pathology career,” she explains. Now specializing in gynecologic and perinatal pathology, she teaches her expertise to second-year medical students and works closely with residents.

Heller was named to the Guild for many reasons including her high academic standards and her gift for teaching. But the quality that stands out most for third-year resident Valerie Fitzhugh, MD, is the professor’s approachability. “It’s clear that Dr. Heller enjoys working with students and she always has great answers to hard questions,” she explains. “As a resident, I have the opportunity to consult with her on difficult gynecologic cases and she is so knowledgeable in her field. She not only explains what we should be looking for when we are viewing specimens but she makes us feel comfortable that we are doing a good job.”

In addition to teaching a pathology course, Disease Processes, Prevention and Therapeutics, Heller has experience with the Physician’s Core—a central component of the NJMS curriculum where first-year students learn and practice vital clinical skills and the basics of patient care. Clinical decision-making is improved through small-group learning experiences called problem based learning or PBL. “The group approach toward teaching requires students to be active rather than passive,” Heller explains. “We use the framework of a clinical case and let the students search
Finding Art in Histology

Now enter the office of Richard Feinberg, PhD, where lively paintings by his father (also an artist), articles and his own scientific images cover the walls. The most distinct piece of art by far is a picture of a four-day-old chicken embryo that he submitted and which subsequently placed 8th in Nikon’s 10th Annual Small World Photomicroscopy contest several years ago. This competition offers scientists the opportunity to present images only seen through a microscope which are judged on their beauty and artistic qual-
ity. As you glance at the details of avian development on Feinberg’s wall, you start to understand why he sees art in histology.

Feinberg teaches a combined course in cell biology and physiology called Integrative Structure and Function to first-year medical students. As director of the part-time Master’s program at the Graduate School of Biomedical Sciences, he also teaches an evening class in cell biology. “I love to tell a story,” he explains. “I spend a lot of time on my teaching materials so they include illustrations, tables and graphs, and really capture both the visual and auditory students.” Feinberg’s story-telling is one of the reasons he was chosen as a Master Educator. Analogies, cartoons and humor help his students overcome the hurdles of boredom. “It’s hard to sit hour upon hour in a lecture hall where the professors come and go. If students say my class was fun, then I know I am doing my job.”

Why does he think he was chosen? “I guess they like my philosophy of teaching,” he explains. Feinberg’s dedication to his students is certainly evident. He was thrilled when he received the good news. “When the letter arrived I had to read it twice! It was the middle of the summer and there were very few people here. I walked up and down the halls searching for colleagues. I was so excited but couldn’t find anyone!”

Feinberg started his science career with a BS in biology from City College of the City University of New York where he also pursued a Master’s in developmental biology. After earning his PhD from the State University of New York at Albany in developmental biology, Feinberg completed a research fellowship at the Uniformed Services University of the Health Sciences in Maryland. He was hired as an instructor in the anatomy department at NJMS in 1983. Now Feinberg wears many hats. In addition to his teaching roles at both NJMS and GSBS, he is also director of Educational Resources, which puts him in charge of laboratory education and WebCT, which offers students the option of taking some academic courses online.

Just this year, Feinberg’s histology class shed their microscopes. The medical school switched over to virtual microscopy in January, allowing students easier access to slides from personal laptops, as well as school and home computers. In virtual microscopy, real glass slides normally seen through a microscope are scanned and saved as JPEG images on a server. The slides can be retrieved through WebCT on any computer and viewed just as they would appear under a microscope. More importantly, multiple slides can be viewed simultaneously or saved for later viewing. “Gone are the days of seeing medical students carrying the cumbersome slide box,” explains Feinberg. “There are so many advantages to this method. In the past I would have to look through the microscope first, and then individual students would take
Joel Delisa, MD, professor and chair of Physical Medicine and Rehabilitation, was recently elected Chair-Elect of the Association of American Medical Colleges’ Council of Academic Societies, which represents the faculty leadership of U.S. medical schools and teaching hospitals. He will serve until November of 2007, when he assumes the role of chair for one year.

Nick Ingoiglia, PhD, professor, Department of Pharmacology and Physiology, and Associate Dean for Student Affairs at the UMDNJ-Graduate School of Biomedical Sciences, was selected as the 2006 Alfred P. Sloan Foundation Minority PhD Program Faculty Mentor of the Year. Nominated by Maria Isaza, a fourth-year PhD student in the Interdisciplinary Biomedical Sciences program, for his commitment and dedication to teaching, Ingoiglia was publicly recognized during the 2006 Compact for Faculty Diversity Institute on October 28 in Miami, FL.

As a nominee for the Association of American Medical Colleges’ Humanism in Medicine Award, James Oleske, MD, professor, Department of Pediatrics, and 52 other nominees were recognized in a full-page announcement in the Oct. 30 issue of USA Today regarding this national award. Students at NJMS singled out Oleske as a role model with a commitment to the ideals of humanism including compassion, understanding and partnership.

Research to Prevent Blindness has awarded a grant of $110,000 to the Department of Ophthalmology to support research into the causes, treatment and prevention of blinding diseases. The research will be directed by Marco Zarbin, MD, PhD, professor and chair.

She’s a Jolly Good Fellow

Carol Newlon, PhD, professor and chair of Microbiology and Molecular Genetics at NJMS, has been named a Fellow of the prestigious scientific group, the American Association for the Advancement of Science (AAAS). She received her Fellow award—symbolized by a blue and gold rosette pin—February 17th in San Francisco during the AAAS annual meeting.

Founded in 1848, AAAS is the one of the oldest scientific associations in the U.S. and is the publisher of the monthly peer-reviewed journal Science. Newlon is the first NJMS faculty member to receive an AAAS Fellow award, which is given to those whose “efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished.” Only about 400 scientists worldwide each year receive the AAAS Fellow award.

An expert in the DNA structure of yeast, Newlon’s research is supported by several NIH grants. “It’s the same yeast that you use for baking, wine and beer,” she noted. Even though yeast DNA chromosomes are 1,000 times smaller than those in mammal (including human) DNA, they turn out to provide a close model for DNA structure in higher-functioning beings. —Melissa Campbell

Accolades

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Dare Ajibade, Carlos Machado, Emily Yee, Ali Chaudry, and Jennifer Koch have little time to spare on their fast tracks as busy students at New Jersey Medical School. But, when asked to face their futures in healthcare, all five slowed down and shared optimistic dreams.

By Maryann Brinley
HAPPY THOUGHT  The future of medical research. It has been a commonly accepted notion that medicine is propagated through research. Never has this been truer than now. With great discoveries in genetic engineering, stem cell research and oncology, the textbooks of medicine will be rewritten for better patient care. We will gain incredible leaps by understanding the working, intricate nature of the human brain through advancements in neuroscience. Insights into how the body defends itself will follow new discoveries in immunology. Whether it’s controlling obesity—which contributes to so many diseases including the top causes of death in the U.S. (cardiovascular disease, cancer, diabetes)—or controlling multiple sclerosis using complementary and alternative medicines, the future of medicine looks very bright.

WHY NJMS  The innovative curriculum and supportive environment!

ON HIS WORRY LIST  Access to healthcare. The healthcare system of the future needs to move closer to a national healthcare model catering to the greater good. Too many people have no insurance at all while others are underinsured and can’t get care they need. Add the senior citizens to this problem. Because of improvements in medical technology and preventive medicine, people are living longer. Those numbers, combined with aging baby boomers, will significantly increase our geriatric patient population. This health insurance and care problem is one that we just have to solve…and soon.

MY DREAM  A future in which physicians exude more compassion for patients and derive greater satisfaction from prevention than they do from cures. A time when exercise and nutritional education are on the first lines of defense in treatment plans. Of course, I know that prevention is only the start and not sufficient by itself. So, I look forward to groundbreaking improvements in healthcare, the total elimination of some diseases and our ability to control others at sub-clinical levels.

An MD/PhD/MPH student, former wrestler from Bloomfield, NJ, this Rutgers grad earned the prestigious Henry Rutgers Scholar award and is now pursuing a career as a physician-scientist. He imagines that the future of medicine will be more humanistic and sees healthcare professionals as the quintessential piece of this difficult puzzle. He has concerns. “I’ve always been optimistic about the possibilities that lie in the future but I also think that this is a future which hangs in the balance. To safeguard medicine, we must produce more diverse, culturally competent and socially conscious physicians.” Passionate about his chosen field, this co-president of the Student National Medical Association at NJMS worries about the more than 40 million uninsured and underinsured in America. Where he wants to be is among “the new breed of physicians who advocate for patients and help find solutions” to troubling societal issues.
As students, his parents left everything behind in Cuba to start new lives here in the U.S. “They had to relinquish everything: bank accounts, property, family, friends, school.” His dad is a chemical engineer and his mother left school to raise the family but it wasn’t easy building new lives from scratch. President of the NJMS Student Council, a fourth-year med student and Rutgers graduate, he’s interested in nephrology as a possible specialty, but the stamp of politics and chance to make a difference in social policy are already clearly in his cards. “I can see myself practicing medicine for many years but I also envision doing more in public life.” In fact, he’s already on his way: once a month, as one of only two students on the New Jersey Commission on Higher Education, he’s been working with politicians, educators and business leaders on how to improve the state’s colleges and universities. What brought him to NJMS was the promise of “the clinical experience and the collegiality I felt on my interview and tour. What I’ve learned from speaking with other applicants on the interview trail now is that my clinical training was second to none.”

Medicine’s Future  
I believe that we are on the precipice of an entirely new kind of medicine. Over the past century, our pharmaceutical advances have been driven mainly by chemistry, but in the future—as we’re starting to see already—the industry will be led by biomedicine and genetics. Obviously, this will have a dramatic effect on the way medicine is practiced. We can only speculate about what exactly that will be.

Good Idea  
Taking time off after graduation from Rutgers in 2002. Before starting medical school, I worked in a research lab—The Waksman Institute of Microbiology—and then I went traveling for several months. My lab responsibilities had me supervising high school students, teaching them how to do very basic genetic research and bioinformatics. We were working on the genetic homogeneity that exists between *Homo sapiens* and *C. elegans*, a microscopic worm. This homogeneity allowed us to use a human cDNA library to provide short DNA sequences that were copied into RNA sequences and used to “knock out” genes responsible for embryonic development of *C. elegans*. Any sequences that successfully stopped the embryonic development of the worm were then sequenced and compared to other genes that have already been discovered. The work was designed to give us a greater understanding of the genes possibly involved in human embryonic development. The second part of that year, I went off to Europe and spent the majority of the time in Spain. However, I was fortunate enough and thankful for the opportunity to travel to many other countries as well. It was a great experience.

Best NJMS Clinical Experience  
A rotation with JoAnne Reteguiz. She’s an associate professor of medicine as well as an amazing doctor, teacher, writer and mentor to her students. Our group of students, residents and everyone on that rotation just clicked. I couldn’t wait to get to the hospital to see patients on those mornings between 6:30 and 7 am.

On His Wish List  
Currently, state laws prohibit health insurers from charging different premiums to individuals based on their life styles, risk factors, etc. However, there are no federal restrictions against this. In the future, I anticipate that health insurance will become similar to car insurance where those who maintain healthy lifestyles and see doctors regularly will receive lower premiums than those who do not take preventive health measures. My hope is that this type of system will encourage more individuals to live healthier lifestyles, while enabling all of us to save money on health insurance.

Why Politics  
As president of the Student Council, I was able to become more comfortable making decisions, working with others and being a leader. While I have plenty of faults that I still need to work on, the experience taught me a great deal about how to gain common ground between opposing elements of the student body, and between the students and administration. Politics intrigues me because of the size of the impact you can make. Medicine shows you what you can do on a one-to-one basis.

Roots  
I am the product of New Jersey public schools, starting in grade school and continuing to Manalapan High School, Rutgers College and NJMS. There are no physicians in my family so I was never encouraged to pursue medicine in particular but my parents always put a premium on our education. They understood that we couldn’t necessarily be perfect, but expected our maximum effort in academic pursuits. Recognizing the fact that their own education and work ethic were what allowed them to succeed in America, they made sure that all of their children were given a solid educational foundation.
A n All-American rugby player at Harvard, after graduation in 1998 with a degree in biology, she considered medical school but instead decided to devote her energy to children. Though her older brother had already embarked on his own medical career, she wanted to ensure that going into medicine was her own decision. So, she joined SCORE! Educational Centers. At SCORE! she confirmed her interest in working with children as well as sharpening her leadership skills by opening and running educational centers throughout the New York-New Jersey metropolitan area. “I love working with kids, having that one-on-one interaction with them as well as their parents, and I looked forward to each day.” Yet, managerial success in business took increasingly more and more of her time until she realized that something was missing from her workday. “I turned to medical school then in order to become the pediatrician I had discovered in myself during those working years.” Coordinator of the Early Start Mentoring Program (ESMP) at NJMS, she is also a class representative to the Student Council.

EMILY YEE
CLASS OF 2009

WHY MED SCHOOL According to the Admissions Office, I am a non-traditional student because it took me seven years from the time I graduated from college to begin here. I definitely had moments when I thought I was too old. I also heard concerns about the financial loss of returning to school, the overall rigors of medicine and the pressure of being on the brink of advanced maternal age. However, I realized when I was defending my decision that I was also confirming my future to myself. Despite the challenges, I wanted to follow my passion.

SECRET TO SUCCESS Life experience. My non-medical school friends often wonder, “How do you handle the commitment to studying so much after not studying for so many years?” The truth is: nothing can really prepare you for the work in medical school. I am also asked if I wish I had started right after college. While I think my memorization abilities might have been sharper, I never would have valued my experience as much as I do now.

FUTURE WORRY Managing the limits imposed on physicians by time and cost. I also worry that I may become too busy to educate. Educating patients is part of the role of a physician.

REGRET I wish I knew how to speak Spanish. Patients at our student run family health care center clinic are already in a vulnerable state when they arrive, so it only compounds their vulnerability when they encounter a language barrier.

WHY NJMS? I grew up in Centerport, New York, on Long Island. I’m one of the few members of my class who is not from New Jersey. However, I’ve lived in Hoboken since 2000. Although I find the quick commute to Newark convenient, my decision to go to NJMS over Robert Wood Johnson Medical School was not based on geography. I chose NJMS because I found the students here to be more passionate about their medical school experience. Moreover, NJMS afforded me a clinical experience that I knew I couldn’t get anywhere else.
NOT-SO-FUNNY MEMORY
A
Winnebago isn’t easy to drive in city neighborhoods. Seriously, maneuvering that mobile hospital was difficult and I got us into a couple of accidents when I was working that year for St. Peter’s. Thankfully, no one was hurt. Overall, though, my experience on that team was a turning point for me. Seeing how much could be done as well as how much needed to be done in these underserved communities made an impression on me.

LESSON LEARNED
Access to care can save lives and pain. I will never forget a case I saw while doing rounds with the chief resident at University Hospital. Before entering the patient’s room, we could see on the chart that the man had prostate cancer. This man had waited so long to come in for treatment that the mass, which would have been smaller and maybe manageable with an earlier diagnosis, had grown to the size of a honeydew melon. He was in excruciating pain, too. When he got up from his bed to go to the chair or bathroom, he needed to pick up the tumor itself. I started to think about all the other people out there who can’t afford health insurance and delay seeking medical attention.

BIG DISAPPOINTMENT
Here we are in the biggest healthcare system in the world and we are failing so many people. Financially, it just makes more sense to take care of all the people living inside our borders. And, in the long run, it’s probably cheaper than if we wait for them to become critically ill. I attended an American College of Physicians (ACP) conference which dealt with some of these tough issues. Young physicians were being encouraged to become more involved in the business side of medicine, to learn where the money in medicine is going and to get involved politically to change the system.

MOTIVATION
My going into medicine is not about money. Essentially, my motivation is to do the best I can here in school now and to earn this medical degree so I can go out to help the people who need it the most. I think I’ll pursue medicine in general before trying to live out my dream of returning to Pakistan.
A psychology major and an education minor at Dartmouth, she found her true calling while working with developmentally disabled children at a Yale University research center after college graduation. “At the time, I considered pursuing clinical psychology or medicine. Through working with children, some of whom needed help from many different disciplines, I realized that in order to be able to effect the kind of change I wanted to see, medicine was the right place for me.” Now, co-director of the Student Health Advocacy for Resources and Education (S.H.A.R.E.), a group which represents all the service and learning organizations available to med students, she is as busy as she’s always been. Back in high school in Mountain Lakes, NJ, she set basketball records, played soccer and track on winning teams as well as editing the school newspaper and yearbook. In college, she stayed with basketball for all four years, leading teams to titles and NCAA tournaments. Since then, she has run the New York City marathon twice, coached a high school team and found time to mentor children in a Head Start program.

Jumping right into a myriad of activities comes naturally for this gifted scholar. After all, “I was an Army brat, moving three times by the time I turned 10,” she explains. For her future, she’s craving continuity in the world of pediatrics. “At Yale, I loved the families and kids but I’d only see them for a few days. I want to be there for children earlier in life, not just for short periods when they’re in trouble. I want to know all about them, to get their ‘back’ stories, to help answer their questions and to be there long after a crisis is over.”
MOST MEMORABLE EXPERIENCE  The first patient I was ever assigned to in clinic. He was a middle-aged man with some health concerns who was mainly there to get preventive direction. I only saw this man three or four times but what happened over the course of our relationship was amazing. In only a few weeks, he went from smoking two packs of cigarettes a day down to just three cigarettes. Watching how much he was able to do for himself with the little bit of education I provided was simply wonderful. I mean...he completely changed his health habits. I was so encouraged by the difference I could make in a patient's life.

FAVORITE NJMS CLASSROOM EXPERIENCE With Dr. Steven K. Keller, a professor of family medicine and psychiatry. Dr. Keller led one of my eight-week Physicians’ Core modules. As a group, we started out with one of our usual scripts in which we were ordinarily required to do a lot of role-playing and take turns as the patient. Instead, Dr. Keller brought in a fake patient every week. We followed several different vignettes, tried to ask good questions, practiced providing treatment recommendations, and learned a great deal about interacting with patients. It was fantastic. Having a visitor in the room forced us to stay on our toes and to be the best student doctors we could be. Overall, I have truly enjoyed all of the clinical experiences of the first two years and I really can’t wait to start seeing patients in June.

ON HER LIST OF CONCERNS Preventive care for everyone. I am hopeful, perhaps naively so, that we will figure out a way to make this happen. Though I am not sure what the solution is, preventive care just makes sense because it has the potential to improve patients’ quality of life, decrease the incidence of chronic disease, and lower the overall cost of healthcare.

THE INFORMATION HIGHWAY Technology, including the Internet, has the potential to aid everyone involved in medicine. I have been learning how to utilize my PDA (Personal Digital Assistant). The programs on it condense what we’ve been taught in our classes along with the most recent and reliable clinical recommendations. This tool allows me to have a tremendous amount of information at my fingertips including the answers to medical problems, contraindications and other things. It also increases the speed with which I can respond to patients’ questions. Instead of saying, “I’ll get back to you,” I can look up the answer right there. We, as doctors and medical students, aren’t the only ones with information at our fingertips; patients also have access to a plethora of research via the Internet. When the information is reliable and useful, the Internet can provide patients with an incredibly powerful tool that can help doctors. Being informed about your own case or able to say, “I’ve read this article, what do you think?” makes the job of diagnosis and treatment easier.

FUTURE PLANS I’m very interested in pediatrics though I’m certainly going through medical school with an open mind. While I know that I just love the pediatric population and I can imagine myself helping children and families make good choices, we’ll see what kind of experiences I have over the next couple of years. They will all help direct the path of my career.

During his 40 years as a pediatric neurosurgeon, he has made a point not only to care for his patients and their families, but to devote his energies to improving the health of healthcare in our country. As a department chair at the state’s flagship medical school, he has a lot of contact with students—the physicians of tomorrow. “From my perspective, the challenges they face are immense,” he admits. Professor and chair of the Department of Neurosurgery, he has served as a member of the American Medical Association’s House of Delegates for the past 20 years. He is currently President of the AMA Foundation, an AMA Trustee, founding chair of the AMA Task Force on Medical Liability Reform, current chair of the AMA Task Force on Quality and Patient Safety and likes to point out, “The motto of AOA, our medical honor society, translates as ‘chosen to serve the suffering.’ We are fortunate in being able to serve.”

MAJOR CONCERN That more than 46 million Americans are without health insurance and the number continues to grow.

MONEY MATTERS Reimbursements to physicians for services provided to Medicare patients continue to decline—at a time when the baby boomers are swelling the ranks of this patient population. Do you realize that the U.S. spends more per person on healthcare—15.4 percent of our GDP—but is only 5th in the world in terms of quality?

CONFIDENCE LEVEL High. In spite of these growing concerns, I am confident that many of our students will rise to the ranks of healthcare leadership to influence and effect change for the betterment of our society. Yes, the challenges are great, but I believe their education at New Jersey Medical School will well-equip them for the journey ahead.
Forty-year-old marathoner Tim Reynolds, who was paralyzed from the waist down in an automobile accident six years ago, isn’t walking yet. But his empathy, his compassionate vision and his insistence on living life to the fullest have already provided the perfect impetus for just such a possible outcome here at New Jersey Medical School (NJMS).

“I still participate in marathons,” says this soft-spoken husband, father of three, and successful businessman. “I had done about 11 before the accident and have participated in six since then. It’s exhilarating crossing the finish line,” especially when his wife, Caroline, is waiting on the other side with Max, Emily and Chloe. He also swims regularly, bikes with his kids, commutes daily to Manhattan on the ferry to a demanding full-time job, travels extensively and can’t wait to get back to scuba diving on an upcoming family safari to Africa. “I’ve been snorkeling since the accident but not scuba diving and I found a place in Kenya that has facilities for handicapped people so I’m thrilled about being able to dive again.”

A driving, optimistic, and financial force behind The Tim Reynolds Family Spinal Cord Injury Laboratory at NJMS, which opened last November, Reynolds laughs about the New York City Marathon in particular. “New Yorkers are such interesting, bi-polar kind of people. They are either in the ‘get-out-of-my-way’ mood or they’ll travel 20 miles out of their own way to help you. Marathons are thrilling and the fans are always incredibly enthusiastic about everybody in the race, particularly people in wheelchairs.”

Now, put yourself in Reynolds’ place for a closer look at the awesome aspect of this man’s ability to be empathetic in spite of everything. It’s not all about the $2 million he has donated to the Foundation of UMDNJ for the new lab on campus, or the nightmare he has endured. In fact, it’s not only about the new researchers and clinicians being recruited to NJMS from leading spinal cord injury centers and universities across North America and from as far away as Sweden who are coming to work on a cure for paralysis. In actuality, the fact that Tim Reynolds wants personally to get up and walk again is only part of the story.

Here’s what happened. A founder of Jane Street Capital, an international powerhouse in derivatives trading with headquarters in New York, Tim had left a company holiday party at a restaurant in lower Manhattan after an evening of fun on Dec. 13th, 2000. Out on the street, he tried to hail a cab at first. Now, even his favorite surgeon, Robert Heary, MD, an NJMS professor of neurosurgery—a guy who sees all kinds of physical catastrophes on a regular basis—can’t let go mentally of this tragic, unfair slap of fate on that night. “We’re always telling people not to drink and drive. Here is an incredibly responsible individual. Tim Reynolds didn’t. To have something like this happen in that setting is what makes this case even more tragic and memorable.”

When a private car service driver spotted Reynolds there in Manhattan and offered to go the distance across the Hudson to his home in Monmouth County, he climbed easily into the backseat of the Lincoln Town Car and closed his eyes. The next thing he recalls is waking up as the Lincoln crashed into the median on the Pulaski Skyway in Jersey City. Upfront, the driver had passed out.

“Wake up. We just had a bad accident. We need to move the car before we get hit,” yelled Reynolds, who was pinned between the backseat and a car door. It was too late. A sports car...
New York City marathoners cross the Verrazano Bridge on race day.
slammed into the rear of the limo, crushing Reynolds further into the back door, blasting glass everywhere and battering his body into life-threatening trauma. His lungs were bleeding and his spine was a crushed and shattered mess. “It was scary, very scary, very hard and tremendously discouraging. I was trapped and fighting for air in the back of the car for 45 minutes,” he recalls. Later, he waited while the right doctor was roused from bed and rushed to University Hospital in the middle of that long night.

That would be Heary, an experienced neurosurgeon and director of The Spine Center of New Jersey. Heary explains, “Tim sustained a T-9, T-10 fracture subluxation which left him with permanent spinal cord injury.” The T stands for thoracic and injuries below this point result in paraplegia though hands, arms, head and breathing aren’t usually affected. He had no movement of his legs, no feeling, no control over anything below his rib cage. Surgery lasted five hours and “was complicated,” the doctor recalls, because both the cord and the canal had to be forced back into correct alignment.

Reynolds’ daughter Chloe was just three months old. Max was three and Emily had turned one.

“I did this spinal surgery to realign him, to stabilize him and to give him the best opportunity for a good quality of life beyond his injury.” But the news was terrible from a neurological point. This was a devastating injury and the only small “glimmer of hope,” Heary explains, was that the spinal cord itself had not been “transected. Since the cord was anatomically preserved, there could be a future treatment down the road that might help.” However, with Reynolds’ type of injury, given the present state of research and even the fact that Tim was the ideal patient—“Tim is a hard-working, motivated, healthy individual who does everything you ask him”—he has almost no potential for walking again.

But Tim Reynolds is ever the compassionate optimist and here is where his extraordinary empathy comes in.

“Imagine,” he asks, turning the table on his situation, “having the kind of job where you’ve got to deliver the worst possible news you can dream up, and you have to do this over and over again, all the time. Dr. Heary had to tell me, ‘You are never going to walk again.’” Then, out at the Kessler Institute for Rehabilitation in West Orange, where Reynolds spent time recovering, he credits Barbara Benevento, MD, who “was also amazing, overworked, empathetic, running from room to room, morning ‘til night,” always positive and there for patients.

“What I find absolutely thrilling is to imagine the turnaround that a cure for the paralysis of spinal cord injury would have on the lives of physicians like Heary and Benevento. How emotionally fantastic it would be for these doctors to be able to tell someone who has been paralyzed and is waking up after surgery that, ‘It’s all going to be about learning to walk now, doing your sit-ups and stretches, leading a normal life, and yes, wiggling your toes.’ They’d be able to guide people into the happiest moments of their lives as opposed to the most tragic. Too much of their professional lives have been spent counseling the victims through unimaginably horrific news with words like…you’ll never walk again, you only have so many months to live…dangerous surgery…chronic pain…dependence…just so many bad, sad things they have to say to people.”

It was during his weeks at Kessler that Reynolds looked seriously at his future. “Rehabilitation is hard and discouraging,” he admits. While there, he met many others who had been recently injured in similar ways and realized that few people died from injuries like his. “I kept thinking, ‘This is not good. I don’t know what my life is going to look like in 10 years but I know that 10 years will pass. So, since tomorrow is going to come and then the next year, and the next, I think I’m going to do my best to try as hard as I can.” He also recalls fellow patients who were so discouraged that they just couldn’t try so
they didn’t. “They’re still alive. It must be terrible for them.”

Reynolds believes that while money is being spent on keeping handicapped people alive in depressing apartments and assisted living centers, little goes toward curing their injuries and enabling them to achieve independence. “Many of these people have little to look forward to beyond hoping that someone will eventually come by to change the television channel or give them a sip of water. This just depresses the hell out of me.”

The relationship between Reynolds and Heary deepened three years ago when Tim was given the death sentence he thought he had dodged. A complication from the original accident developed, threatening to cause complete quadriplegia and brain infections that would kill him within two years. Known as a syrinx, or syringomyelia, it is like “a hole in the spinal cord that was going to crawl up the spine, eventually reaching the brain, wrecking everything as it grew,” Reynolds says.

Heary offers this explanation: “This is a cyst within the spinal cord which began to enlarge and expand, threatening his arm function.” Though a surgical procedure to repair the cyst didn’t exist, Reynolds encouraged Heary to “give it a shot. Try something.” Heary was challenged to develop a new technique. During the corrective operation, he opened up the dura mate, the protective covering around the spinal cord, and released scar tissue which was obstructing the flow of fluid in the cord. “The syrinx disappeared,” the doctor says. Later, a radiologist who did the follow-up MRI after the successful operation, used adjectives like “miraculous” and “unbelievable” in his written report describing the results of Heary’s efforts.

When the surgeon describes this very special case, he’s careful to deflect attention away from himself and will even insist, “Tim Reynolds has saved his own life by energetically fighting back against this spinal cord injury.” Meanwhile, remembering this second brush with death and Heary’s surgical solution, Reynolds counters, “Frankly, I do believe he saved my life that time. It was all about a very gifted surgeon choosing to work extra hard to try against the odds for a desperate patient.”

At his Jane Street Capital office in Manhattan, Reynolds has managed to help bring together people from very different backgrounds who share core values. “They are all exceptionally smart and dedicated to working together towards worthwhile goals.” As a result, his firm, just seven years old, is extremely successful with 130 employees and offices in New York, Chicago, Tokyo, London and Rhinebeck. He envisions the same thing happening at The Tim Reynolds Family Spinal Cord Injury Laboratory. (See story on page 40.) “This has always been a unique affliction,” Tim continues. “Without a lot of money, without other exceptional scientists and clinicians acting together, a cure for spinal cord injury might remain out of reach for many decades.”

Reynolds likens the modern world to that of the 16th century. “Scientists today are the new explorers at a thrilling dawn of understanding. Because of stem cell research, gene mapping and so many other medical breakthroughs of this decade, anything can and will happen. Explorers haven’t had such an opportunity to revolutionize the world since Magellan and his contemporaries sailed bravely to the west. Then as now, there have always been those who choose to fight science and technology, embracing ignorance over discovery.”

There is no doubt that Tim Reynolds believes in this mission. “If we’re successful, anyone who is involved in this project will be able to reflect on the way we lived our lives with a great deal of pride and satisfaction.”

When pressed to explain his accomplishments, Reynolds explains, “I guess I’ve always been a hard worker. Maybe it’s a combination of wanting to accomplish a lot, coupled with that fear of growing old and looking back on life, thinking, ‘I never really got anything done.’ It’s gratifying to be able to parlay the successes we’ve shared at Jane Street and apply the fruits towards a tremendously important goal. Jane Street’s success has proven to me the amazing results we can enjoy if we deploy enough brainpower, conviction and energy towards a worthy goal.”

Instigating a cure for paralysis certainly constitutes getting something done—maybe even creating the miracle of walking again, which would be wonderful news not just for Tim Reynolds but also for the 250,000 Americans now living with the consequences of spinal cord injury. ”
Pacemakers do more than kick the heart’s rhythms into normal. Generating measured pulses of electricity, these tiny devices can quell intractable epileptic seizures, ease unrelenting depression, and may even prove successful in tackling incessant pain. Comparable in size to a stop watch and as compact as the newest cell phones, they can pack a punch for those in desperate need.

The dramatic story of these powerful devices is not new. Although the first cardiac pacemaker implanted into a human being—at the Karolinska Institute in Sweden in 1958—failed after just three hours, one invented by American Wilson Greatbach was successful in 1960, extending the patient’s life for 18 months. In 1972, Greatbach also produced the first lithium battery to power the device. Since its introduction, the cardiac pacemaker has kept hundreds of thousands of defective hearts beating normally, and pacemaker surgery for the heart has moved into the realm of the routine. In the financial sector, it has generated a $10 billion a year industry that is still growing.

In the last 20 years pacemaker technology has really taken off, and medical science is discovering that electrical pulses may have amazing un-mined potential. The brain and nervous system are the newest and hottest targets for these impulses, and terms such as “deep brain stimulation”—referring to a pacemaker that sends pulses into specified areas of the brain—and neuromodulation—referring to the capacity of certain pacemakers to enhance or diminish nerve signals—are entering our everyday medical lexicon.

These electrical charges have proven their worth in taming terrible symptoms not responsive to medication. In 2002, the FDA approved a brain pacemaker to tone-down the spasticity and tremors of Parkinson’s disease, and in 2004, approval was given for a pacemaker that can free muscles crippled and rigid from dystonia, making it possible for the wheelchair-bound to walk again.

The potential of neuromodulation devices is now under investigation for all kinds of hard-to-manage symptoms and conditions, ranging from drug addiction to Tourette’s syndrome, and obsessive compulsive disorder to obesity. For a young industry, the list of new pacemaker indications is long: spinal cord stimulation, deep brain stimulation, sacral nerve stimulation, vagus nerve stimulation and gastric electric stimulation. Predictions are for this market to grow from $1.1 billion in 2005 to almost $3 billion in 2010.

Among the most promising of the newer devices is the vagus nerve stimulator (VNS). First approved for epilepsy treatment in 1998, more than 40,000 have been implanted.

The vagus nerve—beginning in the brain stem—is one of 12 cranial nerves that transmit critical information to and from the brain. Derived from the Latin word meaning to wander, the vagus nerve extends all the way through the chest to the abdomen, and has both motor and sensory functions. Because this nerve impacts all of the organs except the adrenal gland from the neck to the second segment of the transverse colon, its effects are far-reaching. Heart rate, gastrointestinal peristalsis,
sweating and the activities of an array of muscles—including many in the mouth—are all within its purview.

Although the vagus nerve stimulation does not cure epilepsy, seizure severity and frequency have been shown to decrease and quality of life increases. But oddly, like aspirin, precisely how it works isn’t known yet. The pulses produced by the device are thought to interfere with the erratic electrical impulses generated by the brain during a seizure, thereby stopping the seizure in its tracks.

Oftentimes, science’s major advances result from a “by-the-way” observation or a detour taken down an undefined side-path. While VNS for epilepsy has been an accepted therapy for several years, it wasn’t until 2005 that vagus nerve stimulation earned FDA approval for treating depression not responding to drug therapy. And just last year, a New Jersey Medical School (NJMS) team got the green light from the NIH to begin testing VNS to alleviate fibromyalgia pain.

The story goes that some epilepsy patients treated with the vagus nerve stimulator reported relief from depression and also an easing of pain not associated with their seizures. Gudrun Lange, PhD, professor of radiology at NJMS whose research interests include the psychological and neurological correlates of medically unexplained illnesses such as fibromyalgia, chronic fatigue syndrome and Gulf War Illness, applied to the NIH for funding to study whether VNS could alleviate the pain of fibromyalgia. Individuals with this disorder experience fatigue and chronic pain in their muscles, ligaments and tendons, as well as in “tender points” throughout their bodies.

“Only 50 percent of fibromyalgia patients actually get relief from drugs,” says Lange. “Those with this disorder have pain even at rest.”

This phase II study—testing whether the device is safe and tolerated—began in February. The team hopes to expand it into a multi-center trial at a later date.

“In order to qualify for this clinical trial, the patient must have fibromyalgia that has persisted despite the best medical treatment,” says Benjamin Natelson, MD, professor of neurosciences at NJMS and medical director of the study. Participants must also live within a two-hour drive of Newark because they will have to make multiple trips in to the study center.

The study’s first patients are scheduled to receive their implants. According to Allen Maniker, MD, professor of neurosurgery at NJMS, two small incisions are necessary. One is to place a small titanium-encased generator under the skin or muscle in the upper part of the left side of the chest just below the collarbone, the other in the neck to wrap the wires around the left vagus nerve, providing the link between the stimulator and the nerve. Electrical pulses travel through the wires to the vagus nerve, which is then thought to send these charges upward into the brain. The outpatient surgery lasts about one hour and is done under general anesthesia.

The VNS device’s power source is a lithium battery that generally lasts about 10 years. When the battery runs down, the stimulator needs to be replaced.

Thirty participants will be recruited for this part of the trial and they will be from three groups: those who have fibromyalgia alone; those who have fibromyalgia and depression; and those with fibromyalgia and depression who are too disabled to work. Men and women age 21 to 60 are eligible if their pain continues despite having tried multiple medications prescribed by one or more physicians. Patients can remain on their current medications throughout the trial. Individuals with lupus, rheumatoid arthritis or Lyme disease, or a heart or lung condition that puts them at increased surgical risk, are not eligible.

The crucial next step involves programming the VNS device using a computer, so that pulses of electricity are generated at regular intervals. Jennifer FitzGibbons, APN, who is coordinating the clinical trial, says the electrical charge is ramped up in frequency and duration as the patient’s tolerance increases.

The standard effective VNS dose for epilepsy is 30 seconds of stimulation, then five minutes without, around the clock, says FitzGibbons. “We don’t know yet what will work best for
“There are a lot of misconceptions about people with fibromyalgia and chronic fatigue,” Natelson says. “These are typically high-functioning workaholics who feel chronically sick, are in pain, and have to work around their illness. They are absolutely desperate to feel better.”

fibromyalgia, but we do have a set protocol and there is a range that we can’t exceed at each visit,” she explains. “We’re trying to find the dose that provides relief.”

She points out the advantages of the device: “It’s long-lasting, it’s non-pharmacological and the patient doesn’t have to do anything.

“There are many down-sides to medications,” she continues, “including patients forgetting to take them, sometimes serious side effects, and the need to continually refill prescriptions and their expense.”

Each participant is given a small magnet that can turn the device off if it becomes bothersome for some reason, FitzGibbons explains. “You just need to place the magnet over the area of the chest where the vagus nerve stimulator is housed.” Side effects such as hoarseness, coughing and swallowing difficulties can be stronger at first, she explains, but often fade over time.

The workings of the left vagus nerve are 80 percent upward to the brain and 20 percent downward to the gut and viscera, according to FitzGibbons. In depression and chronic pain, VNS is thought to work by impacting blood flow to the brain, and boosting the production of serotonin and norepinephrine, neurotransmitters affecting mood and pain perception.

Study participants will be recruited over a two year period. The cost of the device, the surgery, 16 visits to the center and a $50 travel reimbursement per visit are all provided free. “Also, at the end of the study, the device can be removed at no cost if the participant would like,” she says. On site battery checks will be done every six months.

“There are a lot of misconceptions about people with fibromyalgia and chronic fatigue,” Natelson says. “These are typically high-functioning workaholics who feel chronically sick, are in pain, and have to work around their illness. They are absolutely desperate to feel better.”

Another Novel Approach to a Mysterious Illness

Chronic pain causes misery, but so does chronic tiredness.

Benjamin Natelson, MD, has been researching medically unexplained illnesses for years. Disturbed sleep—which tends to extend its tendrils into the daylight hours—is often a symptom of these illnesses.

“In the case of chronic fatigue syndrome (CFS), no virus has been identified and no immune dysfunction has been discovered,” he says. “Despite many hypotheses, no one has found the smoking gun.”

The professor of neurosciences thinks that researchers may have been looking at the wrong cytokine (there are 100 of these proteins) or looking at the wrong time of day. “Cytokines are part of the body’s reaction to infection or inflammation,” he explains. “Cytokine disregulation may be behind disturbed sleep in CFS.”

There is no data yet on cytokines and sleep in chronic fatigue syndrome, he explains.

Natelson’s NIH-funded clinical trial will not study a specific cytokine, but will look at the ratio of cytokines found in the blood of CFS patients at night. Study subjects—age 25 to 55—will spend two to four nights in a sleep lab at UMDNJ-University Hospital.

“One night will be spent getting used to the sleep environment. On the second night, a catheter will be placed in the study subject’s arm so that blood can be drawn three times while she’s asleep and once while awake,” he explains.

Because “many of these individuals say when they exert themselves, they feel awful,” the researcher is also interested in determining the role that exercise plays in worsening of symptoms.

One group of participants will be studied after they’ve been given a stress test in the afternoon, and will come back that same night to be studied while they sleep.

Natelson will try to get additional funding to determine if sleep medication helps at all in CFS. “We want to know: ‘Does sleep improve with a sedative?’” he asks. “Do the levels of cytokines improve?”

And: “Why does CFS affect more women than men?” he asks. “Is there a tie-in with autoimmune diseases?

“I think immunity function is involved here,” he answers.

For these unexplained illnesses, the questions are complex and the answers far from apparent. However, Natelson, Lange and FitzGibbons have high hopes that these two novel approaches will yield a wealth of data to provide symptom relief for those most affected and to relieve the burden of disrespect for these disorders with no verifiable physiologic cause.
Greetings fellow graduates,

Life is easy if you let other people control your thought processes. The war in Iraq is a perfect example. Since all we hear is the bad news, we immediately form a negative opinion. What experience has taught me is that nothing is as bad, or for that matter as good, as it is presented. Those doing the presenting generally have an agenda and it is not always to give a fair and balanced assessment.

The same can be said for our beloved medical school. Those who are influencing the discussion have their own personal agendas. Some may be politicians who want or don’t want a merger. Others may be former employees who have an axe to grind. And although I am not a strong supporter of the media elite, they have brought to the surface what we all have known, that something was amiss at UMDNJ. And they, too, have their own agenda.

But we are physicians and we are taught not to accept what appears so obvious at morning report. The intern may have an agenda and spins the story, truthful as it appears to himself, to fit the moment. Before we decide anything about the status of the patient, we go down and have a look for ourselves. We take a moment, review the chart, look with our own eyes and draw our own conclusions.

I invite all of you to spend an hour to visit our campus and hospital and take a look. See what I see every day, energetic students working just as hard as we did—fighting the battles of life and death while gaining knowledge to save more. In fact, here’s some good news—UMDNJ recently reported that it is now the academic institution in the state with the largest amount of federal research dollars. We are all forever attached to New Jersey Medical School, for that alone we should reserve judgment. Come down, spend some time, and form your own opinion.

Reunion 2007

The Reunion/Golden Apple Awards Dinner Dance on March 3 was attended by more than 375 students, faculty, alumni and staff. The ballroom at the Sheraton Tara Hotel in Parsippany, NJ, set the stage for an exciting awards ceremony, sumptuous dinner, dancing and a special alumni dessert reception.

Carlos Machado’07, Student Council President, opened the evening by introducing Dr. Joseph DiTrollo’79, Alumni Association President, who presented the Charles L. Brown Award to Dr. Michael LaSalle’91, and the Honorary Alumnus Award to Dr. Hugh E. Evans. Dr. George Heinrich’72, Treasurer of the Alumni Association, awarded the Distinguished Professor Award to Dr. M. Yusuf Khan.

Traditionally, the highlights of this gala evening are the opportunities for alumni to gather together and NJMS students to honor staff and alumni for their outstanding service and commitment to the medical school and its students.

A Message from the President

Joseph V. DiTrollo, MD’79

Above: Members of the Class of 1982 who gathered to celebrate their 25th Reunion were: Seated, l. to r., Drs. Dorian Wilson, Margarita Perez-Fuentes and Mei-Ling Yee. Top row, l. to r., Drs. Joseph Calderone, Charles Spingola, Robert Gorman and Frank Kane.

Top: Carlos Machado’07, Student Council President, and Dr. I. Thomas Cohen, Associate Dean for Student Affairs, who was the recipient of a Golden Apple Award.
The Alumni Association-NJMS Scholarship Awards Dinner

The Alumni Association-NJMS Annual Scholarship Awards Dinner was held on November 2, 2006, in the Grand Foyer of the New Jersey Medical School’s Medical Science Building. The attendees numbered 285, including students and their parents, donors and their families, and alumni, faculty and administration. Guests enjoyed a buffet dinner, followed by the award presentations.

There were 112 named scholarships, endowed scholarships and class scholarships awarded, ranging from $500 to $5,300. Recipients were selected by the Alumni Association Scholarship Committee based on financial need, academic excellence, and community service.

Many donors and their families attended the event to personally present their awards and meet the recipients. Donors shared their personal, heartfelt and sometimes tragic stories that inspired them to establish their scholarships.

Twenty-one donors have established endowed scholarships in support of physicians of the future by contributing a minimum of $25,000. Their endowed scholarships become permanent tributes to the persons whose names they bear, and earn income, which will be awarded each year in perpetuity.

Here is an opportunity to participate in a worthwhile, fun fundraiser in support of our NJMS students.

Stop by one of the three iSold It stores listed below with items you would like to sell. They will take care of the rest: listing your items, issuing you a receipt, giving you a link so that you can watch your auctioned items sell, and shipping. Proceeds are forwarded to the Alumni Association.

Visit iSold It locations at:
285 U.S. Highway 1, Metuchen, NJ 08840
(732) 549-6770
2576 Route 22 East, Union, NJ 07083
(908) 810-7653
113 Route 46 West, Wayne, NJ 07470
(973) 237-0096
Add Muslim to this mental description and you’re not likely to come up with a United States Army officer (Major), happily married father of three little girls (all under age 4), and physician just back from an unforgettable tour of medical duty in Iraq who is in a post-doc residency program at the University of Texas Southwestern Medical Center. In fact, it was the Iraqi experience being on call 24 hours a day, seven days a week, as a general surgeon that changed Adam Hamawy’s direction in life and showed him his true calling.

“Here I am: a Muslim, an Army officer, now training to become a plastic surgeon,” he says laughing a little. Hamawy, who graduated from New Jersey Medical School (NJMS) in 1996, reports, “I like to break stereotypes. And it’s something I’ll continue to do.” People always have preconceived ideas about what an army officer, or a plastic surgeon or a Muslim should be, according to this New Jersey native, and “I’m not ever what they expect.”

A Rutgers University graduate, Hamawy was accepted at both NJMS and Robert Wood Johnson Medical School (RWJMS) but chose NJMS because the school offered the possibility of great “hands-on clinical experience.” Just one visit to campus had been convincing enough. “After touring Newark, I knew I’d be seeing more trauma cases here and a patient population in need of care.” Looking back, he says that he wouldn’t trade his NJMS education for anywhere else. Back then on that first campus tour, he thought, “This is a good place to be,” and he still believes this is true.

After NJMS graduation, Hamawy did a residency in general surgery at New York–Presbyterian Hospital–Weill Cornell Medical College. While in the city, not only did he meet his wife, Tahani, who was working in finance, but he also became one of the first patients to undergo Lasik corrective eye surgery—radial keratotomy—to fix his 20/400 vision. “When I wore my glasses or contacts, my vision was perfect or 20/20,” he explains, but without eye-gear, he fit the legal definition of blindness. As a surgeon, this poor eyesight had become a source of frustration. “When you operate, special glasses or loops are often needed,” he explains. “It can be a pain to juggle between your glasses, the contact lenses and then the loops, too.” Lasik, what was then a relatively new surgical technique, offered a solution. “It was a little scary and I didn’t tell anyone about it until afterward because if something had gone wrong, well…there went my whole...”
career.” After all, this is a guy who had always been interested in a career in surgery, even long before medical school. But the eye procedure went perfectly.

To follow his New York Hospital residency, Hamawy had been accepted into a Robert Wood Johnson University Hospital training program for cardiothoracic surgery. This was his career plan when a military obligation suddenly beckoned. “The Army told me they didn’t need cardiac surgeons but they did want general surgeons. That was in 2003 and I definitely think that things work out for a reason.”

During military training, he was stationed in Fort Riley, Kansas, and spent three years living in Manhattan—Kansas, that is, not New York—minus his tour of duty in Iraq. “Manhattan was a great place to start raising a family, but it was certainly quieter than I’m used to,” he laughs. “Very quiet with very few eating options.” New Jersey, with its smorgasbord of ethnically diverse food choices was thousands of miles away. In fact, driving an hour out of town to find a restaurant was not out of the ordinary when the young family lived there. While there, however, Hamawy did manage to become a fan of Kansas State athletics though not enough to root for them against his alma mater, Rutgers, during the Texas bowl game this past season.

“The places you go in life are all building blocks to who you are,” he says. “Every one of them offers you a new experience and a new perspective.” But for Adam Hamawy, no place will ever be stamped in his memory to the same degree as Iraq. His stint there, serving with the 31st Combat Support Hospital in Balad and later in Baghdad, lasted only from June 2004 to January 2005, a mere eight months but enough to become a real turning point. “It was the most amazing experience. There is no comparison for me.” Being a Muslim there also made everything “a little bit more interesting,” he says, “I was able to speak to some of the important issues confronting Americans and Iraqis. I could translate things from my perspective.”

Working round the clock in the hospital with a closely knit group of medical personnel, “Our job was to take care of everyone, not just our soldiers and personnel but people from every country, combatants, non-combatants, and refugees. If there was anything we could do to help them, we did it.” As a general surgeon, he treated all kinds of injuries from head to toe and it was non-stop medicine, culminating in his decision to switch career paths. “Plastic surgery had always been interesting to me, right up there on the top of my list of interesting specialties. Not all scars can be hidden beneath clothing and to be able to reconstruct someone so they can lead a normal life” after a traumatic or disfiguring injury became Hamawy’s dream.

“All of my time in Iraq was spent treating patients—there was no paperwork to do,” which can eat up big chunks of time for doctors in the states. “There was actually nothing to do there but work. It’s not like here. You don’t leave the hospital to enjoy your home and family. There is nowhere to go. You become extremely close to everyone you work with and there is a lot of cooperation between all areas of medicine, from the nurses to the emergency docs, the orthopaedists, all the specialists and support staff. You have no distractions and this leads to very good patient care.”

When asked to recall his most memorable cases, Hamawy can hardly pick...
out one or two. “Every one of my patients had a story. Every single one.” Take the young woman who arrived in the emergency room having lost both of her legs and in danger of losing an arm as well. “Though it’s not so unusual anymore to see women in combat,” Hamawy recalls, it felt unusual to the young surgeon. “The only question she kept asking over and over again was how everyone else in her group was doing.” Meanwhile, none of them had been as seriously wounded as she was. “She was just one of many, many patients. They all have stories.”

He remembers another soldier who had been hit by a sniper’s shot directly to the face. “His face was totally destroyed. Features were unrecognizable. Later, following surgery, basically, he had all of them back again.” Hamawy believes in the power of plastic surgery to change lives. He mentions children born with deformities, like cleft lip or palate, and people who have suffered a wartime injury, a trauma or a car accident—medical situations not immediately or stereotypically associated with the words: plastic surgery. “And now, there are so many innovations and new technology that the potential to do good is so great.”

Back in the states now, his UT-Southwestern program will eventually place him in at least six different hospital environments in that state. And while Hamawy has not yet spent his rotation at the Dallas VA Medical Center where he will undoubtedly meet and treat individuals wounded in Iraq or Afghanistan, badly injured soldiers are on his mind. He worries that the current administration and the news media “talk about the number of dead but don’t appear to have factored in the number of very badly injured. The number is over 20,000 so far and these cases threaten to overload the U.S. healthcare system.”

The winter weather in Texas is often beautiful, “60 degrees Farenheit,” he reports, while cold snaps hit northern New Jersey. “I don’t mind being here now but I hope to return home because that’s where my friends and family are.” Meanwhile, his wife Tahani has her mothering hands full taking care of their three girls ages 4, 3 and 10 months. “She’s so good with the kids. They can be a handful but have just started to become friends and play with one another. “I’m the first in my family to have gone into medicine,” says this ambitious home-grown hero. His brother is a computer specialist who teaches information systems and his mother still lives in Old Bridge where he grew up. “My father passed away in my fourth year of medical school so he didn’t get to see me graduate,” Hamawy recalls. “All the places I’ve gone stand out for me. But when you’ve been away as long as I have, you start realizing how good it will feel to get back home again.”

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Butterflies
by Joseph A. Cannaliato, MD, ’63

In Butterflies, the discovery of a political and business pay-to-play scandal leads to the murder of a patient in a hospital. The patient, admitted for overnight observation after experiencing minor cardiac irregularities, suddenly dies and the autopsy cannot determine the cause. Although the plan turns out to have been ingenious, two physicians uncover the truth. The book’s title is based on the phenomenon of the human butterfly effect, where one single action can profoundly influence the lives and actions of others.

Joseph Cannaliato graduated from NJMS in 1963, completed his residency training in Philadelphia and New York City, and practiced pediatrics in Paramus for 38 years before retiring in 2003. He also served as a clinical assistant professor of pediatrics at NJMS, and began writing short essays 14 years ago, some of which were published in this magazine.
B EYOND the call of duty—that describes 25 Newark community leaders participating in a program sponsored by NJMS to educate the city’s residents about health issues. Beyond the call of the classroom—that describes Ankitkumar Patel’07, who designed the program a year ago when he was an MD/MPH student. So far, more than 400 residents have learned useful information on how to reduce high blood pressure, diabetes and stroke.

PINACLE (Program in Newark Advocating Community Leaders’ Empowerment) uses a train the trainer approach with the community’s most powerful asset—its own members as teachers. These community health advocates are the driving force. Leaders attend PINACLE Institute training sessions held at NJMS every six weeks on health topics taught by NJMS students. Each PINACLE conference is followed by small “break out” sessions where attendees perform a trial run of the training they plan to deliver. “Most advocates are already leaders of a congregation so they have little problem speaking in front of groups,” Patel explains.

Patel’s interest in solving public health problems and experience as past student director of S.H.A.R.E. (Student Health Advocates for Resources and Education) prompted him to launch the program. He was determined to add PINACLE to the mix of successful student-run projects.

To improve and expand the services of PINACLE, Patel is distributing surveys to all participants to evaluate their Internet access to health information. The results will become part of his MPH senior fieldwork project. More than 150 surveys have been tallied and Patel intends to distribute another 200. He reported the preliminary results of the first 65 surveys at an AMA student research conference in Las Vegas last fall. The outcome was positive—80 percent of individuals had access to the Internet and used it regularly and 95 percent were interested in using a UMDNJ-sponsored health website.

The results prompted Patel and fellow NJMS classmates to design www.pinaclenj.org as a source of reliable health information. Still a work in progress, the site has a schedule of future PINACLE sessions, as well as health information from previous meetings.

NJMS students interested in participating in PINACLE can stay connected throughout their four years of school since Patel designed the program to evolve with the student’s schedule. “The transition into medical school is usually stressful for first year students so their involvement is focused on interacting with the community, providing screenings, and answering questions during training sessions,” Patel explains. “It isn’t until the second and third years that students forge a deeper relationship with one particular site where they can really get a feel for the culture and actually provide the training during PINACLE sessions. Fourth year students are the ‘idea makers’ who branch out and handle research projects (like developing the website) because they have already gained significant clinical experience.”

There are nearly 30 students currently involved in PINACLE.

Although Patel is just starting his professional career, his plans include staying involved in projects aimed at improving our public health system on a larger scale. Perhaps the organization he created while at NJMS will continue to expand and offer the same free health education to Newark residents that it does now. —JILL SPOTZ

When Students Teach Leaders How To Teach

ANKELI HERBIG
1960
Daniel Cowell, MD, serves as senior associate dean for graduate medical education at the Marshall University School of Medicine, Huntington, WV. His wife, Diana, is a hospice social worker; and his son is teaching in France.

Leo M. Piculli, MD, announced that his daughter Jenny was married shortly after completing her family practice residency at the Maine/Dartmouth Program.

1961
George Haddad, MD, writes that his daughter Kylee, an amputee, completed the New York Marathon in 4 hours, 15 minutes on a hand crank cycle.

Vincent Napoliello, MD, and his wife had a great time celebrating at his 45th reunion along with the Chernaisks, Wrables and the Dooleys. They are looking forward to celebrating their 50th.

Christopher M. Papa, MD, has run Partners-In-Rhyme, a free daily emailing of word definitions with limericks for the past 10 years. If alumni would like to receive this free email, please contact Dr. Papa at doxite@verizon.net.

Richard E. Pelosi, MD, is enjoying his retirement in Florida and visiting his six children and eight grandchildren.

1965
Paul Corrao, MD, is semi-retired and is interested in contacting fellow alumni in Maine. His contact information can be obtained by calling the Alumni Office.

1966
Charles E. Mangan, MD, is retired and living in Philadelphia, PA.

Vincent Oriente, MD, has been retired for 16 years and is investing in home building in Las Vegas, NV.

1967
Edward Luchansky, MD, was presented the Association of Professors of Obstetrics and Gynecology Excellence in Teaching Award in November 2006. He is a member of the faculty of the Ob/Gyn residency program and chief of the section of ambulatory services in the Department of Obstetrics and Gynecology at Bridgeport Hospital, Bridgeport, CT. He is also assistant clinical professor of Ob/Gyn in the Department of Obstetrics and Gynecology at Yale University School of Medicine. Until recently, he was also clinical assistant professor in the Department of Primary Care in the UMDNJ-School of Health Related Professions.

1968
James DeGerome, MD, was elected secretary of the Executive Board of the Digestive Disease National Coalition. He retired from practicing gastroenterology after 36 years and owns Endovest, a consulting business for the development of ambulatory endoscopy and imaging centers.

James R. Phelan, MD, retired from the U.S. Navy in 2005 and is a NASA contract physician, spending most of the summer of 2006 in Star City, Russia, supporting our astronauts as they underwent high-risk training.

1969
Harry W. Smith, MD, has been appointed assistant professor of surgery (urology) at the University of Massachusetts Medical School, Worcester, MA.

1971
James Oleske, MD, professor in the Department of Pediatrics at NJMS, was featured in The New England Journal of Medicine November 30 edition in an article titled “Pioneers in AIDS Care-Reflections on the Epidemic’s Early Years.”

1972
Thomas Dayspring, MD, was the lead author of “Fibrate Therapy in Patients with Metabolic Syndrome and Diabetes” in the September 2006 issue of Current Atherosclerosis Reports.

1974
William A. Rough, MD, is Governor of the American College of Surgeons, representing NJ. He is also President-elect of the NJ Chapter of the American College of Surgeons. Dr. Rough also announces the birth of his first grandchild in May 2006.

1975
Jeffrey Lasker, MD, left private practice to become CEO and CMO of New England Quality Care Alliance, the physician network of Tufts-New England Medical Center.

Anthony R. Scillia, MD, reports that his son, Anthony J. Scillia, will be graduating from NJMS in May 2007.

1976
Deborah Wozniak, MD, married Dr. Andrew McCabe, Jr, in May 2006. She retired from South Hudson Medical Associates in June 2006 and relocated to Manahawkin, NJ.

Stuart Shoengold, MD, is the director of the division of urology at the Newark Beth Israel Medical Center, Newark, NJ and chair of the Department of Urology at the St. Barnabas Medical Center in Livingston, NJ.

1977
Susan I. Primmer, MD, is practicing dermatology in Hillsborough, NJ. Her husband, Bob Harris, DVM, is department chair for lab animal medicine at Rutgers, New Brunswick. Dr. Primmer has been in touch with classmates Celia Fitzpatrick and Regina DeCarlo, and reports that they are doing well.

Randall B. Case, MD, completed a Masters degree in software engineering at Penn State University, PA, and began a new position with IBM as “National Leader for Clinical Transformation Services.” He is also a candidate for the Board of Directors of the American College of Emergency Physicians. Last year, Dr. Case married Jennifer, a hospice nurse.

1979
Scott B. Baron, MD, is chairman of Cardiac Services at the Mercy San Juan Medical Center in Carmichael, CA, and is board certified in internal medicine, cardiovascular diseases, interventional radiology and echocardiology.

1982
Dorian Wilson, MD, associate professor in the Department of Surgery at NJMS, was featured on NBC’s Today show on November 12, 2006. He spoke about the need for increased organ donations among minorities, especially African Americans.

Jeffrey A. Zlotnick, MD, was installed as president of the New Jersey Academy of Family Physicians.

1984
James Dunn, MD, is the residency program director of the Wilmer Eye Institute at the Johns Hopkins Hospital, and has been named the Eugene de Juan Professor of Ophthalmology.

1986
John Lonks, MD, is an associate professor of medicine at Brown University Medical School, Providence, RI.
1989
Cynthia Paige MD, assistant professor in the Department of Family Medicine at NJMS, received certification to practice acupuncture in the State of NJ, where she is a family practitioner in the New Jersey Family Practice Center.

1992
Cuneanungo Vergara, MD, is medical director of ambulatory services at Hartford Hospital, Hartford, CT.

1993
Kimberly Odell, MD, is part-time faculty in the JFK Family Medicine Residency Program and a full-time mom to two sets of twins, 6 years old and 14 months old.

1995
Marianne K. Herrighty, MD, left her private Ob/Gyn practice and is now a clinical assistant professor of Ob/Gyn at UMDNJ-Robert Wood Johnson Medical School in New Brunswick, NJ.

1996
Adam Hamawy, MD, finished his general surgery residency in 2003 and served three years in the U.S. Army, including an eight-month tour as a surgeon in Iraq. He is doing a plastic surgery fellowship at the University of Texas Southwestern Medical Center.

Julian Sanchez-Cruz, MD, is a member of the staff at HealthAlliance Hospital’s Leominster Campus in Worcester, MA. Dr. Sanchez-Cruz practiced at Morton Hospital and Medical Center in Taunton and Park View Specialty Hospital in Worcester prior to beginning his new position at HealthAlliance. He is board certified in internal medicine.

Stephen Sun, MD, presented a poster at the 2006 NAASO-Obesity Society Scientific meeting in October 2006, entitled “Self-funded, performance-based financial investment program using game theory as a model for group weight loss.”

1997
Tanya M. Solis, MD, who resides in Palestine, TX, married Bryce McKenzie on May 20, 2006.

1998
David Kim, MD, writes that he settled down in Fairfax, VA, has become a partner at Blue Ridge Orthopaedics as an interventional pain physician, and enjoys spending time with his two sons.

Peter Sunenshine, MD, has joined a radiology practice in Scottsdale, AZ, and has a daughter and son.

2000
Ravindran Rajaraman, MD, practices both internal medicine and pediatrics at Monmouth Family Health Center, Long Branch, NJ, and also works for the Ocean County Health Department for pediatric clinics. Dr. Rajaraman has privileges through Monmouth Medical Center in Long Branch, which is part of the St. Barnabas Health Care System.

2001
Stacey A. Anderson, MD, is practicing Ob/Gyn at the Martinsburg, WV practice of James Brown, MD, and has joined the medical staff at City Hospital, Martinsburg.

William Schafranek, MD, and his wife Ludmila announce the birth of their second son in November 2006.

2003
Ambareen Ali, MD, has joined Westside Health, a community health center in Wilmington, DE, after completing her residency at U. Mass Memorial Medical Center. Dr. Ali specializes in family medicine and obstetrics.

Michael Angelucci, MD, is chief resident of the Anesthesiology Residency at the San Antonio Uniform Services Health Education Consortium (Army/Air Force Residency, San Antonio, TX).

David Ferrand, MD, has finished his emergency medicine residency at Allegheny General Hospital in Pittsburgh, PA, and is working with Emergency Medicine Physicians of Gaston County at Gaston Memorial Hospital (near Charlotte, NC). He and his wife Sue recently welcomed their first child.

2004
Nicole Lacz, MD, and husband Daniel announced the birth of their second child, Maximilian, in July 2006. He joins sister Emmalyn, almost 2 years old.

2006
Laura Goglas, MD, was married in June 2006 to Stewart Robinet. Dr. Goglas is a resident in internal medicine and pediatrics at NJMS.
In any recipe for success, there are key ingredients that are critically necessary. Shake neurosurgeon Robert Heary’s hand after discussing the new Tim Reynolds Family Spinal Cord Injury Laboratory at NJMS and one of them is already evident. This physician is so passionate about the inherent possibilities in the lab that his energy is knuckle-crunching. According to Heary, spinal cord injury (SCI) has been identified as one of the key research areas in which UMDNJ will invest over the next few years. “We believe that collaborative research is the key to the development of novel therapeutic strategies for this traumatic insult,” he explains.

An active clinical neurosurgeon and one of the few spine specialists with formal training in both neurological and orthopedic surgery, he is involved in the treatment of SCI on a daily basis, and has been recruiting worldwide experts for the laboratory. “These researchers have been working at the finest centers throughout the United States and Europe. We’ll also be forming an external advisory board of members of leading spinal cord injury research foundations.”

Here in New Jersey, Heary will be joined by Nizar Souayah, MD, an NJMS assistant professor of neurosciences who is a stem cell biologist with experience creating models of spinal cord regeneration as well as transplanting stem cells. Also on the team will be: Peter Dowling, MD, head of neurological research at the VA NJ Healthcare System, a UMDNJ affiliate in East Orange, who has been designing a spinal cord impact injury model and Treena Arinzech, PhD, from the New Jersey Institute of Technology (NJIT), an experienced investigator in the development of biomaterials and strategies to improve transplant survival and function. Heary himself has authored 45 peer-reviewed journal articles, 75 abstracts, 28 book chapters and edited a textbook on spinal deformity. His work centers on spinal cord injuries, tumors, deformity, and minimally invasive surgery.

Of special note to patients like Tim Reynolds is the fact that this laboratory’s efforts will not simply focus on reversing brand new injuries. “Research hasn’t been results-focused enough,” Reynolds says. “Certain treatments have proven to be very effective in animal models but only if done within 20 or 30 minutes after injury.” That’s not the reality of life. Minutes, hours and days can be lost after a traumatic accident. Those kinds of studies are “a good way to get noteworthy research on your resume but won’t really help the people who are in wheelchairs now or who will be injured two years from now.”

During the first phase (years one and two), the investigations will focus on neural stem cells and increasing survival after transplantation. Stem cells have been praised for their ability to replace lost neurons but have poor survival rates. One theory is that neurotrophic factors play a protective role and also promote axonal growth in the spine. Axons are the primary transmission lines of the nervous system. The lab will explore everything from creating bio-engineered, neural stem cells (NSC) to replacing the damaged tissue with nerves taken from other anatomic sites. In years three to five, the bioengineered human NSCs will be evaluated as well as the benefit of adding physical scaffolds.

“If we can find success in these areas, the next step will be to move into the clinical realm to gain leg function below the level of injury in human patients,” Heary explains. “There is research that will lead to a cure but there hasn’t been enough money for it,” Reynolds adds.

For information about contributing to the effort to find a cure for spinal cord injury, contact Elizabeth Ketterlinus at the Foundation of UMDNJ, 973-972-2486, toll-free at 866-44-UMDNJ, or email ketterel@umdnj.edu.

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