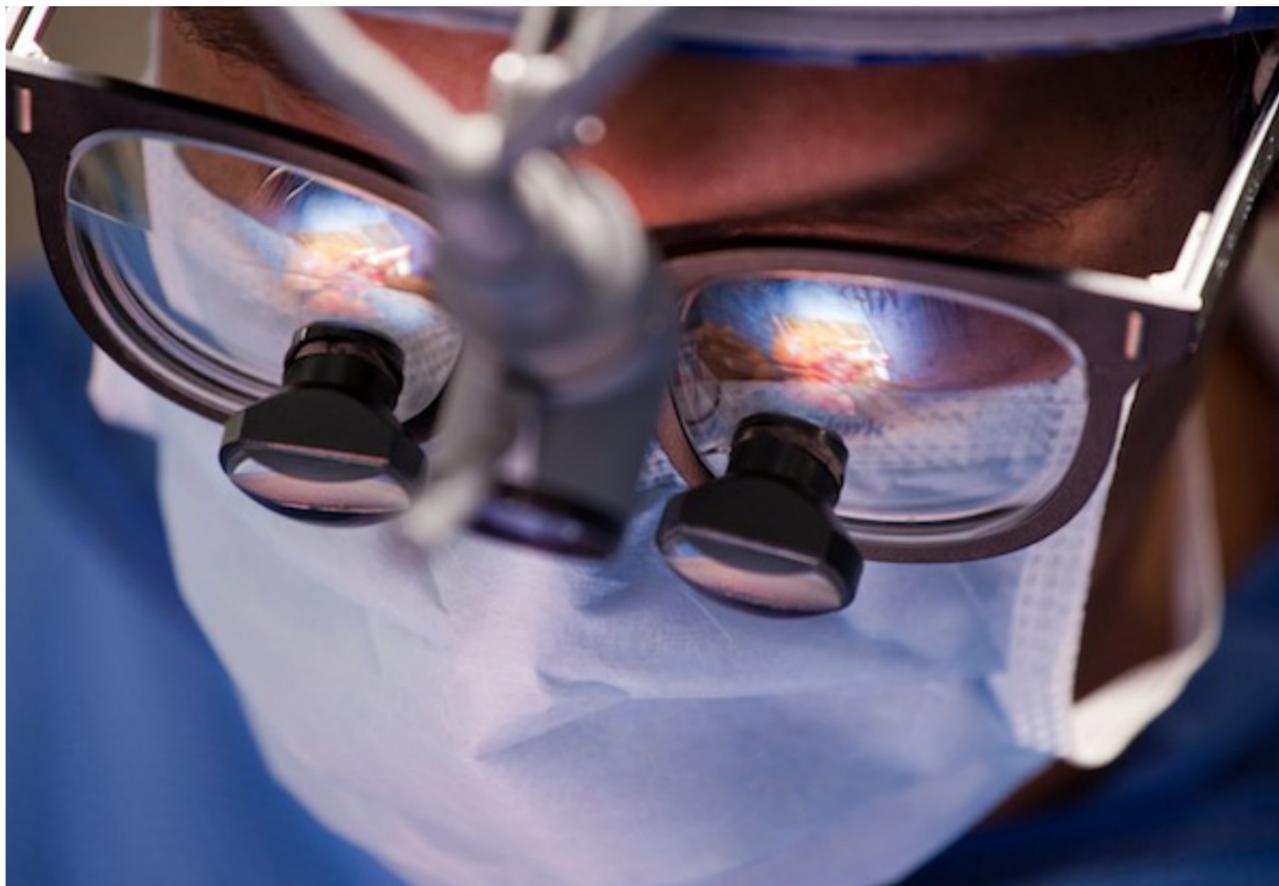


Cardiovascular Care Expands in Scope and Scale New Programs Enhance Medical Center's Expertise in Cardiac Surgery

In one of the sixth-floor ORs at NYU Langone Medical Center's Tisch Hospital, Ralph Mosca, MD, professor of cardiothoracic surgery, is about to demonstrate why he's one of the nation's top pediatric cardiac surgeons. A three-month-old boy with several severe heart defects has been anesthetized and placed on a cardiopulmonary bypass machine, which takes over the heart's job of circulating blood through the infant's body.

Standing over his six-pound patient, Dr. Mosca and his team begin working on the now-empty heart. First, the major blood vessels, which are attached to the wrong chambers, must be reassembled. Next, a large hole in the heart has to be patched. Finally, an underdeveloped aortic arch has to be reshaped.

After two hours, the repairs are finished and the moment of truth arrives, as blood flow is gradually transferred back to the child's heart. "This is when we learn if the heart can pump blood on its own," says Dr. Mosca, chief of the Division of Pediatric and Adult Congenital Cardiac Surgery. As the team watches, the walnut-size heart begins to beat. An echocardiogram shows no circulatory problems. Blood pressure is good, and oxygen saturation levels are high. "He's still got a mountain to climb," says Dr. Mosca, "but we've given him a good chance of making it."



Dr. Ralph Mosca, new chief of the Division of Pediatric and Adult Congenital Cardiac Surgery.

(continued on page 7)



SmartChart, Epic's secure online portal, enables patients to monitor and manage relevant health-related information from any computer connected to the Internet. So far, about one-third of Trinity's patients have opened SmartChart accounts.

Live from Trinity Center . . . Epic, in a Key Supporting Role, Makes Its Clinical Debut

By all appearances, Thursday, October 29, was just another day at NYU Langone Trinity Center in the Financial District. But for physicians, staff, and patients alike, it marked the start of a quiet, behind-the-scenes revolution. Epic, the computerized medical data-management system that serves, in effect, as NYU Langone Medical Center's information superhighway, made its debut at this multispecialty group practice. Seemingly overnight—though actually years in the planning—a hodgepodge of endless paperwork and patchwork software programs gave way to a sleek, seamless digital healthcare platform that makes the storage and retrieval of patient information not just patient centered, but patient empowering.

Over the next few years, as other Medical Center-owned or -affiliated practices and hospital sites come on board, Epic will impact an estimated 85% of our core operations. The state-of-the-art, fully integrated system enables authorized physicians and staff to create permanent patient medical files and to review or update these files by simply logging onto the system from any computer connected to the Internet. The system can be used to order tests and medications, create or update clinical documentation, manage appointments, and handle billing and insurance claims. For doctors who prefer to dictate their notes, a voice-recognition option is available. In strict compliance with HIPAA regulations and the Stark Law, which regulates relationships with independent physicians and their affiliated hospitals, patient privacy is protected by built-in safeguards that limit access to confidential information.

At the heart of this patient-centered system is SmartChart (see illustration on page 7), a secure online portal that enables our patients to view relevant aspects of their medical records and test results, schedule appointments, order prescription refills, and confidentially e-mail their physicians. Future upgrades will allow patients to pay bills and check their insurance coverage. "Patients seem very

(continued on page 7)



From the Dean & CEO

As we begin a new year, it is natural to reflect about everything that we accomplished over the past year, as well as to think about what the future holds. At NYU Langone Medical Center, we are proud of what we achieved in 2009, but even more excited by the opportunities that lie ahead.

In these pages, you will learn about our ongoing focus on patient-centered care, both clinically and technologically—from assembling an unparalleled cardiac surgery team to the launch of Epic, our integrated healthcare information superhighway. You can get a glimpse at what literally lies beneath our Medical Center and learn about the myriad programs and initiatives within. As always, you will also meet members of our community who are innovators in patient care, as well as others who push the boundaries of medical science every day.

The new year is also the perfect time to reaffirm our commitment to excellence in all that we do as we continue on our path, setting the standard of care as a world-class patient-centered, integrated academic medical center.

Best wishes for a happy, healthy New Year.

Bob

Department of Medicine's Online Journal Garners Second Award

For the second time in as many years, Clinical Correlations (clinicalcorrelations.org), the online medical journal launched in 2006 by NYU School of Medicine's Department of Medicine, has been honored for its excellence. The journal received the 2009 Gold eHealthcare Leadership Award for "best content among physician-focused websites." The award was part of an annual competition by *eHealthcare Strategy & Trends*, a trade magazine. It came less than a year after Clinical Correlations was named "Best Clinical Sciences Weblog of 2008" by Medgadget, a respected voice on emerging medical technologies.

Neil Shapiro, MD, clinical assistant professor of medicine, is the editor-in-chief of Clinical Correlations. He said he hoped the award would raise the journal's profile and help burnish its reputation at NYU Langone Medical Center and beyond. "We're trying to gain credibility within the medical community," he said. "Winning this award is another step toward getting there."

The website features an eclectic mix of articles, including many that are peer reviewed. In addition to medical news and synopses of recent conferences, there are answers to clinical questions, reviews of journal articles, and spirited discussions of issues relating to healthcare policy and medical ethics. Produced by Dr. Shapiro and some 20 faculty members, house staff, and medical students, the site has about 300 subscribers and gets up to 1,000 hits a day.

Martin Blaser, MD, the Frederick H. King Professor of Internal Medicine and chairman of the Department of Medicine, said the award was "extremely gratifying because it is so well deserved. Clinical Correlations is continuing to develop as a voice for the faculty and house staff of the Department of Medicine. It's an outstanding new vehicle for medical education."



Mark Jenkinson



Mark Jenkinson

In the handcycle division of the 2009 New York City Marathon, Adhiambo Mitchell, a member of the Rusk Institute's Amputee Support Group, finished 30th in the competition, with a time of 2:30:55.

Walking Tall and Standing Proud

"I've come here for some inspiration," Sarah announces from her wheelchair, looking tearfully down at her left leg, which ends in a bandage just below the knee. "Why did this happen to me?" Her audience, each member listening intently, is uniquely qualified to empathize with her. Amputees all, they have gathered one evening in October at NYU Langone's Rusk Institute of Rehabilitation Medicine to mark the first anniversary of the Amputee Support Group.

One month earlier, a blood clot claimed the lower half of Sarah's limb. Now, as a Rusk inpatient, she's struggling to come to grips with the twist of fate that turned her, overnight, from an able-bodied person into someone who will need a prosthesis and months of rehabilitation just to walk again. "I've never had so many friends look at the ceiling," Sarah continues. "When they visit, they don't know what to say. And strangers stare."

"You've got to stand proud," says Adhiambo, a bilateral above-the-knee amputee. "You'd be surprised at how impressed most people are when they look at you." He's wearing shorts that show off his two elegantly engineered prosthetic legs, having traveled here on his hand-crank racing bike—the same one he would use to complete the New York City Marathon several weeks later.

"You'll be okay," David reassures Sarah. He, too, is missing part of one leg, the result of a bicycle accident. "A year ago, I was in a wheelchair. Now, here I am, walking around."

"You're lucky—you still have your knee," adds Melvin. He originally lost just his lower leg, he explains, but complications led to a second amputation above the knee. "I had to grieve twice," he says.

The group nods. An above-the-knee amputation makes recovery much more difficult since the patient must learn to balance on an artificial knee joint. Other issues, however, like phantom pain and a radically altered self-image, are ones that everyone in the group can relate to.

This intimate exchange is exactly what Jeffrey Heckman, DO, chief resident, envisioned when he and Jeffrey Cohen, MD, clinical professor of rehabilitation medicine, formed the group. "I was working with patients who'd had traumatic amputations," Dr. Heckman recalls. "Their sudden loss left them with a lot of questions, and it struck me that the best answers would come from others who had gone through the same thing." Backed by Steven Flanagan, MD, chairman of the Department of Rehabilitation Medicine, Drs. Heckman and Cohen began monthly meetings open to all amputee patients, past and present, from Rusk and elsewhere. Other group activities, like dinners and bowling, were planned for nonmeeting nights.

"We basically tell each other the truth about what to expect," notes Pierre, a charter member. "We also have fun." Like his friend Adhiambo, Pierre is a bilateral above-the-knee amputee. Several years ago, while training for the Atlanta Police Department's entrance exam, he developed a rare condition that attacked his leg muscles.

"You folks missing one leg have it easy," says Pierre, half in jest. "Missing two legs is tough. My goal now is to walk downhill. I finally tried it the other day. I was scared, but I went for it!"

As the meeting breaks up, cupcakes are passed around. But the most sustaining things tonight are the words of comfort and reassurance. "I feel *much* better," Sarah tells her new friends, her earlier tears replaced by a smile. "Thank you."

Kickoff Event Formally Introduces CTSI

The Clinical and Translational Science Institute (CTSI)—funded by a \$30.2 million grant from the National Institutes of Health in July—was formally introduced at a kickoff presentation held on December 14. A collaboration between New York University, NYU School of Medicine, and the New York City Health and Hospitals Corporation (HHC), it is designed to help clinical investigators speed advances from the bench to the bedside. "NYU will make a major investment in faculty research," says CTSI Director Bruce Cronstein, MD, the Dr. Paul R. Esserman Professor of Medicine. "It's critical to be competitive." CTSI will leverage the expertise of researchers among NYU's health-related and clinical schools, potentially involving hundreds, if not thousands, of researchers, physicians, and clinicians. When NYU Langone was awarded the CTSI grant, it joined a network of 46 existing centers based at academic medical centers around the country. For more information, visit ctsi.med.nyu.edu.

Dr. Bruce Cronstein (left), director of the CTSI, and Dr. Judith Hochman (right), co-director, greet Dr. Louis Capponi (center), executive liaison with NYC's Health and Hospitals Corporation, at the kickoff event, held on December 14.



A bird's-eye view (circa 1920s) of the site now occupied by NYU Langone Medical Center's main campus. At far left are the buildings of Old Bellevue.

On the Waterfront

A Tale of Bedrock, Bulkheads, Britain, and Biomedicine

As NYU Langone Medical Center transforms its main campus with new structures, such as the Helen L. and Martin S. Kimmel Pavilion, it's as much concerned with the past as the future, as much focused on the soil below as the sky above. "Manhattan consists of hard, schist bedrock that stops abruptly about 100 feet east of First Avenue," explains Richard Cohen, vice president for facilities management. Until fairly recently, this steep drop-off formed the shoreline of Kip's Bay, wetlands created when the last glacier retreated 11,000 years ago, leaving behind a dense layer of decomposed rock in the trough where the East River now flows. Since then, sand, silt, clay, and river-borne organic matter have accumulated over the millennia.

Beginning in the 19th century, the marshes along the river's western flank were gradually

filled in. Today, nearly the entire campus of NYU Langone Medical Center is built on the water side of Manhattan's original shoreline. "The Skirball Institute of Biomolecular Medicine sits mostly on rock, while the foundation of Tisch Hospital is one-third rock and two-thirds landfill," says Cohen. "The Arnold and Marie Schwartz Health Care Center is about half and half, and the Joan and Joel Smilow Research Center is built completely on landfill."

With its soaring cluster of healthcare and research facilities, the neighborhood is a far cry from the swamp that abounded with waterfowl and white-tailed deer back in 1641, when Dutchman Jacobus Kip obtained a grant to develop a swath of waterfront property extending from what is now 23rd to 35th Streets and from Second Avenue to the river.

Not long after the Revolutionary War, during which Kip's Bay was the backdrop for a battle that placed New York temporarily in British hands, efforts began to expand the city's waterfront. Initially, bulkhead walls were built by sinking old wooden vessels and large timber "cribs" filled with stone to keep the fill dumped behind them from being carried away by the current. By 1865, the land had been filled to about halfway between First Avenue and the FDR Drive and was home to a host of commercial enterprises.

Following World War II, the Kip's Bay portion of the FDR earned the moniker Bristol Basin, after the war-torn ruins of that British city, which were used as fill to bolster a stretch of the highway from 23rd to 34th Streets. The remains had once served as ballast for ships returning from England, where they had discharged hefty cargoes of tanks, trucks, and artillery as part of America's contribution to the war effort.

Building on such an eclectic—and relatively weak—substrate has inspired the imagination of many an architect and engineer over the past half-century. "One thing we've learned about this site," says Paul Schwabacher, senior vice president for facilities management, "is that it presents any challenge you could imagine, and then some."

Since foundations lie below sea level, for example, so-called bathtubs—elaborate, watertight walls, like the innovative secant pile system used for the Smilow Research Center—must be constructed to hold back the East River. In addition, those portions of buildings that rest on landfill have to be anchored by hundreds of steel beams, or piles, driven 120 feet or more into the soil—a process that takes months. "The ground is like a layered sandwich," notes Cohen. "You have to penetrate landfill, clay, sandy silt, silty sand, and then claylike silt, until you reach stable subsoil that will support the building." Eventually, the piles reach a depth where simple friction holds them in place.

"It's all very complex, but doable," says Cohen. "The only limit to how high up we build is how far down we want to go."

When Care, Not Cure, Is the Goal

At Tisch Hospital, the Terminally Ill Find Comfort and Dignity in Their Final Days

As cancer deaths go, 70-year-old Jeremy's was unusually swift. In early January, he learned not only that he had cancer, but also that it had spread throughout his body. Within days of receiving this one-two punch, he was admitted to a room on 16 East, an oncology unit in NYU Langone Medical Center's Tisch Hospital. Even worse news was yet to come: his cancer was incurable and was expected to claim his life in a matter of days.

Jeremy (not his real name) and his family were stunned, anxious, and unprepared for all the decisions that had to be made with little time to spare. Thanks to the new Inpatient Hospice Service at Tisch Hospital, a joint program with the Visiting Nurse Service of New York, they received all of the assistance they needed for end-of-life care.

Soon Jeremy was moved to a private room nearby. It looked like any other acute-care room, but within hours, it was transformed into a quiet refuge where comfort care, not cure, was the goal. As a specially trained team of hospice physicians and nurses took over Jeremy's care, blood tests and other diagnostic procedures were largely curtailed, devices like nasogastric feeding tubes were removed, and certain medications were discontinued. Some 48 hours later, Jeremy died, as peacefully as possible, surrounded by his loved ones.

"Once it's recognized that palliative care [the management of pain and other symptoms] is the major focus, we can introduce hospice service as an option that will support the patient and the family," says Joseph Lowy, MD, clinical associate professor of medi-

cine and medical director of the Palliative Care Service. Dr. Lowy oversees the hospice program, which is funded, in part, by the Lucius N. Littauer Foundation.

Jeremy's family was one of the first to take advantage of the Inpatient Hospice Service, begun last year. "We've started a so-called scatter-bed service," explains Kevin Hannifan, senior vice president for hospital operations. "Acute-care beds are transformed into hospice beds as needed. In many cases, the patient will be able to stay in the same room, with many of the same medical and nursing staff." The service provides comprehensive care for the terminally ill, ranging from palliative care to education and counseling.

Hospice care is growing increasingly common. In 2007, some 930,000 patients died under hospice care in the U.S., accounting for 40% of all deaths, according to the National Hospice and Palliative Care Association. "For most families, it's a huge struggle deciding to begin hospice care, to let go of hope for a cure," says Roseanne DeRiso, RN, nurse manager of Tisch Hospital's Hematology and Oncology Unit. "But when they see the comfort the hospice team can offer a patient, most families make peace with it."

The service is a new direction for an acute-care hospital like Tisch, which by design is equipped for "heroic" lifesaving care rather than palliative care. It was piloted on the oncology unit, where the staff is already familiar with end-of-life care. It has since been expanded to include all of medicine, cardiology, the transplant service, gynecology, and the Critical Care Unit.

The program is not intended for long-term care. For patients who cannot be cured but are expected to



Dr. Joseph Lowy, medical director of the Palliative Care Service, visiting one of his patients.

survive for weeks or months, the service will provide three or four transitional days—enough time for the family to arrange for hospice care in a specialized facility or at home, where most people, according to surveys, would prefer to spend their final days.

"Even this short transition period can be hugely reassuring to a patient and family," says Kimberly Glassman, PhD, RN, senior vice president for patient care services and chief nursing officer, who helped plan the Inpatient Hospice Service. "It's important for them to regain some measure of control during this trying time, and they are very much involved in the plan of care. Giving people a 'good death,' as it's defined by the Institute of Medicine, is one of the greatest things that we, as healthcare providers, can offer."

A Melanoma Vaccine That Educates the Immune System

An eternal optimist, 28-year-old Benjamin Casson wasn't fazed when friends kept telling him to see a doctor about the mole on his arm. "I thought it was no big deal," he says, "so I waited three or four months."

It was a big deal. A biopsy at NYU Langone Medical Center revealed melanoma, the deadliest form of skin cancer. Lesions thicker than 4 millimeters are at high risk of metastasizing, and the one on Casson's arm measured 13 millimeters. The tumor was excised in January 2009, and later that month, malignant cells were found in nearby lymph nodes, where they were in danger of spreading to major organs.

Casson's oncologist, Anna Pavlick, DO, director of the Melanoma Program at NYU Langone Medical Center's Clinical Cancer Center, explained to him the urgency of enrolling in a melanoma vaccine trial under way at NYU Langone. Most patients with early-stage melanoma beat the disease, but the survival rate is much lower once it has advanced. Even after all evident cancer cells are removed, microscopic cancer cells (micrometastases) can grow and spread undetected, becoming virulent. Many melanoma vaccines, Dr. Pavlick explained, are designed to prime, or "educate," the immune system to nip such foreign invaders in the bud.

Dr. Pavlick, associate professor of medicine and dermatology, enrolled Casson in a clinical trial using an NY-ESO-1 cancer vaccine, produced at the nonprofit Ludwig Institute for Cancer Research (LICR)/Cornell University Partnership Production Facility in Ithaca, New York. The NY-ESO-1 melanoma trials—conducted by Dr. Pavlick and her co-principal investigator, Nina Bhardwaj, MD, PhD, director of NYU Langone's Tumor Vaccine Program—are part of the Cancer Vaccine Collaborative, a joint program of LICR and another global nonprofit organization, the Cancer Research Institute, Inc.

NY-ESO-1 is a protein expressed only in certain cancer cells, including melanomas. It has been prepared on a large scale by the LICR for investigators to test in vaccine trials. By preparing a vaccine incorporating this protein and then injecting it into patients with various immune-boosting drugs, investigators seek a massive immune response. Small groups of stage II and III melanoma patients are receiving the vaccine—four injections, three weeks apart—to assess safety and antitumor response to the vaccine alone and combined with other agents. In one study arm, patients receive the vaccine alone; in the other, the topical immune-boosting agent resiquimod is added to promote a better response.

"We test participants before, during, and after the study to see whether we have elevated immune functioning and levels of immune compounds like interferon gamma, so they will have these weapons available to keep the disease at bay," explains Dr. Pavlick. "This study is very focused, designed to measure immune responses rather than patient responses, but to me, patient response is always ultimately paramount."

It's far too early in the study to determine whether the vaccine significantly increases immune responsiveness, let alone survival. "All we're trying to do now is to determine how best to use the antigen and what formulation will make it most immunogenic," says Dr. Bhardwaj, professor of medicine, pathology, and dermatology. "One patient is in full remission, but we don't know if that's due to the vaccine." That patient, Benjamin Casson, doesn't know, either, but this time, he has good reason to be optimistic.



At Long Last, Those Plagued by Lupus Learn That Help Is on the Horizon

For five years, 21-year-old Susan (not her real name) has been asking her doctor if there are any new medications to treat her devastating disease: systemic lupus erythematosus, or lupus. This autoimmune disorder wreaks havoc on the immune system, causing the body to attack its own healthy tissues and organs, most commonly the skin, joints, kidneys, and other internal organs, resulting in debilitating arthritis, disfiguring rashes, organ damage, chronic fatigue, and even death. About half of those with the disease develop a characteristic purplish, butterfly-shaped rash that extends over the cheeks and the bridge of the nose.

For five years, Anca Askanase, MD, Susan's physician at NYU Langone Medical Center's Seligman Center for Advanced Therapeutics, has given her the same response: "Although we do a lot better at treating the disease, there hasn't been a new lupus drug in 50 years." At long last, that's changing. Within the next two years, Benlysta is expected to be approved by the Food and Drug Administration. Currently, patients rely on off-label drugs with severe side effects, such as steroids and immunosuppressants. (Off-label use refers to the application of a drug that is not mentioned in the approved labeling and done at the doctor's discretion.) For the nearly 1.5 million Americans stricken with the disease—mostly young women in their childbearing years—Susan says this new drug means one thing: hope. Researchers at the Seligman Center and NYU Langone Medical Center's Hospital for Joint Diseases played a major role in bringing that hope to fruition.



"This is an explosive time in lupus research," says Jill Buyon, MD, professor of medicine, "and NYU Langone is right at the center. After being in a desert for 50 years, researchers have finally found a new approach to therapy that has the potential to change the lives of patients."

Drs. Buyon and Askanase first became involved with clinical trials for Benlysta three years ago. Dr. Buyon helped design the instrument that allowed researchers to measure lupus activity in the late-stage Phase III clinical trial for the drug, while Dr. Askanase identified and evaluated the study participants. The results of the Benlysta Phase III trials, reported in November, found that Benlysta decreased the severity of lupus symptoms and reduced the amount of steroids needed to temper the disease's activity. The drug acts on a particular protein that can become destructive in patients with lupus.

The Seligman Center is also conducting six other trials of potential lupus treatments. As their clinical successes continue to mount, the team has grown to include a dozen physicians, nurses, and coordinators. "We're in the vanguard of lupus research," says Dr. Askanase, assistant professor of medicine. "What makes our center unique is that patients move out of the exam room and into roles as active research participants in studies for new therapies, and registries. Here, clinical care and scientific research are housed under the same roof, under the expert supervision of physician-scientists."

"It's been dark for so long," says Susan, "but finally, the future feels bright."

For Socially Anxious Teens, a Program That BOOSTS Self-Confidence

When 14-year-old Debbie (not her real name) woke up on September 2, 2008, she knew the first day of high school would be tough—just not this tough. After all, she was stepping out of the comfort zone of the elementary school she had attended since kindergarten, located a few blocks from her home. "I was terrified," she recalls. "Probably the worst thing was so many people walking into different classes." Nor could Debbie handle the lonely excursion to the lunchroom. "I had nobody to sit with," she confides.

Debbie's discomfort went well beyond the typical first-day-of-school jitters. She's been diagnosed with social anxiety disorder. The condition, characterized by an intense fear of feeling embarrassed or being rejected, affects an estimated 4 to 9% of adolescents. Starting conversations, making friends, answering a teacher's question—these are just some of the situations that disable her.

"These teenagers stay on the sidelines," notes Carrie Masia Warner, PhD, associate professor of child and adolescent psychiatry and pediatrics, and associate director of the Anita Belfer Saltz Institute for Anxiety and Mood Disorders at NYU Langone Medical Center's Child Study Center.

"They may keep their head down. They tend to avoid social contact," says Dr. Masia Warner. "These kids really want friends, but they're scared of rejection—too scared to say, 'Do you want to catch a movie this weekend?' The fear causes considerable distress and impairment in social functioning."

Such behavior, research shows, not only greatly disrupts the ability of such children to develop friendships during a formative period in their lives, but also may put them at risk for compromised academic performance. Some are able to work through these issues on their own. But if social anxiety persists into adulthood, it can lead to difficulties with intimate relationships, an inability to work, and depression.



That's why Dr. Masia Warner developed Bringing Out Our Shy Teens (BOOST), an intervention program designed to help teens like Debbie shed their fears. "They overestimate the negative," says Dr. Masia Warner. "They believe all social events will have catastrophic consequences. We teach them to think more realistically."

That's the role of Clark Goldstein, a psychology post-doctoral fellow who leads the sessions that are at the heart of the program. When a youngster frets, "I won't know what to say—I'm afraid I'm going to look weird," Goldstein tries to pin him down on what that means. The repetitive process, known as cognitive restructuring, helps the youngster reevaluate and neutralize excessive negativity. "It's like peeling an onion to help them identify their own thoughts," explains Goldstein. "Over time, their anxiety level drops."

The central part of therapy is when the youngsters are asked to do the very things they fear. It's called "exposure," and it's a key component of the 16-session program, one they can practice on their own. For Debbie, that meant introducing herself to somebody—like the guy at school who plays the guitar. It helped that Debbie plays the guitar, too. "I was actually able to do it," she beams.

Yet, much more will be demanded of Debbie and the other participants. Will they be able to buy—and then return—a store item, for example, or handle the embarrassment of getting on a bus with insufficient fare? These are the kinds of awkward social situations they're taught to master.

"Our goal," says Goldstein, "is not to make them the life of the party or to take away anxiety completely. It's to help them make decisions based on what they need to do in life."

For more information on the Child Study Center's BOOST program, call 212-263-8676.

Enabling the Disabled

HJD Program Helps Sidelined Workers Get Back in the Game

Behind one of New York City's countless anonymous doors—this one at 63 Downing Street—the Occupational and Industrial Orthopaedic Center (OIOC) helps keep the gears and hinges and levers of the world's busiest metropolis in good working order. When making a living takes its toll . . . when overused human parts start to wear out . . . when moving around hurts so bad that even a labor of love becomes a dreaded chore, the healer of last resort is often the OIOC. The center, part of NYU Langone Medical Center's Hospital for Joint Diseases, serves the city's vast workforce by treating job-related musculoskeletal problems, primarily back and neck injuries, back strains and sprains, and cumulative trauma disorders. It enables the disabled, putting dancers back on their feet, and cops back on their beat.

With 16 staff members representing 12 nationalities, the OIOC is a virtual microcosm of the city. "We're a multinational, multidisciplinary team that serves working people," says Margareta Nordin, PT, DrMedSci, who was invited from her home in Sweden to found and direct the OIOC program 25 years ago. "Our patients have ranged from a 19-year-old construction worker to an 86-year-old sculptor. We meet plenty of people who have two to three jobs. The work ethic in this city is amazing."

A cornerstone of the OIOC is its Return to Work program, an intensive rehabilitation regimen demanding four hours of daily therapy. The day begins with more than two hours of physical reconditioning, followed by a session with a psychologist and 45 minutes of education on self-care strategies. The program runs for four weeks, though most patients are back to work in two or three. The success rate: 95% of patients return

to some type of work, and 90% return to their previous position.

"It's not so common for the medical community to think of returning to work as the desired outcome," explains Dr. Nordin, professor of orthopaedic surgery and environmental medicine.

"The conventional goals are to abolish pain or cure disease. But our goal is to make the patient work *able*."

Most patients arrive at the OIOC with a case of kinesiophobia—they're afraid to move because movement causes them pain. "For the musculoskeletal system, though, immobility is death," says Dr. Nordin. To recruit the body's own restorative powers, OIOC patients learn quickly that they must move themselves. The program does not rely on passive treatments such as heat application, acupuncture, or massage, all being treatments that require the therapist—rather than the patient—to take action.

"When we restore their ability to function, they recover not only their income but their identity," says Dr. Nordin. "If you spend most of your life thinking, 'I am a teacher,' then what happens to your self-esteem when you no longer can teach? People lose themselves when they lose their capability to work."

Transcending traditional physical therapy, the OIOC employs a "bio-psycho-social" model to ensure patients are wholly equipped to resume a career



Dr. Margareta Nordin, director of HJD's Occupational and Industrial Orthopaedic Center.

in continued good health. The program combines the expertise of physicians, physical therapists, psychologists, and ergonomists, but Dr. Nordin emphasizes that one of their most important skills is listening. From the moment a patient arrives, the receptionist listens for a hook: a psychological inroad that reveals a core problem and hints at a path to recovery.

For one 50-year-old man, the hook was hoops. Shooting baskets with friends for an hour each week had been his sole source of peace and leisure. But "everything on him was creaking," Dr. Nordin recalls, and pain in his back and knees had sidelined him from work and play. The team at OIOC restarted the man on 7, then 10, then 20 minutes of basketball per session. Within a few weeks, he was back on the court—and back on the job.

"Our patients really appreciate that we listen to their preferences," says Dr. Nordin. "We go to great lengths to learn what they like to do and which therapies are most helpful. Then, we can apply our framework of exercise, education, and cognitive behavioral therapy to untangle their problems. That's what I love about this work. People get better."



Dara Weiss, LCSW, senior social worker, on the Pediatrics Unit of Tisch Hospital.

9:30 a.m. Like most days, Dara, one of 40 social workers at NYU Langone Medical Center, meets with the two other pediatric social workers on the ninth floor of Tisch Hospital, which consists of a 34-bed general pediatrics unit and the 13-bed Laurence D. and Lori Weider Fink Pediatric Intensive Care Unit, to discuss patient care plans and therapeutic needs. She also coordinates interdisciplinary rounds, where patients' needs are discussed.

10:15 a.m. Dara, who spends much of her day on her feet, approaches Mercedes, who stands tensely in the doorway of her son's room. The child, a 13-year-old boy with cancer, sits by the window, engrossed in a handheld video game. Dara informs Mercedes about the hospital's Integrative Health Program, as well as the massage therapist who supports pediatric patients and their parents. Within minutes, Dara has tracked

A Day in the Life of . . . Pediatric Social Worker Dara Weiss

Dara Weiss, LCSW, a senior social worker on the Pediatrics Unit of NYU Langone Medical Center's Tisch Hospital, has one of the toughest jobs imaginable because every day, she deals with suffering children and their anguished parents, and one of the most rewarding jobs possible because she eases that suffering in countless ways. She does so by widening the circle of people who can help her patients, and doggedly matching families to crucial services. "I'm impressed by how much she advocates for her patients," says Tom Sedgwick, associate director of social work. "When she finds something they need—a medication, a support group, transportation for parents, burial expenses—she will leave no stone unturned."

down massage therapist Gunilla Asp, introduced her to Mercedes, and left them to work out an appointment. "The stress level on any unit of a hospital is high," says Dara, "whether you're a patient or a parent. A massage can alleviate some of that tension . . . at least for a while."

10:40 a.m. On her way to the next patient, Dara, who has worked at NYU Langone for 12 years, explains that not all morning meetings are quite so businesslike. Sometimes, the staff gathers after a youngster dies. "We meet over coffee and cookies to talk about what went wrong or right. It's really a way to check in with each other." The unit performs better, she explains, when its members can offer mutual support while facing an inevitable reality of their work. "I've spent many a moment in those meetings crying."

10:47 a.m. Dara greets 3½-year-old Ruby, whose delicate facial features, in their restlessness, betray a form of epilepsy that makes her vulnerable to acute seizures. Ruby's brain activity is constantly monitored through electrodes attached to her head and connected to a series of wires fed through a stocking cap that keeps her from tugging on them. Dara immediately makes eye contact with Ruby's mother, Grace. "What brought Ruby back in?" Dara gently asks Grace. "The doctor thought

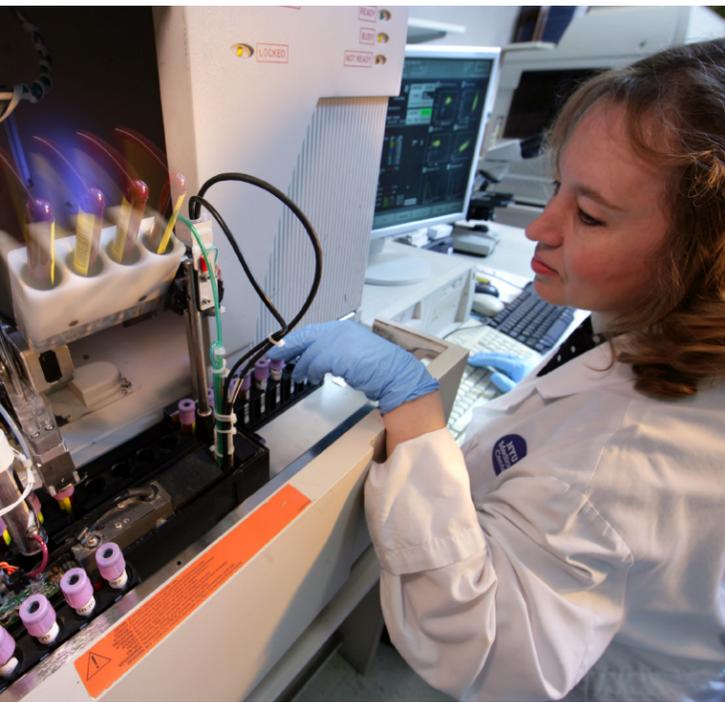
we should try another dose of medication," Grace explains. The women discuss Ruby's care, a subject Dara is clearly familiar with from the girl's previous stays on the unit. As Dara starts to explain how Grace can effectively work within the limits of her health insurance, a nearby patient starts vomiting on the floor.

11:05 a.m. Excusing herself, Dara walks over to a teenage boy who was trying reach the bathroom before getting sick but didn't make it. Dara asks a nurse if she needs help. When the nurse says, "Yes," Dara hurries over to the nursing station and organizes a cleanup crew.

11:11 a.m. "Now, where were we?" Dara asks Grace. They discuss Ruby's diet and schooling, her treatment and sleep patterns. As they talk, Grace rests a hand on the Little Mermaid blanket covering Ruby's chest, her gentle touch calming her daughter's shallow breathing. The moment is not lost on Dara, the mother of a three-year-old boy, and she remains quiet. There is always time to talk about paperwork or legal counsel or affordable housing. Her work is really about healing, and that's exactly what's happening right now between a mother and her precious little girl. "Thanks for all your help," says Grace. "Anytime," says Dara, blowing Ruby a kiss before she walks away.

A Moment in Time

*Behind the Scenes, in NYU Langone's Clinical Lab,
Each Specimen Provides a Vital Snapshot of the Patient's Health*



Using an automated hematology analyzer, Danuta Dembek, a medical technologist, can determine the cellular components of blood, counting thousands of cells very precisely within about three minutes.

About 1,200 times a day, a pill-shaped canister lands in a carpeted bin at NYU Langone Medical Center's Clinical Lab, arriving via a pneumatic tube system. Blood, sputum, urine, and other body fluids are tested 24/7, 365 days a year by a staff of some 150 certified technologists, who perform some 5 million tests annually. (Tissue samples are sent to the Pathology Lab.) Their work is among the most vital behind-the-scenes expertise at the Medical Center: more than 70% of physicians' decisions are based on such test results.

"We aim for an error rate of zero," says Irina Lutinger, senior administrative director of the Clinical Lab, located on the third floor of Tisch Hospital. A former concert pianist in her native Ukraine, Lutinger values precision and promptness, and she is well suited to her work. Each specimen is bar-coded the moment it arrives, and then tracked in a database. Human error, once a major problem for labs like this one, is kept to a minimum by using the latest technology.

The lab has four main areas: chemistry, hematology, microbiology, and the blood bank, where blood is typed and blood products are prepared. In the chemistry lab, a specimen may be spun and/or put on ice, then loaded into an analyzer. Using reactive substances called reagents, the analyzer runs hundreds of tests for everything from glucose and potassium levels (the most common tests) to hormone levels. Test results generally take two to four hours, but those for patients in the Emergency Department and the operating rooms are ready in less than an hour.

While the bulk of routine tests are automated, technologists rely on their instinct and experience to spot nuances. "I don't foresee a time when machines will be able to replace people in the lab," says Lutinger. If test results are critically abnormal, the technologist will scrutinize the sample to rule out certain problems. There might not be enough of it, for example. It might be too old. It could have been drawn or preserved improperly, contaminated, or overheated. A medication could have thrown off the results.

If your doctor suspects that you have a bacterial or fungal infection, your sample will be cultured in the microbiology lab, where a technologist may confirm this by its telltale smell, color, or texture. In the hematology lab, blood cells are examined under a microscope for abnormalities in shape, structure, and count.

"Each specimen captures a moment in time," explains Lutinger. She notes that body chemistry is always changing according to diet, sleep, time of day, general health, and so on, and accordingly, so do many test results. Specimens are saved for up to several weeks, allowing doctors to retest or run different tests on earlier samples. Then—mission accomplished—they're discarded in biohazard waste bins, decontaminated, and destroyed.

Specimens come and go, and there's a constant flow. "The laboratory is like an orchestra that never stops playing," says Lutinger. "As conductor, my job is to keep it all in tune, in rhythm, and humming."

Where You Were When the Lights Went Out

In the OR, Your Life Is in Two Pairs of Hands

Think of your anesthesiologist as the sandman with a syringe. General anesthesia is administered up to 40 million times a year in America, and the specialist who induces this "controlled coma"—though you undoubtedly had no say about the selection—is at least as important as your surgeon.

"All painkillers and paralytics are poisons," explains Thomas J. J. Blanck, MD, PhD, professor of anesthesiology and chairman of the Department of Anesthesiology. "Too much and the patient will not survive." Yet for all its alchemy and mystery—we still don't really understand how anesthesia works—it is one of the safest medical procedures, accounting for one fatality in every 250,000 cases. At NYU Langone Medical Center, anesthesiology is one of the most competitive residency programs, with 1,000 applicants annually for 18 spots.

The journey into blissful unconsciousness begins with a familiar refrain: "Please say 'ahhh.'" By examining the patient's throat as he or she is lying down in the OR, the anesthesiologist can assess how difficult it will be to access their airway. Through an IV in the hand or forearm, the anesthesiologist administers a rapid series of precisely calibrated drugs, from 5 to as many as 25 in complex cases. This potent cocktail is never exactly the same for any two people and difficult to predict beforehand. Typically, it will include an antibiotic to reduce the risk of infection, a sedative to put you to sleep, an analgesic to dull the pain receptors, an amnesiac to ensure that you forget events during a certain period of time only, and a muscle relaxant to pave the way for intubation and ensure stillness during surgery.

Intubation refers to the insertion of an endotracheal tube, needed to maintain an open airway, regulate breathing, and enable mechanical ventilation. After positioning your head into a "sniffing" position, the anesthesiologist opens your mouth with one hand and, with the other, carefully inserts a laryngoscope (shown in photo), which lifts

the uvula so that he or she can view the trachea. Then, the anesthesiologist slides in the tube, being careful not to extend it into one of the lungs, which would leave the other deprived of oxygen. The tube is flexible but exerts enough pressure against the soft tissue to leave your throat sore for a few days. "When holding the laryngoscope, the natural response is to flex the wrist," Dr. Blanck cautions residents, "but that increases the likelihood that you'll catch a tooth and knock it out."

The moment intubation begins, the clock starts ticking. Once the anesthesiologist stops ventilating the paralyzed patient manually, he has just two minutes before oxygen in the lungs is depleted, and several more before such deprivation causes irreversible damage to the brain, heart, and other organs. In most cases, thankfully, the patient is intubated within 15 to 30 seconds. Ready for the surgeon to take over, the anesthesiologist tapes your eyelids shut to prevent dryness and accidental corneal abrasions, and may place cotton in your ears.

As the operation unfolds, the dosages are continuously adjusted, and new drugs may be added in response to physiological changes. The anesthesiologist monitors not only breathing, heart rate, blood pressure, temperature, and levels of oxygen and carbon dioxide, but also changes in skin color, perspiration, swelling, and movement. At the end of surgery, the effects of certain drugs are reversed, and within one to five minutes, you're wide awake, wondering where all the time has gone.

"The period of excitement is at the beginning," notes Dr. Blanck, "but a good anesthesiologist is ever-vigilant, and his pain-management role continues through postsurgical care." To ensure that you have a first-rate practitioner, he suggests asking your surgeon for a referral. Other than that, he says, the most important things you can do are to stay as healthy as possible, abstain from food and liquids for at least eight hours prior to surgery, and try to relax. The less stressed you are, the less medication you'll need.



Dr. Thomas Blanck, chairman of Anesthesiology, with one of the primary tools of his trade: a laryngoscope. To enhance the anesthesiologist's view during intubation, the instrument is equipped with a small, bright light.



J. Thomas Roland, Jr., MD, associate professor of otolaryngology and neurosurgery, has been appointed chairman of the Department of Otolaryngology-Head and

Neck Surgery. Dr. Roland came to NYU Langone Medical Center in 1983 for his residency in surgery and completed a residency in otolaryngology, followed by a fellowship in otology/neurotology. He joined the faculty in 1992. Dr. Roland was a commissioned officer in the United States Public Health Service for two years, serving as clinical director of the Fort Yuma PHS Indian Hospital. He currently serves as director of otology/neurotology; director of otology/neurotology fellowships; co-director of the Medical Center's Cochlear Implant Center, one of the world's largest centers of its kind; and co-director of the Neurofibromatosis Type 2 Center. Internationally recognized for cochlear implantation and skull base surgery, Dr. Roland trains surgeons and performs cochlear implants

in many Middle Eastern, African, Asian, and Latin American countries. The second edition of the textbook he co-authored, *Cochlear Implants*, was recently published. Dr. Roland earned his medical degree from Temple University School of Medicine.

Kimberly Glassman, PhD, RN, has been appointed senior vice president for patient care services and chief nursing officer. She joined NYU Langone Medical Center in 1978 as a senior staff nurse in the Critical Care Unit. Since then, she has held director of nursing positions in several clinical areas, including cooperative care, medicine, neurology, and oncology services. Dr. Glassman was promoted to vice president for nursing operations in 2005, and in 2008 was appointed vice president for patient care services. In that role, her responsibilities expanded to include not only clinical nursing departments, but also patient care departments, such as Care Management and Social Work; Language, Cultural, and

Disability Services; Respiratory Therapy; Therapeutic Recreation, Child Life, and Creative Arts Therapies; Employee Health Services; and Emergency Management. Dr. Glassman has conducted research on the patient experience in several areas, including medication self-management by older adults, and has developed innovative interactive education programs for both breast and lung cancer patients. A prolific



Ronald L. Glassman

writer, she has written chapters for many nursing textbooks and several peer-reviewed journal articles. She serves on the editorial boards of *Applied Nursing Research*, *Nursing*

Economic\$ and *Qualitative Health Research*. Dr. Glassman received her RN from Massachusetts General Hospital School of Nursing and her BS in nursing from Hunter College. She earned an MA in nursing administration from NYU and a PhD in theory and research development from NYU College of Nursing.

Cardiovascular Care Expands

(continued from page 1)

Only a year ago, this operation would not have been possible at the Medical Center. But today, thanks to a new Congenital Heart Disease Program, our surgeons can perform virtually any pediatric cardiac procedure. During that 12-month span, the Medical Center—long a leader in adult cardiac surgery—has evolved into one of the top pediatric cardiac surgical centers in the New York metropolitan area as well.

This transformation began in 2008 with the recruitment of Achiau Ludomirsky, MD, professor of pediatrics and chief of the Division of Pediatric Cardiology. "I came here because NYU Langone is committed to building a world-class congenital heart disease program," says Dr. Ludomirsky, who was previously at Washington University in St. Louis. "Dean Grossman asked me to get the very best people I could find."

Dr. Ludomirsky's first choice was Dr. Mosca, a former colleague. Within days of Dr. Mosca's arrival in mid-2009, he performed the Medical Center's first-ever repair of hypoplastic left heart syndrome, in which a baby is born without a left ventricle. Since then, he has completed over 100 complex cardiac procedures.

"None of this happens in a vacuum," notes Dr. Mosca. The three-month-old boy, he explains, came into the hospital with influenza and pneumonia, and spent several weeks in critical care before surgery. "Along the way, he was cared for by pediatric specialists in critical care, infectious diseases, neonatology, cardiology, radiology, anesthesiology, and perfusion."

These advances in pediatric cardiac surgery are part of a broader expansion in cardiovascular medicine at NYU Langone. "Our goal is to position the Medical Center as a cardiovascular leader, both clinically and academically," explains Andrew Brotman, MD, senior vice president and vice dean for clinical affairs and strategy. "We're growing all aspects of our cardiovascular program, using an interdisciplinary approach that extends across departments and links basic science to bedside treatments."

This interdisciplinary approach is exemplified by the Medical Center's new Transcatheter Valve Program, which will enable the replacement of defective aortic heart valves via a small puncture site in a peripheral blood vessel, eliminating the need for open-chest surgery. The program is a collaboration between NYU Langone's Interventional Catheterization Lab, directed by James Slater, MD, associate professor of medicine, and its minimally invasive cardiac surgery team, led by recently recruited Surgical Director Didier Loulmet, MD, associate professor of cardiothoracic surgery, a pioneer in robot-assisted cardiac surgery. Surgeons will use an innovative "hybrid" OR that combines traditional facilities with a catheterization lab. The room will be completed by spring 2010, when

the new Pediatric Cardiac Critical Care Unit is also scheduled to open.

Other areas of cardiac surgery are also expanding. In mitral valve repair, where NYU Langone is a national leader, robot-assisted minimally invasive procedures will be offered under Dr. Loulmet's leadership. In addition, Dr. Mosca is establishing an Adult Congenital Heart Disease Program, which will serve a fast-growing population as improved childhood surgical treatments enable many more patients with congenital heart disease to survive into adulthood.

Partly because of these new programs and recruits, the volume of heart surgery performed at NYU Langone has increased by about 50% since July 2009. "Doctors want to send their patients to medical centers that do these complex procedures all the time," explains Dr. Mosca. "By that standard, our program is off to a great start."

"We wanted to take our cardiac surgery program to the next level, both clinically and academically," adds Aubrey Galloway, MD, the Seymour Cohn Professor and chairman of the Department of Cardiothoracic Surgery. "I think we've done that and more."

Web Extra: for an article about NYU Langone's first female cardiac surgeon, Dr. Leora Balsam, see "Heartstrings" at <http://newsandviews.med.nyu.edu/>.

Live from Trinity

(continued from page 1)

comfortable with the system," says Ira Schulman, MD, clinical associate professor of medicine and Trinity's medical director. "The e-prescription function, where refill requests go straight to the pharmacist, is amazing. The first two times patients used it, I called the pharmacy myself to make sure it worked. Each time, they'd already filled the prescription."

"It's already improved the way I practice medicine," adds Roshini Rajapaksa, MD, assistant professor of medicine. "I have less paperwork and fewer trips to the front desk. I can read a patient's entire history on the spot. I'm also getting lab results faster—often within a day. Everything is more streamlined, leaving me more time to spend with my patients or think about their cases."

Trinity was selected to lead the Epic rollout primarily because the busy, multispecialty site was ideal for test-driving the system in a diverse, technologically sophisticated setting. "We also had a group of eager physicians willing to participate," notes Andrew Rubin, vice president for clinical affairs and affiliates. As Trinity's staff and patients settle into their new electronic environment, the rest of the Medical Center will soon follow suit. One key benefit of the system is that it will link NYU Langone's main campus to its ever-expanding network of satellite offices and affiliated medical practices throughout the metropolitan area. A number of faculty group practices are slated to go live starting in the spring, followed by Outpatient Services and Registration and Billing in the fall.

The screenshot shows the SmartChart patient portal. The left sidebar contains the following menu items: My Medical Record (Health Summary, Test Results, Medications, Allergies, Immunizations, Medical History, Current Health Issues), Message Center (Inbox, Sent Messages, Contact My Physician Office, Request Rx Renewal), Appointments (Upcoming Appts, Cancel Appts, Past Appts, Schedule an Appt), My Family's Records (Family Access Settings), Billing & Insurance (Billing Acct Summary, Insurance Summary, Coverage Details), Administrative, and Preferences. The main content area features several service tiles: View Test Results, Request Prescription Refill, Schedule Appointment, View My Health Record, and Contact Us. Each tile includes a brief description and a call to action. The top right of the page displays the NYU Langone Medical Center logo. The bottom of the page includes contact information and a footer with the text: SmartChart® Licensed from Epic Systems Corporation, © 1999-2008. Patents pending.

Inside This Issue



Cardiovascular Care Expands in Scope and Scale Long a leader in adult cardiac surgery, NYU Langone has evolved into one of the top pediatric cardiac surgical centers in the New York metropolitan area during the past year, thanks to several new programs and recruits.
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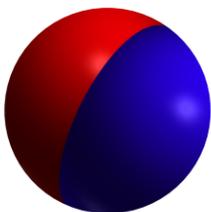
Live From Trinity Center . . . Using an online portal called SmartChart, patients at NYU Langone Trinity Center can now monitor their health data, request a refill, make an appointment, and review their insurance benefits—anytime, anywhere. Other sites will soon follow.
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When Care, Not Cure, Is the Goal About 40% of Americans die in a hospice setting. To provide comfort, dignity, and comprehensive care for terminally ill patients, Tisch Hospital has partnered with the Visiting Nurse Service of New York to create an Inpatient Hospice Service.
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Enabling the Disabled When making a living takes its toll . . . when overused human parts start to wear out . . . when moving around hurts so bad that even a labor of love becomes a dreaded chore, the healer of last resort is often HJD's Occupational and Industrial Orthopaedic Center.
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The Curious Career of Dr. Evgeny Nudler Blending, juggling, integrating, diversifying—these skills seem to come naturally to this wunderkind-in-residence, a trailblazing, Russian-born biochemist whose lab is conducting experiments in four major unrelated areas of research.
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NEWS & VIEWS

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The Curious Career of Dr. Evgeny Nudler

How an Insatiable Sense of Wonder Can Make Dreams Come True

To attain a black belt in the Japanese martial art of Shorinji Kempo, Evgeny Nudler, PhD, the Julie Wilson Anderson Professor of Biochemistry, first had to master a rigorous repertoire of punches, kicks, and blocks, and then learned to temper these self-defensive moves with acupressure, meditation, and elements of Zen Buddhism.

Blending, juggling, integrating, diversifying—these skills seem to come naturally to this trailblazing Russian-born biochemist. “I like to have many irons in the fire,” says Dr. Nudler. Currently, he and his 12 postdoctoral fellows are conducting experiments in four major unrelated areas of research.

In September, Dr. Nudler published yet another breakthrough study in the journal *Science*. He and his colleagues revealed how dangerous bacteria such as *Staphylococcus aureus* and *Bacillus anthracis*, the causative agent of anthrax, can thwart antibiotics. One secret to the microbes' success, they found, is a small molecule known as nitric oxide. Originally known for its contribution to air pollution, nitric oxide has since been implicated in physiological functions such as dilating blood vessels, transmitting neurological signals, and fighting infections.

Dr. Nudler and his team have learned that the molecule plays another surprising role: detoxification of diverse antibacterial chemicals. One upshot, he explains, is that targeting nitric oxide could take out a key bacterial defense. Commercially available inhibitors of the enzyme that produces nitric oxide, for example, could provide a “shortcut” to restoring the potency of many antibiotics.

The discovery has opened other avenues of research. “We have evidence that our human cells also use nitric oxide to protect against toxic chemicals,” says Dr. Nudler. “So that means that

cancer cells, which we want to kill using toxic chemicals, actually defend themselves using nitric oxide.” Blocking the chemical's production in tumors, then, could boost the potency of chemotherapy.

A separate project under his guidance is investigating the mechanism for the critical cellular process of transcription, which creates RNA templates for protein production. His lab has discovered RNA molecules, dubbed riboswitches, that can control gene expression by directly sensing the presence of various metabolites. Another research effort is focusing on protective cell components known as heat shock proteins, and the lab has identified the main factors that spur production of these proteins in response to stress. Finally, a new project on aging, funded in part by Timur Artemyev, is examining how bacteria can affect the lifespan of the roundworm *Caenorhabditis elegans*.

Dr. Nudler's wide-ranging curiosity developed during his childhood in Moscow, where his father, the noted microbiologist Alexander Nudler, introduced him to microbes. After earning a PhD from Moscow's Institute of Molecular Genetics in 1995, Dr. Nudler was invited to come to New York and join the Public Health Research Institute

lab of microbiologist Alexander Goldfarb, PhD, himself a Russian émigré.

Arriving here with \$100 in his pocket, Dr. Nudler joined our faculty at age 26. Ten years later, he became the youngest full professor in the School's history and won a \$2.5 million Pioneer Award from the National Institutes of Health.

“Dr. Nudler is among the most creative and productive scientists I know,” says Glenn Fishman, MD, the William Goldring Professor of Medicine, and director of the Leon H. Charney Division of Cardiology. “Typically, scientists develop an expertise in a rather narrow area of science. But Dr. Nudler has made important contributions in a broad range of disciplines. His work identifying a novel mechanism and potential therapy for ischemia-reperfusion injury is especially exciting for the cardiovascular field because this form of damage to heart muscle is responsible for significant morbidity and mortality.”

Dr. Nudler credits his extraordinary success, in part, to his lab personnel. “I feel so lucky to have been able to attract exceptionally talented and dedicated scientists who share my enthusiasm,” he says. “It doesn't matter what you do. If you find it interesting and know what questions to ask, you can get very exciting results.”

A multifaceted man, Dr. Evgeny Nudler is fascinated by nitric oxide, an equally multifaceted molecule.