“The patient is not only an illness ...
he has a soul.”
2008 was year of great beginnings at Cleveland Clinic. We opened new facilities, welcomed new leadership and inaugurated new programs and services. At the same time, we prepared to meet the challenges of a changing economic environment. Today, our finances are sound. There is a steady demand for our services. We continue to carve out a distinct identity based on quality, transparency and patient experience. As we move into 2009, our focus is the patient; our mission to provide clinical care, research and education; our determination to give our community the best experience in healthcare.

Cleveland Clinic achieved unprecedented transparency in all forms of reporting in 2008. Our Institutes published 14 Outcomes Guides, with information on patient volumes, mortality rates, techniques, services and innovations. We are determined to compete on quality, and provide whatever data is necessary to allow fair comparisons among providers. We also became the first major medical center to freely disclose the relationships of our staff physicians and scientists to industry, including speaking and consulting relationships, and to make this information part of our public staff directory.

We pursue a total patient experience that is second to none. Our chief experience officer (the first in medicine), M. Bridget Duffy, MD, is leading the assessment of all our facilities and services for comfort, compassion and healing ambience. New programs and policies are being implemented. Already we have seen patient satisfaction rise above the national average, and Ombudsman complaints drop by more than 40 percent. We have made corporate diversity an enterprise goal under the leadership of our first chief community relations and diversity officer, Anthony Stallion, MD.

In national reputation, Cleveland Clinic is once again among America’s four leading hospitals in U.S. News & World Report’s annual “America’s Best Hospitals” survey. Our cardiac services are a ranked first in the country. Rheumatology has joined our urologic and digestive disease programs among the nation’s top two, with our orthopaedics, kidney disease, ophthalmology, rehabilitation and cancer services all moving up one place in 2008. In other awards and honors, Cleveland Clinic won the American Group Medical Association’s 2009 Preeminence Award; and Cleveland Clinic nurses once again earned the highest rating of the American Nurses Credentialing Center: Magnet™ status.

Of course, the high point of the year was the dedication of the Sydell and Arnold Miller Family Pavilion and Glickman...
Our advantage is summed up in the formula Innovation \times Empathy:
Innovation to achieve quality, affordable healthcare;
Empathy to reach the emotional core of the patient experience.

Tower. We are grateful to the thousands of generous donors who made it possible for us to complete this, the largest expansion project in our history. These magnificent new buildings have transformed our main campus, improved access and added 100 new hospital beds, giving us a million additional square feet of patient care area. As the Sydell and Arnold Miller Family Heart & Vascular Institute and Glickman Urological & Kidney Institute move into their new homes, we are renovating the areas they vacated for the use of other clinical programs.

Cleveland Clinic Regional Hospitals (Hillcrest Hospital, South Pointe Hospital, Huron Hospital, Lakewood Hospital, Fairview Hospital, Marymount Hospital, Lutheran Hospital, and Ashtabula County Medical Center) have emerged as providers of choice in their communities. Their financial operations have exceeded national benchmarks. Hillcrest Hospital is now a construction site, as we build a $160 million addition. We opened the new Lerner School for Autism to more than 100 students at the Cleveland Clinic Children’s Hospital Shaker Campus. We expanded our network of family health centers with a new facility in Brunswick. Cleveland Clinic in Florida enjoyed success at its Weston location, and opened new outpatient facilities in West Palm Beach. Construction of Cleveland Clinic Abu Dhabi, a full-scale hospital and clinic in the United Arab Republic, is underway.

Our advantage is summed up in the formula, Innovation \times Empathy: Innovation to achieve quality, affordable healthcare; Empathy to reach the emotional core of the patient experience.

Cleveland Clinic is well-positioned to meet the challenges of the current economic environment. We have a long tradition of triumphing over historical adversity. Our patients and community can count on our ongoing commitment to their health and well-being. We go into this crisis strong. We will emerge from it even stronger.

Sincerely,

Delos M. Cosgrove, MD
CEO and President

A. Malachi Mixon III
Chairman, Board of Trustees
It’s an honor to chair Cleveland Clinic’s Office of Patient Experience, the first office of its kind in any major American medical center. At Cleveland Clinic, empathy and innovation go hand in hand. We know the value of advanced technology. We also understand that healthcare is an interaction between two human beings, and that listening is a critical skill. We believe in the healing power of a warm smile, a friendly greeting and the touch of a truly compassionate caregiver. We believe that every patient deserves world-class care, and that everyone who works at Cleveland Clinic has one job: to help patients heal.

The Office of Patient Experience team is working to make Cleveland Clinic a spiritually, emotionally and physically healing environment. We’re establishing benchmarks, measuring performance and seeking patient input. We’re listening to patients through patient advisory councils based in Institutes, family health centers and Regional Hospitals. We’re measuring overall patient satisfaction using HCAHPS data, and making the results available to all. We’ve created a patient satisfaction dashboard that allows managers to track HCAHPS measures and other data in fine grain for their departments. We’re mapping patient experience, and piloting patient navigator programs.

I would like to thank our CEO and president, Delos M. Cosgrove, MD, and the Cleveland Clinic Board of Trustees for supporting this cultural transformation. Patient-centered care will secure Cleveland Clinic’s national reputation for excellence. It will differentiate us in the healthcare marketplace. Most importantly, it will fulfill us and our families, as staff, employees, patients and members of our community.

Sincerely,

M. Bridget Duffy, MD
Chief Experience Officer
Family-Centered rounds

Empathy is communication. Hospitalists in the Cleveland Clinic Children’s Hospital direct a child’s care through Family-Centered Rounds. These daily bedside discussions among the child’s care providers (including specialists, residents and nurses) take place in the patient’s room, with the participation and involvement of the family.
FACE TRANSPLANT

Innovation is teamwork. Maria Siemionow, MD, PhD, led a team of six surgeons, supported by nearly 100 nurses, technicians and employees, in performing the world’s first nearly full face transplant, giving new hope to patients disfigured by trauma or disease.
At the Forefront of Surgery Without Scars

Surgeons in the Cleveland Clinic Glickman Urologic & Kidney Institute have achieved a number of surgical firsts in recent years, using single-port laparoscopic techniques. Laparoscopic surgery is an established minimally invasive technique that usually requires three to six small incisions (ports). Long, slender instruments are inserted into the ports, thereby eliminating the need for large incisions made during typical open surgery. This can mean a more rapid recovery. Single-port laparoscopic procedures are performed through a small incision in the patient’s navel, leaving almost no scar. Jihad Kaouk, MD, was the first Cleveland Clinic surgeon to utilize the single-port technique. Mihir Desai, MD, and Inderbir Gill, MD, have led teams through additional surgical firsts here utilizing the procedure. In 2008, Dr. Gill used the single-port technique to remove a kidney from a live organ donor. Dr. Kaouk successfully destroyed kidney tumors in several patients through single-port surgery. He was the first in the world to perform a prostatectomy for prostate cancer using this technique. Dr. Kaouk also worked with Raymond Rackley, MD, and Courtenay Moore, MD, on the repair of pelvic organ prolapse using this method, and with Jeffrey Palmer, MD, on treatment for varicocele in pediatric patients. Dr. Kaouk also has performed a single-port cystectomy (surgical removal of a bladder). Drs. Desai and Gill used the single-port technique to perform pyeloplasty, a procedure to treat UPJ (ureteropelvic junction) obstruction, remove kidneys and reconstruct urinary tracts (ileal ureter replacement).

First Arthroscopic-Assisted Joint Replacement/Resurfacing

Anthony Miniaci, MD, executive director of Cleveland Clinic Sports Health, and head of Sports Medicine of the Orthopaedic & Rheumatologic Institute, performed the first arthroscopic-assisted knee replacement/resurfacing. Dr. Miniaci used a new compartmental resurfacing system that gives surgeons the option of treating both the femur and tibia sides of the knee joint with a partial resurfacing technique, rather than a more invasive knee replacement. This technique is a new option for patients considering one of the current total or partial knee resurfacing techniques to relieve arthritis in only one compartment of the knee.

Cleveland Clinic Collaborates with Google®, Microsoft®

In 2008, Cleveland Clinic collaborated with Google®, the world’s leading Internet search company, to pilot features and services of a new online health offering called
OVERALL RANKING
Cleveland Clinic 4th

RANKED NO. 1
Heart and heart surgery #1 for 14 years in a row

IN AMERICA’S TOP 2
Digestive disorders 8 years
Rheumatology 1st year
Urology 9 years in a row

IN AMERICA’S TOP 10
Orthopaedics 3rd
Kidney disease 4th
Respiratory disorders 5th
Endocrinology 6th
Neurology and neurosurgery 6th
Gynecology 8th

AMONG THE TOP 20
Ear, nose and throat 11th
Ophthalmology 11th
Cancer 13th
Geriatrics 14th
Rehabilitation 19th
Google® Health. The pilot, an invitation-only opportunity offered to a group of Cleveland Clinic patients who use eCleveland Clinic MyChart®, Cleveland Clinic’s personal health record service, enrolled over 1,500 patients. It tested the secure exchange of patient medical record data such as prescriptions, conditions and allergies between their MyChart accounts to a secure Google® Health profile in a live clinical delivery setting. The ultimate goal of this patient-centered and controlled model was to give patients the ability to interact with multiple physicians, healthcare service providers and pharmacies. The successfully completed pilot extended Cleveland Clinic’s online patient services to a broader audience while enabling the portability of patient data so patients can take their data with them wherever they go — even outside the Cleveland Clinic Health System.

Cleveland Clinic and Microsoft® Corp., have formed a partnership to pilot the patient-controlled data exchange between Microsoft® HealthVault™, a Web-based personal health platform, a suite of widely-used digital medical devices, and MyChart®. The short-term pilot, begun on Monday, Nov. 3, is the first pilot in the country to follow multiple diseases in the clinical delivery setting using multiple at-home devices such as glucometers, heart rate monitors, weight scales and blood pressure monitors.

The pilot is a physician-driven, invitation-only opportunity offered to a group of Cleveland Clinic MyChart® users in the areas of diabetes, hypertension and heart failure. Cleveland Clinic plans to enroll approximately 400 patients and aims to demonstrate the advantages of using secure technology-based connectivity services to enable patients and physicians to better manage and track chronic diseases from home, using the patient’s own computer.

**Exploring Less Toxic Cancer Treatments**

Yogen Sauntharajah, MD, of the Taussig Cancer Institute, led a study that suggests cancer could be treated in a novel way that is much less toxic to healthy cells. Dr. Sauntharajah and his team altered an existing chemotherapy drug to stop the growth of cancer cells and encourage the growth of healthy cells. Current treatments kill both cancer cells and healthy cells, which leads to numerous side effects. Dr. Sauntharajah’s team found that the mechanisms that cause cancer cells to divide and grow uncontrollably are often different from the mechanisms that drive the growth of healthy stem-cells. This difference can be exploited to selectively stop the growth of the cancer cells. The alternative approach has not yet been tried in humans, but the team hopes to start clinical trials soon.

**Using Drugs to Facilitate PCI for Myocardial Infarction**

The results of an international clinical trial led by Stephen Ellis, MD, of the Sydell & Arnold Miller Family Heart & Vascular Institute should have high impact on the treatment of patients presenting with heart attacks caused by blocked coronary arteries. Before the study, it was widely believed that these patients would benefit from being given certain blood-thinning agents, either singularly or in combination, before being taken to a catheterization lab to get an angioplasty, or other percutaneous intervention (PCI).
But Dr. Ellis’ study showed that administering the drugs before PCI in a specific group of patients failed to show benefit, and may actually cause harm by promoting bleeding.

**New Magnetically Implanted Heart Valve**

Kiyotaka Fukamachi, MD, PhD, of the Lerner Research Institute is investigating a replaceable heart valve that uses magnets rather than stitches to keep the valve in the proper position. If successful, the new valve will enable shorter surgeries, less time for patients on bypass machines, and reduced risk of post-operative complications during a repeat valve replacement.

**Pediatric Multiple Sclerosis Center**

A multi-disciplinary team of specialists and researchers has come together for children in a new Pediatric Multiple Sclerosis and White Matter Disorders Clinic, in the Neurological Institute. It is the first program of its kind in Ohio. Pediatric neurologists Manikum Moodley, MD, and Gary Hsich, MD, will offer children with MS the special attention they need to manage their condition, and provide an opportunity for researchers seeking a cure.

**Campus Renewal Project Has Begun**

The first phase of a two-year project to renew Cleveland Clinic’s campus is now underway. Led by Brian Bolwell, MD, vice chair, Office of the Chief of Staff, the project involves refurbishing areas vacated by departments that are moving into the new Sydell and Arnold Miller Family Pavilion and Glickman Tower, and then backfilling other departments into these revitalized spaces. When the project is complete — a massive undertaking that will involve employees from all areas of campus — Cleveland Clinic will have: more private patient rooms; expanded outpatient facilities; unified institutes, including the Medicine Institute, which will function in a single location for the first time; single-floor service for bone marrow transplant and leukemia patients; new medical, surgical and neurological ICUs; expanded surgical services; and a consolidated Children’s Hospital, which will expand into multiple floors within the M building.

**Cancer Findings from the Genomic Medicine Institute**

**New Genetic Clue to Cancer Risk**

Charis Eng, MD, PhD, holder of the Sondra J. and Stephen R. Hardis chair of the Genomic Medicine Institute, has discovered what may become a new way to assess the risk of some people developing inherited prostate and breast cancer and head and neck tumors. She has identified 16 specific locations in the human genome where imbalances of alleles make a person more prone to prostate, breast, neck and head cancers. This development could mean better management of patient care even before a disease develops.

**Genetic Mutations have “Helpers”**

 Genetic mutations alone may not increase a patient’s risk for developing certain cancers. Dr. Eng and her team found that some genes may need enablers — or little helpers — that increase a patient’s risk of developing cancer.
MOBILE PHYSICIAN SERVICES

Empathy is house calls. Cleveland Clinic’s new Mobile Physician Services program brings geriatric specialists into the homes of frail and vulnerable patients. The electronic medical record makes it possible. More than 100 visits were made in 2008.
Innovation is new ways of seeing. Mansour Parsi, MD, investigated a new device to visualize the ducts of the liver, pancreas and gallbladder. Dr. Parsi was among the first to use the device, called a cholangioscope, to see difficult-to-remove stones, offering better treatment for this dangerous condition.
The study team identified two enablers involved in the growth of cancer. This finding could lead to the discovery and development of diagnostics and preventive care for people with certain genes. The enablers are tiny parts of human DNA called microRNA that appear to play a role in “turning off” tumor-fighting genes. When these genes are turned off, cells are more likely to grow uncontrollably and cause cancers.

**Diabetes Drug Linked to Heart Outcomes**

For the first time, a drug that is used to lower blood sugar in diabetes has been found to halt the progression of plaque buildup in coronary arteries. A study led by Steven Nissen, MD, chair of Cardiovascular Medicine, compared use of pioglitazone and glimepiride in 543 patients with Type 2 diabetes. While both drugs lowered blood sugar levels to a similar extent, patients treated with glimepiride showed progression of coronary plaque whereas pioglitazone-treated patients actually showed a slight decrease in plaque.

While all diabetes treatments lower blood sugar, this is the first diabetes treatment to be specifically linked to heart-related outcomes.

**Consortium to Help Wounded Warriors**

Cleveland Clinic and Rutgers University were named to lead one of two civilian research consortia to develop innovative medical therapies for the treatment of wounded service members. Cleveland Clinic will receive more than $10 million from a total of $42.5 million awarded over five years as a leader in the new Armed Forces Institute of Regenerative Medicine (AFIRM). George Muschler, MD, vice chair of the Orthopaedic & Rheumatology Institute, is co-director of the consortium, which includes leading clinician scientists drawn from 15 premier institutions and more than 20 commercial partners nationwide. AFIRM will accelerate the development of new technologies in the field of regenerative medicine and tissue engineering that have the potential to transform care for severely injured service members.

AFIRM’s initial focus is on the regeneration of bone, muscle, tendon, nerve and blood vessels, as well as new methods for transplantation of limb and facial tissue, the treatment of burns and reduction of scarring.

Researchers at the Cleveland Clinic lead seven therapeutic projects in the new armed forces consortium. In addition to Dr. Muschler, projects are being led by Kathleen Derwin, PhD, of the Lerner Research Institute, Timur Sarac, MD, of the Heart & Vascular Institute, and Maria Siemionow, MD, PhD, of the Dermatology & Plastic Surgery Institute.

**New Center for Autism School Opens**

Cleveland Clinic Children’s Hospital Center for Autism opened a new school on the Cleveland Clinic Shaker Campus. The new school was made possible by the generosity of Norma Lerner, and Mort and Iris November. It will enable the Center for Autism to accommodate and educate more
Identification of Enzyme Involved in Inflammation

Jane Hoover-Plow, PhD, of the Lerner Research Institute, has identified an enzyme that may play a key role in the development of cardiovascular diseases. It is associated with a substance known as plasminogen, which recruits white blood cells to the site of an injury. This enzyme can now be investigated as a target for preventive therapies.

Discovery that Adult Brains Can Replace Lost Neurons

Bruce D. Trapp, PhD, chair, Lerner Research Institute's Department of Neurosciences, discovered evidence of the generation of new neurons in areas of adult human brains damaged by multiple sclerosis. This finding challenges the widely held view that adult brains lack the ability to grow new neurons, and adds a new dimension to the search for new treatments and cures.

100th Pediatric Heart Transplant

A team including pediatric cardiac surgeon Muhammad Mumtaz, MD, cardiologist Gerard Boyle, MD, and transplant nurse Colleen Nasman, RN, performed Cleveland Clinic’s 100th pediatric heart transplant on December 2. The patient was a 6-year-old girl from Elyria, Ohio, whose heart was attacked by a virus when she was only six weeks old, leading to heart failure. Today, she continues to do well.

Multiplying Tumor-Fighting T-Cells

Several years ago, Gregory Plautz, MD, and his colleagues tested a personalized tumor vaccine that triggered patients’ immune responses to fight malignant brain tumors. Now, using methods to introduce components of tumor cells into specialized immune system cells, they have been able to dramatically increase the potency of the tumor vaccine. In addition, the team has developed better methods to amplify the number of tumor-fighting T-cells which are integral to the therapy. This translational research program has shown promise in initial preclinical laboratory studies.

children than ever before. The Center for Autism treats children with Applied Behavior Analysis (ABA), also referred to as Early Intensive Behavioral Intervention (EIBI), along with some pharmacological treatments. In addition to the school, therapists from the Center for Autism also provide individual, classroom, home and school consultation, and recently launched the Cleveland Clinic Autism Consulting Group to help other organizations incorporate the Center’s treatment practices. The group completed its first out-state-project with the development of the Ozark Center for Autism in Joplin, Missouri, and has begun a developing a new project at the Highlands Regional Medical Center in Kentucky. The Center for Autism began a new research program in 2008, and is working on cross-institute efforts to understand autism spectrum disorder from genetic to behavioral levels. It has formalized its clinical diagnostic program, and began evaluating more children (especially babies) in 2008.
The Educational Institute celebrated the 75th anniversary of continuing medical education (CME) at Cleveland Clinic in 2008. CME provides ongoing educational enrichment to practicing physicians, and is required for professional re-certification in most states. At Cleveland Clinic, these educational programs are carried out by the Center for Continuing Medical Education, under the direction of William Carey, MD.

CME began at Cleveland Clinic in 1933. That year, a course in ophthalmology was offered, and 25 physicians attended. In 2008, the Center offered almost 500 different activities to nearly 100,000 attendees.

Known for innovation, the Center operates the world’s largest academic web-based CME program (www.clevelandclinicmeded.com). Among its distinguished offerings is the Disease Management Project, a free online resource offering practical advice from Cleveland Clinic specialists on treating and managing the full range of human diseases and disorders. Also available as a printed book, the Disease Management Project has more than 250 chapters covering 13 specialties. The website also includes videos, podcasts and webcasting.

The Center also organizes world congresses for Cleveland Clinic staff. Recent events have included the World Congress of Endourology (2006), the Politzer Society (2007, an Otology meeting), and the upcoming World Congress for Bronchology (2012). These events will attract a combined 3,000 physicians from more than 30 countries. The economic impact of these three meetings on Greater Cleveland is estimated at $5 million. “It has been extremely gratifying to see the extent to which Cleveland Clinic has been committed to and fulfilled its promise to provide continuing medical education,” says Dr. Carey. “Not only to its own physicians, but to physicians and caregivers across the globe.”
**Discovery of Cell Phone-Sperm Quality Link**

Ashok Agarwal, PhD, of the Glickman Urological & Kidney Institute, has established that men who used their cell phones most had poorer sperm quality than men who used them least, suggesting a link between cell phone use and decreased fertility.

**Critical Care Transport Adds Planes, Membership Plan**

The Critical Care Transport (CCT) team has recently added two new fixed-wing airplanes to its fleet of three ground mobile ICUs and two helicopters. The fixed-wing capabilities of the team have put an end to patient boundaries in terms of access to the Cleveland Clinic. No patient is too sick or too far away to be transported to Cleveland Clinic by these specially-equipped aircraft. The CCT team consists of physicians, nurse practitioners, critical care nurses, paramedics and other allied health personnel. After a request is made for transport, the medical team is tailored to meet the needs of the patient, including infants, children and adults being transported. Last year, the CCT team completed over 3,400 pediatric and adult critical care transports from 17 states and eight countries — including Kuwait, Italy and Uruguay. CCT has also launched a new GlobalCARE membership program. GlobalCARE assures members (including students studying out of town) that if they are ever hospitalized while traveling more than 150 miles from home, CCT will provide air transport back to Cleveland Clinic — with Cleveland Clinic care beginning the moment CCT arrives.

**Protein in “Good Cholesterol” Could Predict Heart Diseases**

What makes HDL (high-density lipoprotein), the “good” cholesterol, good? Stanley Hazen, MD, PhD, of the Lerner Research Institute, may have found out. He and his team have discovered that the protein paraoxonase (PON1), which binds to HDL, promotes potent antioxidant activity in humans and is strongly linked to protection against cardiac and cerebrovascular events and death in subjects. The investigators also determined that measurement of PON1 activity serves as an important predictor of increased risk for major adverse cardiac events, even in subjects not otherwise identified as being in danger. This finding could help physicians to predict increased future potential for heart attack, stroke or death in people with no known coronary artery disease.

**New Insights into Clot-Forming Molecules**

Jun Qin, PhD, and Edward Plow, PhD, of the Lerner Research Institute, have identified the role played by the protein talin in triggering the formation of blood clots. This knowledge may contribute to new treatments for atherosclerosis, stroke and other conditions.

**Blood Transfusion: Vintage Matters**

Colleen Gorman Koch, MD, of the Anesthesiology Institute, led a study which found that heart surgery patients who receive transfusions with blood that has been stored more than 14 days are likelier to suffer complications and
Empathy is caring for our wounded warriors. Cleveland Clinic is co-leading a civilian research consortium to develop innovative medical therapies for the treatment of wounded service members. It will focus on the regeneration of bone, muscle, tendon, nerve and blood vessels, the transplantation of limb and facial tissue, and the treatment of burns.
First molecular test for thyroid cancer innovation is reducing the need for surgery. Manjula Gupta, PhD, has developed the first blood test to distinguish thyroid cancer from non-cancerous nodules. Currently, this requires needle biopsy, which is not always conclusive and can lead to unnecessary surgeries. The test was developed with Mira Milas, MD, of the Surgery Institute with Endocrinology & Metabolism Institute support.
may face reduced short- and long-term survival. Dr. Koch notes that current blood-banking inventory management of providing the older red cell units first will not change until these results are confirmed with a randomized controlled trial. Cleveland Clinic departments of Cardiothoracic Anesthesia, Thoracic and Cardiovascular Surgery (Eugene Blackstone, MD) and Laboratory Medicine and Clinical Pathology (Priscilla Figueroa, MD) have an ongoing randomized controlled trial examining the relationship of red-cell storage-duration and patient outcomes in cardiac surgery.

**Genetic Findings in Cardiovascular Research**

There were two major genetic discoveries from Qing Wang, PhD, of the Lerner Research Institute:

**Cross-Race Genetic Link to Arterial Diseases, Heart Attacks.**

A year ago, researchers found that a cluster of genetic variants on a specific region of chromosome 9 is linked to coronary artery disease (CAD) in white people in northern Europe and North America. People who have that genetic quirk are more susceptible to developing CAD or having a heart attack. Dr. Wang and his team have shown the same genetic material also is associated with coronary artery disease in the South Korean population — the first evidence of cross-race susceptibility to CAD associated with the same specific combination of genetic variants. This finding could mean better genetic screening to identify people at risk for arterial disease or heart attacks.

**Genetic Marker for Atrial Fibrillation**

The discovery that a specific gene, when mutated, is linked to the devastating abnormal heart rhythm called atrial fibrillation (AF), could lead to new diagnostic tests and treatment options for cardiac patients. Dr. Wang found the new gene — NUP155 — by analyzing the genetics of a family with severe, early-onset AF and sudden cardiac death. The new finding may provide a new molecular target to develop patient-tailored treatment strategies to prevent or treat the common form of AF.

**New Findings in Vascular Surgery**

Vikram Kashyap, MD, of the Heart & Vascular Institute, and his team have made several important findings:

**A Better Anticoagulant**

Dr. Kashyap was the first to demonstrate the safety and effectiveness of using the anticoagulant bivalirudin in patients undergoing lower extremity bypass. This small study suggests that bivalirudin is a beneficial alternative to heparin as an anticoagulant in lower extremity bypass.

**Stent as Good as Bypass for Pelvic Blockages**

Blockage of the large blood vessels in the pelvis (aorta and iliac arteries) can starve the lower extremities of blood and lead to the need for amputation. Traditionally, this condition is treated with major surgery: the grafting of a y-shaped synthetic tube to bypass the blockage. Less invasive alternatives are available, but it has not been known for certain how well they compare to the bypass graft. Now, in a ret-
Endoscopic Brain Surgery

Xiao Di, MD, PhD, of the Neurological Institute, is performing advanced minimally invasive brain surgeries using a glass rod endoscope and working through a two centimeter incision and craniectomy. In 2008 he performed Cleveland Clinic’s first endoscopic resections of multiple tumor nodules from posterior fossa; first endoscopic tethering cord release; first endoscopic hemilaminectomy for placement of a syringe-subarachnoid shunt; first endoscopic transoral odontoidectomy for basilar invagination; first para- and intra-ventricular tumor resection by using extra-endoscopic technique; and first endoscopic CPA tumor resection. He has also performed endoscopic suboccipital craniectomy for Chiari malformation type 1 for 160 patients so far. Each of these techniques is advancing the art of endoscopic brain surgery for better patient care.

Design of 3-D Scaffold to Test Cancer Drugs

Researchers developing new cancer drugs need a realistic model to test their drugs before giving them to humans. Laboratory cell cultures grown on a flat surface are not always adequate to this task. So Vinod Labhasetwar, PhD, Lerner Research Institute, and his team have designed a structure that allows researchers to grow breast cancer cells in a roughly tumor-like structure. Formed of porous biodegradable polymeric microparticles, the 3-D scaffold more closely mimics the effects drugs have in human patients. This has been verified by a study that also shows differences in the way cancer cells signal to each other in a 3-D versus 2-D environment.

First Use of New Thermal Therapy System for Brain Tumors

As part of a First-in-Man Phase 1 clinical trial, Gene Barnett, MD, Neurological Institute and Taussig Cancer Institute, used a new minimally invasive thermal system (AutoLITT™ Thermal Therapy) to destroy tumor tissue in the brain. In this procedure the patient is placed in a modified MRI scanner, enabling the operator to guide a laser-tipped probe to the tumor site while visualizing the brain and tumor temperature in real time. Carefully applied thermal pulses “cook” and destroy the tumor tissue.

Sports Medicine Gets New Home Base

Cleveland Clinic Sports Health has combined its services into a new Sports Health Center overlooking Interstate-480 in Garfield Heights. The 50,000-square-foot building includes six operating rooms for same-day surgeries, an aquatic therapy pool, MRI and x-ray imaging, as well as doctors’ offices, an indoor turf area and a rehabilitation clinic. It will be the site of Sports Health’s popular Throw Right, Golf Right and other Performance Enhancement programs. The facility expects to treat athletes at all levels of performance, from amateurs to school players and professionals.

Prospective review of cases performed at Cleveland Clinic, Dr. Kashyap has shown that outcomes from percutaneous angioplasty and stenting for this condition compare favorably to bypass grafting — a step forward for patients who hope to avoid major surgery for pelvic blockages.
First Use of Electrode Treatment for Overactive Bladder

Howard B. Goldman, MD, of the Glickman Urological & Kidney Institute, has developed what could become a new office-based treatment for overactive bladder in women. It involves the percutaneous delivery of electrical stimulation to the dorsal genital nerve. Of patients tested with the device who reported severe urgency symptoms, 81 percent reported a 50 percent or greater improvement. Dr. Goldman has also helped to design a version of the device for clinical use.

2,000th Prostate Brachytherapy Performed

The Taussig Cancer Institute, in collaboration with staff from the Glickman Urological & Kidney Institute, has performed Cleveland Clinic’s 2,000th brachytherapy for prostate cancer. Brachytherapy involves the implantation of radioactive seeds into or around the prostate.

Healthy Futures Program

A new program has been developed by Cleveland Clinic Sports Health to influence young people to adopt healthier lifestyles. Known as Healthy Futures, the program identifies social and environmental factors that influence poor health practices in youth. It empowers 8-12-year-old participants with the knowledge and motivation to make informed decisions regarding their personal health, activity level and well-being through a 10-week intervention that has been developed to meet national health education standards. The Healthy Futures program has been successfully implemented in both community settings such as the Boys & Girls Club (2007) as well as local school districts (2008). Trained medical professionals, led by Paul Gubanich, MD, of the Orthopaedic & Rheumatologic Institute, deliver the program in weekly 30-minute sessions. Healthy Futures will be adding new school districts and community sites in 2009, along with the development of a new outcomes survey and the integration of accelerometers to improve the assessment process.

A New Technique for Visualizing the Small Bowel

Bennie Upchurch, MD, of the Digestive Disease Institute is evaluating the small bowel using a new technique called spiral enteroscopy. The complex anatomy and contractile tendencies of the small bowel make diagnosis and therapy challenging. The spiral endoscope advances through the small bowel with a gentle rotation, eventually enabling visualization of areas out of the reach of standard endoscopes. Cleveland Clinic is participating in a pilot study of the FDA-approved device.

Ohio’s Only Lithotripsy for Pancreatic Stones

Hospitals routinely offer lithotripsy (shock wave treatment) to break up stones in the kidney, urethra or gallbladder. But very few American specialists know how to apply this technique to stones in the pancreas. Mansour Parsi, MD, of the Digestive Disease Institute, is the only gastroenterologist in Ohio currently using lithotripsy to break up pancreatic stones. For stones of a certain size, lithotripsy is the only non-invasive alternative to major surgery.
In 2008, Cleveland Clinic established an Arts & Medicine Institute to encourage and explore the role of the arts in healing and improving the overall hospital experience. “The arts can play a fundamental role in healing. Using the arts, we can create an environment that treats more than just physical symptoms,” says Iva Fattorini, MD, executive director of the Arts & Medicine Institute. “Our goal is to provide Cleveland Clinic patients, families, visitors, staff and employees with an environment that promotes health and wellness.”

The Institute co-sponsored the concert-symposium “Music and the Brain” with the Neurological Institute, in collaboration with course directors Kamal Chémali, MD, Neil Cherian MD, and Ali Rezai MD. The well-attended symposium included Franz Welser-Möst, music director of the Cleveland Orchestra, and was presented in parts at the Cleveland Clinic, Cleveland Institute of Music, and (traveling with the Cleveland Orchestra) in Salzburg, Austria.

The Arts & Medicine Institute sponsored the Doctor-Patient Music Connection, a “Live from Lincoln Center” New Year’s Eve program and dance performances in the Miller Family Pavilion, an ongoing concert series in the Pavilion’s Rooftop Plaza, and oversees the Art Program’s ongoing enhancement of Cleveland Clinic facilities with museum-class artworks.

The Institute has expanded Music Therapy and Art Therapy and initiated research projects to assess and measure the healing power of the arts in medicine.
Empathy is caring for children with complex diseases. Children with epilepsy need personal attention. Cleveland Clinic’s Pediatric Epilepsy Program combines advanced monitoring and treatment with compassion and caring. Patients are evaluated in the newly expanded Pediatric Epilepsy Monitoring Unit and in the Pediatric and Neonatal ICUs. With excellent outcomes, it is one of the world’s premier programs of its kind.
CLEVELAND CLINIC PARTNERS WITH GOOGLE® AND MICROSOFT®

Innovation is using new media to improve patient care. Cleveland Clinic launched partnerships with two of the world’s most important information technology companies to test new approaches to medical records access and lifestyle medicine (Google®), and new ways of monitoring patients with chronic diseases (Microsoft®). Through these partnerships, Cleveland Clinic is at the forefront of using internet technology in healthcare.
Ohio’s First Pregnancy Using Cryopreserved Eggs and Sperm

The Fertility Center at the Beachwood Family Health & Surgery Center has achieved what is thought to be the first two ongoing pregnancies in Ohio resulting from both cryopreserved eggs and sperm. Director James Goldfarb, MD, cites the teamwork of Nina Desai, PhD, Cynthia Austin, MD, Sandra Stewart, RN, and their staff for this success. Egg freezing, while still experimental, has the potential to benefit many groups of women, in addition to cancer patients who are not married. Among those who could benefit are women who are having in-vitro fertilization but are uncomfortable with freezing embryos; women in their mid-30s who have no near-term plans for starting a family; and women who are undergoing egg donation. The cryopreservation effort was undertaken with the financial support of the Partnership for Families and its co-founder Nancy Lerner Fisher.

Robotic Surgery Program in General Surgery

Eren Berber, MD, has performed Cleveland Clinic’s first robotic liver resection, as part of the Surgery Institute’s new robotic surgery program. The first robotic liver resection was done in early December 2008, for a patient with hepatocellular cancer. Since then, three additional patients have undergone robotic liver resection successfully for metastatic liver cancer. All patients were able to return home within two to three days after their surgeries. Within the robotic program, Dr. Berber has also performed three robotic laparoscopic transabdominal adrenalectomies for adrenocortical adenomas. All patients were able to go home the next day.

More Donor Lungs For Transplant

Organs for lung transplant are traditionally taken after brain death, rather than cardiac death. (Brain death is the irreversible loss of function of the brain, including the brainstem. Cardiac death is the cessation of all cardiac, circulatory and pulmonary activity in a patient who has requested in advance not to be kept on life support.) The common wisdom was that cardiac death donor lungs were more subject to injury and graft dysfunction. But a team of surgeons from the Heart & Vascular Institute is reversing that wisdom.

Led by David Mason, MD, they have shown that early lung function, as well as postoperative survival as long as three years after transplantation, was similar for recipients of donor lungs from either source. Further, Dr. Mason and his team have successfully performed more than 18 lung transplants donated after cardiac death — one of the largest experiences in the world. Their findings will expand the pool of available donor lungs, saving more lives of patients on transplant lists.

Full Scholarship for All at Lerner College of Medicine

At a meeting addressed by Delos M. Cosgrove, MD, president and CEO, and Norma Lerner, trustee, it was announced that the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University will provide full-tuition scholarships for all students, beginning with the entering class of July 2008. Current students will get additional scholarship funding to offset 50 percent of the difference between the tuition they’ve already paid and
the financial aid they’ve already received. The money will come from endowment income and clinical operations, with growing help from the philanthropic community.

New Push to Educate Allied Health Professionals

A new Center for Allied Health Education has been founded to address the national shortage of allied health professionals. Cynthia Deyling, M.D., chair of Regional Operations, has been named the executive director of the Center for Allied Health Education. Roy Anderson serves as the director of Allied Health Educational Partnerships. There are more than 80 allied health professions, including physical therapy, occupational therapy, physician assistant, respiratory therapy, medical laboratory technology, pharmacy, and surgical, radiologic and cardiovascular technology. The mission of the Center for Allied Health is to ensure that all Cleveland Clinic allied health programs educate students to excel in academic achievement and become providers of the best care to patients. Its goal is to coordinate the training of all allied health professionals across the Cleveland Clinic in collaboration with academic partners to meet the workforce needs of system hospitals.

The Center has established an Allied Health Education website, an Allied Health Higher Education Advisory Committee, and is currently working to create a standard on-boarding and orientation process for allied health students training at Cleveland Clinic hospitals. Additionally, the Center is collaborating with the Cleveland Metropolitan School District, Cuyahoga Community College, Cleveland State University, and John Carroll University on a program which has allied health professionals teach science and math concepts to 6th graders.

Cleveland Clinic Physicians Author Monumental Text

A team of 250 Cleveland Clinic physicians has written a new medical textbook, *Current Clinical Medicine*. Published by Saunders/Elsevier, the textbook is one of the largest publication collaborations by physicians in the history of Cleveland Clinic. William Carey, MD, director of the Center for Continuing Education, is editor-in-chief of the book, and all 204 chapters are authored by Cleveland Clinic staff members and incorporate national practice guidelines in management recommendations.

Vitamin E and Selenium No Preventives

Speculation that vitamin E and the antioxidant known as selenium might be able to prevent prostate cancer was laid to rest by a trial co-chaired by Eric Klein, MD, chair of the Glickman Urological & Kidney Institute. The trial, known as the Selenium and vitamin E Cancer Prevention Trial (SELECT), which involved 35,533 healthy men, was the largest clinical trial of chemoprevention for cancer ever run. It was halted early when researchers found the supplements provided no benefit.

Ohio’s First Adult Intestinal Transplant

Cleveland Clinic surgeons led by Cristiano Quintini, MD, performed Ohio’s first adult intestinal transplant. The patient was a 47-year-old man from Painesville, Ohio,
Cleveland Clinic Florida

Cleveland Clinic in Florida added new physicians in over 20 specialties, bringing the number of medical staff to more than 150 (with 412 nurses). “We are committed to meeting the community’s need for high quality patient care by recruiting the best doctors,” says Bernardo Fernandez, MD, chief executive officer of Cleveland Clinic in Florida. Hand & Upper Extremity and Neurosurgery were added to 38 current specialties.

Cleveland Clinic in Florida continues to attract a growing number of international patients, largely from the Caribbean (over 80 percent) and Latin America. Nearly 5,200 patients traveled from abroad, seeking diagnoses or treatment in 2008, up from 4,431 in 2007. There were on average 430 unique patient visits per month in Florida. 2008 marks the third year of “double-digit” growth in international visits.

Overall patient volume increased for 2008. Hospital admissions were up more than 18 percent, and clinical visits almost 15 percent from 2007.

Named one of the nation’s 100 Top Hospitals in cardiovascular care by Thomson Reuters in 2008, Cleveland Clinic in Florida was also one out of only four hospitals in the nation recognized at the Gold level by the American Heart Association for performance in all three categories of the Get with the Guidelines program: Coronary Artery Disease, Heart Failure & Stroke. In West Palm Beach, the new offices of the Cleveland Clinic Florida Health and Wellness Center opened on the 14th floor of the recently completed CityPlace Tower. The 25,000-square-foot offices have eight full-time physicians onsite, along with 30 employees. Other physicians will rotate from the Cleveland Clinic in Florida Campus in Weston. Eleven specialties are represented at the Center, which also has 27 exam rooms, two procedure rooms, as well as radiology services to include MRI and CT.
suffering from short bowel syndrome resulting from multiple treatments for Crohn’s disease. Although able to eat, he required parenteral nutrition for more than a decade due to an inability to properly absorb nutrients that in turn caused liver failure. The 10-hour operation involved 50 specialists, nurses and support personnel. The surgical team included John Fung, MD, PhD, chair of General Surgery and Transplant Center, and Bijan Eghtesad, MD, as well as Charles Miller, MD, director of Liver Transplantation and Koji Hashimoto, MD, PhD, who prepared the donor intestine for implantation. The addition of intestinal transplant gives Cleveland Clinic the most comprehensive transplant program in the country.

CC Innovations

CC Innovations (CCI) promotes innovation and its commercial application. Under the leadership of Executive Director Chris Coburn, CCI helps to grow Cleveland Clinic’s innovation capacity, creates spin-off companies, licenses technology, secures resources and establishes strategic collaborations with corporate partners. Since 2000, CCI has created 30 spin-off companies, had its first IPO, sold its first spin-off in 2007, transacted more than 200 licences, filed 877 patents, issued 225 patents, and acted on 1,200 new inventions.

In 2008, CCI received and processed 203 Invention Disclosure Forms, filed 131 patents, issued 62 patents, secured 33 new license agreements, created five new companies (Cleveland Heart, Congruent Medical, OptoQuest, Perfusion Solutions, and Renovo Neural), and was awarded 4 commercialization grants from the Ohio Third Frontier Program for a total of $14 million dollars. It also held the 6th Annual Cleveland Clinic Medical Innovations Summit, welcoming more than 1,000 leaders of business, medicine, law and invention, and producing the widely noted Cleveland Clinic “Top 10 Medical Innovations” of the year.

Education Institute

The Education Institute oversees Cleveland Clinic’s educational mission, including the Lerner College of Medicine of Case Western Reserve University, community education and one of the nation’s largest graduate medical education programs. The volume and diversity of clinical problems seen by trainees at Cleveland Clinic and the opportunity to participate in a group practice model of medical care provide an ideal teaching and learning environment.

In 2008, the Education Institute sponsored 803 residents and fellows and 128 advanced fellows. These numbers represent the highest graduate medical education enrollment in Cleveland Clinic history and demonstrates an upward trend that reflects Cleveland Clinic’s steady growth and specialization. These trainees participate in the Education Institute’s 59 ACGME (Accreditation Council for Graduate Medical Education)-certified programs and more than 70 non-accredited fellowships.

Physicians and other medical personnel around the world are required to keep their knowledge and skills up to date through participation in Continuing Medical Education (CME) programs. The Education Institute is a leading
SYDELL AND ARNOLD MILLER FAMILY PAVILION AND GLICKMAN TOWER

Empathy is designing for a better patient experience. Patient experience is built into Cleveland Clinic’s new million-square-foot Sydell and Arnold Miller Family Pavilion and Glickman Tower. With all single hospital rooms, a rooftop plaza and invigorating works of art, these buildings address the needs of patients’ minds, bodies and spirits.
SERVICE CENTER AND GARAGE

Innovation is automating for efficiency. To meet the needs of patients in its new buildings, Cleveland Clinic has constructed a new, fully-automated Service Center and 4,000-car garage. The environmentally friendly facility tracks and delivers tons of food, medical supplies and laundry, and delivers materials to the hospital on robot carts in an underground network.
provider of CME courses in virtually all media. In 2008, the Education Institute offered 493 CME programs to 86,363 participants from around the world. These programs ranged from 206 live courses to 151 online CME activities. Of live program attendees, 39 percent were from outside the Midwest, and 13 percent were from outside the United States. CME programs also were offered internationally at several sites, including Abu Dhabi, reflecting an increasing educational outreach to the international medical community in countries where Cleveland Clinic is establishing a medical presence.

The Education Institute offers patient education and health information for the public through its Center for Consumer Health Information. In 2008, the Center provided 47 community Health Talks to 2,944 attendees. Users of the Center’s Online Health Information Database continue to increase, with 18 million page views in 2008, up from 100,000 in 2001. Podcasts, webcasts and live web chats also are offered as a means of consumer health information outreach.

The Cleveland Clinic Journal of Medicine (CCJM) enjoyed a circulation of 101,044 in 2008, and continued to rank second in readership among journals directed to office-based internists and cardiologists.

The Cleveland Clinic Lerner College of Medicine of Case Western Reserve University has seen the number of applicants more than double over the past four years, to almost 1,500 applicants for 32 positions in 2008. The program’s students contributed 25 scientific articles and 25 presentations to the world’s store of scientific knowledge in 2008. In the first graduating class, 29 out of 29 graduates successfully matched at some of the most prestigious medical institutions in the country.

This year, five Lerner College of Medicine students received the prestigious Howard Hughes Medical Institute (HHMI)-National Institutes of Health Research Scholars Program award, also known as the “Cloisters.” The award gives outstanding students at U.S. medical schools the opportunity to receive research training at the National Institutes of Health in Bethesda, Maryland.

A sixth student received an HHMI Medical Student Research Fellowship that will support one year of research at Cleveland Clinic. In addition, three students received Doris Duke Clinical Research Fellowship awards, which are designed to support medical student research at select ed academic medical centers, and one student received a National Institutes of Health Clinical Research Training Program award.

Around the Institutes

Satish Kalhan, MD, Digestive Disease Institute, was honored with the 2008 Lifetime Achievement Award for research in diabetes from the Diabetes Association of Greater Cleveland ... Tommaso Falcone, MD, chair of Obstetrics and Gynecology and Women’s Health Institute, was president of the Society for Reproductive Surgeons. The book, Hysteroscopy: Office Evaluation and Management of the Uterine Cavity, co-authored by Dr. Falcone and Linda Bradley, MD, was published in print and DVD by Mosby Inc ... James M. Goldfarb, MD, is president-elect of the
has been appointed to serve on the State of Ohio Health Information Partnership Advisory Board ... The ACGME’s Parker J. Palmer Courage to Teach award recognizes program directors who find innovative ways to teach residents and to provide quality healthcare, including (this year) the Glickman Urological & Kidney Institute’s Drogo Montague, MD ... 2008 saw Gary Hoffman, MD, of the Orthopaedic & Rheumatologic Institute, keynoting at the Norwegian Society of Rheumatology, delivering the Ira Goldstein Memorial Lecture at NYU, serving as Edward Boland visiting professor at Mayo Clinic, visiting Harvard as part of the Leaders in Rheumatology Visiting Professor program, and at the University of Pittsburgh, where he was the Pfizer visiting professor. The ORI’s Brian Mandell, MD, was chair of the American College of Rheumatology’s annual scientific meeting ... Steven Campbell, MD, and Brian Rini, MD, Glickman Urological & Kidney Institute, are co-editors of 100 Questions and Answers About Kidney Cancer, published this year by Jones and Bartlett, along with Brian Lane, MD, PhD, now a fellow at the Institute ... The law firm of Jones Day has endowed a chair in Medical Education at the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, to be held by Alan L. Hull, MD, PhD, associate dean for Curricular Affairs ... To help increase the number of minority physicians in the oncology community, Derek Raghavan, MD, PhD, chair, Taussig Cancer Institute, as joint chair of the Diversity Task Force of the American Society of Clinical Oncology, has collaborated with the Susan G. Komen Foundation For The Cure to create the Komen/ASCO Diversity in Oncology Initiative, which
will provide training opportunities and loan repayments to minority physicians in this field ... Delos M. Cosgrove, MD, CEO and president of Cleveland Clinic was named among Modern Healthcare’s 100 Most Powerful People and 50 Most Powerful Physician Executives in Healthcare ... The Glickman Urological & Kidney Institute now keeps track of staff and employees in clinical areas using radio-frequency identification technology. All personnel wear tags that indicate their precise location in rooms or hallways on computer-accessible floorplans ... The discovery by Ashok Agarwal, PhD, Glickman Urological & Kidney Institute, that cell phone use was related to sperm quality, became one of the most widely reported news stories of the year, with mentions in and on Google News®, CBS Early Show®, CNN Headline News®, USA Today®, Newsweek®, ABCNews.com®, The Tonight Show with Jay Leno® and 33 broadcast mentions in the top 10 national television markets. In total, it generated 2,000 media stories reaching 700 million people, according to the Department of Media and Public Relations ... The staff of the Taussig Cancer Institute have secured a grant from the Ralph Lauren Center for Cancer Care and Prevention Foundation and Harlem Hospital to support patient navigation in cancer care at Huron Hospital and the Taussig Cancer Institute for minority patients ...

National Awards and Honors

AMGA Preeminence Award

Cleveland Clinic won the American Group Medical Association’s Preeminence Award. The Preeminence Award is presented annually for “exceptional leadership; innovation and vision; contributions to the advancement of quality; effective healthcare delivery practices and structure; and outstanding contributions to the local public community in which the healthcare organization is located.” In presenting the award, Donald W. Fisher, Ph.D., the Association’s president and CEO, said, “Cleveland Clinic stands as an exemplar of the model, and their work is revolutionizing how coordinated care is delivered. They prove what professionals dedicated to advancing quality, coordinated care, working together in the medical group setting, can achieve to better serve their patients, their organizations and their communities.”

Magnet™ Status for Nursing

Cleveland Clinic has once again earned Magnet™ status, the highest national recognition awarded to a hospital or medical center for excellence in nursing. This marks the Clinic’s second four-year term with Magnet™ distinction, an honor the ANCC, a subsidiary of the American Nurses Association, first awarded in 2003. Magnet Status has been earned by only 1 percent of the nation’s 6,000 hospitals. Hospitals applying for this recognition must provide an environment that empowers nurses, that values their contributions and supports nursing leadership.
Andrew Novick, MD
1948-2008

Andrew Novick, MD, passed away on October 19, 2008. Dr. Novick was chair of the Glickman Urological & Kidney Institute. He joined the Cleveland Clinic staff in 1977, and became chairman of the Department of Urology in 1985. He developed the department, and later Institute, into the largest and most specialized urological practice in the world. A renowned surgeon, he pioneered partial nephrectomy for the treatment of kidney cancer and extracorporeal or “bench” kidney surgery for the repair of complex kidney disorders. In addition to his surgical accomplishments, Dr. Novick discovered a correlation between chronic kidney disease and atherosclerotic renal artery disease. Dr. Novick devoted significant effort to the understanding and management of end-stage renal disease through renal transplantation, and to preserving renal function through reconstructive surgery.
PATIENT SERVICE NAVIGATORS

Empathy is Patient Service Navigators. Cleveland Clinic has 17 Patient Service Navigators (PSNs) on duty, every day. They assure that patients and families have the best experience during a hospital stay. PSNs can facilitate communication between patients and the medical team; they can answer patients’ questions; relieve anxiety; suggest healing services; and reassure patients by their presence and availability.
Innovation is keeping track of patient experience. The Office of Patient Experience has created a computer dashboard to consolidate data and survey information on patients’ needs and concerns. The first of its kind in healthcare, the dashboard helps identify best practices and shows managers how patient experience can be enhanced.
## Financial and Statistical Highlights

### Cleveland Clinic

#### Patient Care

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Clinic Visits</td>
<td>3,233,059</td>
<td>3,341,664</td>
</tr>
<tr>
<td>Emergency Visits</td>
<td>52,182</td>
<td>51,479</td>
</tr>
<tr>
<td>Total Admissions (excluding newborns)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td>50,297</td>
<td>48,332</td>
</tr>
<tr>
<td>Non-Acute</td>
<td>2,098</td>
<td>2,133</td>
</tr>
<tr>
<td>Surgical Cases</td>
<td>74,040</td>
<td>73,487</td>
</tr>
<tr>
<td>Inpatient</td>
<td>25,373</td>
<td>25,210</td>
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<tr>
<td>Outpatient</td>
<td>48,667</td>
<td>48,277</td>
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#### Education

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<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents and Fellows in Training</td>
<td>920</td>
<td>931</td>
</tr>
<tr>
<td>Continuing Medical Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programs</td>
<td>396</td>
<td>493</td>
</tr>
<tr>
<td>Participants</td>
<td>97,383</td>
<td>95,525</td>
</tr>
<tr>
<td>Accredited Residency Training Programs</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>Allied Health Students</td>
<td>399</td>
<td>447</td>
</tr>
<tr>
<td>Programs for Allied Health Specialists</td>
<td>28</td>
<td>35</td>
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#### Research

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<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Grant and Contract Revenue</td>
<td>$159.1M</td>
<td>$172.2M</td>
</tr>
<tr>
<td>Total Federal Revenue</td>
<td>$91M</td>
<td>$101.1M</td>
</tr>
<tr>
<td>Total Laboratory Principal Investigators</td>
<td>197</td>
<td>194</td>
</tr>
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</table>

### Cleveland Clinic Health System

#### Patient Care

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Visits</td>
<td>389,425</td>
<td>388,122</td>
</tr>
<tr>
<td>Total Admissions (excluding newborns)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td>147,889</td>
<td>149,466</td>
</tr>
<tr>
<td>Non-Acute</td>
<td>15,923</td>
<td>16,361</td>
</tr>
<tr>
<td>Surgical Cases</td>
<td>169,923</td>
<td>169,927</td>
</tr>
<tr>
<td>Inpatient</td>
<td>58,769</td>
<td>59,205</td>
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<tr>
<td>Outpatient</td>
<td>111,154</td>
<td>110,722</td>
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</table>

#### Financial Highlights ($ in Thousands)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Operating Revenues</td>
<td>4,733,168</td>
<td>5,080,684</td>
</tr>
<tr>
<td>Operating Income</td>
<td>349,101</td>
<td>239,278</td>
</tr>
<tr>
<td>Charity Care (at cost)</td>
<td>123,414</td>
<td>99,066</td>
</tr>
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</table>

**NOTE:** Chart includes revised figures since 2007 annual report.
At the end of 2008, we had 55 active projects in progress and completed an additional 19 projects during the year. Sixteen research-based manuscripts that include a nurse author were published in 2008.

With more than 39,000 employees, Cleveland Clinic is the largest private employer in Northeast Ohio and the second largest private employer in the state.

The professional medical staff, which includes staff physicians, associate staff physicians and assistant staff physicians, increased 1.49% in 2008 to 1,833 positions.
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