FINDING NORMAL
Emory’s new hope for restoring brains after injury
Out of the silos

The debate on health care has caught the attention of policy groups, insurers, and patients alike. As lawmakers grapple with the best approaches to transform our current system, academic health centers like the Woodruff Health Sciences Center at Emory already have been busy exploring and testing models and initiatives to overhaul health care.

As we refocus health care from the treatment of diseases to the treatment of individuals, and the management of health through prevention and wellness, one truth continues to emerge in successful models of health care delivery: interactive teams that span disciplines, specialties, and professions are vital to the process. When we break out of clinical specialty and academic silos, we discover a wide range of perspectives that can serve complementary and synergistic roles in providing the highest performance—in not only delivering health care but also educating students and conducting research.

Take, for example, Emory’s approach in discovering progesterone for treating traumatic brain injury (TBI). This first new potential treatment in 30 years results from years of work by one persistent researcher, Don Stein, and a team of basic scientists, emergency medicine doctors, statisticians, neurosurgeons, trauma surgeons, and other colleagues at Emory. The team approach to validate what may be the first-ever effective treatment for TBI is now spreading across the United States to 17 trauma centers that are participating in a clinical trial led by Emory and funded by the NIH.

In the Emory ALS Center, the multidisciplinary team approach extends from the clinic to the research lab. Patients with amyotrophic lateral sclerosis attend a clinic where the physicians, nurses, social workers, respiratory therapists, nutritionists, and others all come to them. The center’s team focuses on increasing independence and quality of life for those with ALS. The team puts the patient at the center of the experience, as the most effective way to manage a person’s health. And behind the scenes, Emory researchers—including neurologists, geneticists, and biochemists—are looking for the breakthrough to cure this devastating disease.

Throughout this issue, you’ll read over and over again of successful examples of health care that are working because of multidisciplinary and interdisciplinary approaches—from developing a treatment for TBI to improving the quality of life for people with ALS, from finding the earliest indicators of Parkinson’s disease to Emory’s comprehensive approach to heart failure and cancer. These stories confirm that academic health centers like the WHSF, with their broad range of services and disciplines, are the natural leaders in transforming health and healing—by working together.

Fred Sanfilippo, MD, PhD
Please share your feedback at cphfeedback@emory.edu.
he progesterone story began as a scientific puzzle, obstinately pursued by a stubborn Emory neuroscientist. What caused some female rats to survive brain injuries virtually unscathed while males with similar injuries died or had severe problems finding their way around once familiar mazes?

Many colleagues thought Don Stein was too obsessed with a potentially career-killing research dead-end. Two Emory doctors—Art Kellermann, then head of emergency medicine, and David Wright, an ER clinician and researcher—looked at Stein’s findings in rats and thought that maybe, just maybe, the scientist was on to something that could change the too often dismal outcomes of the traumatic brain injury (TBI) patients they saw in the emergency department. Other Emory doctors and researchers stepped up to help them find out, in a clinical trial funded by the NIH, conducted from 2001 to 2005 at Grady Memorial Hospital, where TBI patients arrive with heartbreaking regularity.

This winter, based on the promising results of that study, a second NIH clinical trial of the progesterone treatment developed at Emory will begin at 17 trauma centers across the United States, including at Grady. Headed by Wright, the study will enroll 1,140 TBI patients. If progesterone works as well as it did in the smaller trial, clinicians will have the first new treatment in 30 years, and the first-ever safe and effective treatment, for TBI. Progesterone could transform the way doctors treat head injury, not only in emergency rooms but also at the site of car wrecks or bombings and explosions in Iraq and Afghanistan, where TBI has become the signature wound.

The final answer could take five years, but hope of an effective treatment for TBI no longer sounds so crazy. Ask the NIH. Or, just ask Marc Baskett (left) and his parents.

Progesterone offers the hope of being the first new treatment for traumatic brain injury in 30 years and the first-ever safe and effective treatment. It was there, under our noses, the whole time.
Coming to say goodbye

Three weeks before high school graduation, everything went dark for Baskett. He was riding in the car with his girlfriend near his home-town of Commerce, Ga. She had taken him eye off the road for an instant, then looked up to see a truck filling the windshield, crushing the passenger side of the car so completely that emergency rescuers at first thought Baskett had been thrown from the vehicle. Unconscious, unresponsive, he was airlifted to Grady; the region’s only level-1 trauma center, some 70 miles away.

There, a shifting phalanx of doctors began to treat the 19-year-old’s multiple injuries: damaged organs, cuts (50 stitches in his right arm alone), a metal rod through his knee into his shattered right femur, another rod to hold together his crushed ankle. But no effective treatment existed for his most devastating injury, that to his brain. Unable to open his eyes or respond to painful stimuli, Baskett scored 4 on the 15-point Glasgow Modified Coma Scale. He had almost no brain activity.

“Jeff and I believed we had come to Grady to say goodbye to our boy,” says his mother, Johanna Baskett. “And not just us.” It seemed as if half of the small town of Commerce had closed up shop and followed the popular young athlete to Grady. When a young woman asked to talk to the family about a study Emory was conducting, a dozen of Baskett’s coaches and teachers joined them.

The study coordinator explained that the researchers did not know if progesterone could do for humans what it had done in rats. In fact, ProTECT (progesterone for traumatic brain injury—experimental clinical treatment) was a pilot study designed primarily to evaluate whether progesterone could be safely and reliably administered intravenously. The 100 participating patients all would receive state-of-the-art care; 80 would be randomly chosen to also receive progesterone. The cluster of family and friends agreed that the Basketts should sign. They had nothing to lose.

Within minutes, a vial was added to the drip of medicines already flowing through Baskett’s veins. Because the study was double-blinded, neither his family nor the researchers knew whether the numbered vial contained progesterone or saline, a standard research method for more than two decades. He spent his days doing the more traditional in the Bronx, “he once told a hardware store. The grounds crew would yank them up whenever he was dean of the graduate school and associate provost for Massachusetts, where he ran the brain research lab, and at Rutgers, where he was dean of the graduate school and associate provost for research. He spent his free time trying to solve the mystery of those injured but still normally functioning female rats. When Emory brought him on board in 1995, it was not so much for his progesterone research but rather his administrative talents. Here too, for five years, he spent his days as dean of the graduate school and vice provost and his evenings in a research lab in a double-wide trailer previously discarded by the Veteran’s Administration, not uncommon during Emory’s then-building boom. With typical Stein humor, he purchased a stash of plastic flamingos from a nearby hardware store. The grounds crew would yank them up whenever they could, only to find a new pair gleaming in the morning sun. Stein finally decided he had been outsmarted when the crew replaced the lawn with a rock garden of artfully placed blowups.

When it came to his work with rats, however, he did not quit. Since the females typically did better, Stein thought that the difference had to be hormonal. That helped explain anecdotal or single-case clinical reports that women were more likely than men to recover from similar brain injuries. Stein turned to progesterone. Progestrone was hidden in plain sight as a neuroprotective agent, “says Stein. A naturally occurring hormone produced in the brains of both sexes, progesterone’s protective properties become most obvious during pregnancy when levels shoot up dramatically and stay elevated until the baby is born. Stein and others began to recognize that many processes involved in fetal development are similar to those that take place during tissue repair after injury. Perhaps, Stein theorized, the higher levels of progesterone in females at the time of their injury accounted for their better outcomes. And since

FEB 2009

"I promised myself then I would do whatever I could to make sure other head injury patients had access to the drug that I knew I must have been given."
Progesterone levels fluctuate sharply during rats’ estrus and women’s menstrual cycles, perhaps the outcome depended on where females were in their cycle when injured. By tricking the female rats’ bodies into thinking they were pregnant (a little like birth control pills do), Stein was able to produce much better results. The first thing he and his students noticed was that high levels of progesterone in the animals. It soon became evident that the high-progesterone females had virtually no brain swelling compared with those in other phases of their estrus cycles. He was on the right track. But would it work for males? And if so, why?

In the years since Stein’s graduate school days, science had advanced considerably. Brain swelling was recognized as a major cause of cell death after TBI. Many treatments, then and now, focused on preventing swelling to preserve still healthy brain tissue. In 1991, the NIH awarded the proposal more than $27 million in funding—news that again made the pages of the Wall Street Journal. During the next four years, 1,140 TBI patients were enrolled across 17 different institutions, each at a level 3 trauma center. Participating institutions would work under shared protocols and operate according to quality control standards developed at Emory. The progesterone, a natural substance, would be purchased from a pharmaceutical company and prepared, tested for quality control, and packaged in Emory laboratories, then distributed to all participating centers. As in the earlier study, patients must be 18 or older, with blunt head trauma (no penetrating injuries). In the new study, however, patients will begin treatment within four hours of injury. Given the safety results of the first study, the NIH will allow the use of informed consent—a special research allowance for cases where time to treatment is critical to the conduct of the research. Patients will be monitored daily for safety and clinical management. At six months, memory, cognition, and behavior will be measured, with outcomes stratified by severity of injury.

The safety of progesterone makes for numerous possibilities, say the researchers. Stroke, for example. Stein’s recent animal studies suggest that progesterone is highly effective in reducing the size of blood clots and, unlike tPA, has no risk of causing bleeding in the brain. Wright and Michael Franklin, director of Emory’s Stroke Center, are readying for a stroke trial.

Children with TBI were excluded from the first progesterone studies because researchers were uncertain how the hormone would affect development. Clinicians in the Emory-Children’s Center, Emory Center for Injury Control, and Children’s Healthcare of Atlanta have brought their expertise to studies now being designed. Wright and the other researchers also would like to explore getting progesterone to patients faster to save more brain cells. They are working with Emory chemists to stabilize and prepare the drug, and testing for quality control, and package in Emory laboratories. Part participating centers will work under shared protocols and operate according to quality control standards developed at Emory. The progesterone, a natural substance, would be purchased from a pharmaceutical company and prepared, tested for quality control, and packaged in Emory laboratories, then distributed to all participating centers.

Not only had progesterone caused no side effects, but fewer than 4% of patients at the NIH trial did as well as Baskett, there were a number of other marked successes, including a prominent businesswoman who prefers that people not know about the injury and a young man who continues to pursue a successful, prominent athletic career. The Basketts take a more direct view. “This drug and all the people who believed in it gave us back our son, with his mind, personal identity, and sense of humor intact.”

THE DRUG AND THE ALL THE PEOPLE WHO BELIEVED IN IT GAVE US BACK OUR SON, WITH HIS MIND, PERSONALITY, AND SENSE OF HUMOR INTACT.

Marfan’s syndrome (a disorder many believe afflicted Lincoln). With appointments in emergency medicine, injury control, biological and biomedical sciences, and biomedical engineering at Emory, he had strong and cautious research instincts. He carefully repeated some of Stein’s rat studies and got the same promising results. After that, Wright too became convinced that progesterone held serious promise as a potential treatment for TBI. He and Stein worked with a statistician at Emory’s Rollins School of Public Health and with clinicians from neurosurgery, trauma surgery, and other Emory departments to design a clinical study to see if progesterone would work on injured humans without causing serious side effects. Progesterone had a long track record of safety for treatment of other diseases, but not at levels the researchers believed would be most effective for treatment of TBI in humans. In 2001, the first of 100 patients enrolled in a three-year pilot study funded by NIH and headed by Kellermann and Wright. All had suffered TBI within 11 hours before arriving at Grady, and all had an initial Glasgow Coma Scale score ranging between 4 (severe TBI like that of Baskett) and 12 (moderate TBI).

At the end of the study, Wright and others on the team went to Washington, D.C., to find out the results from NIH analysts, the only people aside from the team statistician who knew which patients had received progesterone, which placebo. The researchers’ nervousness was palpable. Were they closer to treatment? Back in Atlanta, Stein was driving when his cell phone rang. When Kellermann told him to pull over before he heard the results, Stein blacked out and passed out. Stein recalled, “What worked in rats did not always work in humans. Would progesterone end up in the graveyard of failed neuropsychotropic drugs? Had his research career been a heroic attempt or a pig-headed waste of time? Not only had progesterone caused no side effects, but fewer than 4% of patients at the NIH trial did as well as Baskett, there were a number of other marked successes, including a prominent businesswoman who prefers that people not know about the injury and a young man who continues to pursue a successful, prominent athletic career.

Saving time and brain cells

Results in hand, Wright, Stein, and the team began planning a larger clinical trial to more completely test progesterone’s clinical effectiveness. The process involved six Emory departments and three schools (Emory’s schools of medicine and public health and Morehouse School of Medicine). Wright then reached out to potential partner institutions in a plan the size and scope of a small military campaign. Last fall, the NIH awarded the proposal more than $427 million in funding—news that again made the pages of the Wall Street Journal.

WEB CONNECTION
To read a podcast with Don Stein, visit whsc.emory.edu/protect.cfm
To see Marc Baskett on video, visit whsc.emory.edu/protect.cfm.
To hear a podcast with Don Stein, visit whsc.emory.edu/soundscience/2009/stein.html.

Fall 2009
Doctors first told John McCune that he had lost his sense of smell because of sinus blockages, but surgery to allow his sinuses to drain failed to help. He next tried large doses of zinc, but with no apparent benefit. Then several years passed before any visible sign of trouble arrived.

"Both my wife and my daughter noticed that my left arm didn't move while I was walking, and I had started to shuffle a bit," McCune says.

He was diagnosed with Parkinson's disease in 2006, more than a decade after first noticing that his sense of smell was weakening.

The earliest harbingers of Parkinson's disease may be those we cannot see.
Today neurologists are recognizing that the loss of the sense of smell is one of a group of “non-motor” symptoms associated with Parkinson’s disease. Other signs include sleep disturbances, constipation, blood pressure changes, depression, and as the disease becomes more advanced, hallucinations and confusion.

These symptoms are like proverbial canaries in a coal mine, warning of danger years before the disease appears. "They're the first sign of Parkinson's disease," says DeLong, who has spent decades researching the disease and developing better treatments for patients. "Neurologists believe motor symptoms only arise from loss of cells that make dopamine, especially in the part of the brain called the basal ganglia, which plays a critical role in regulating movement. Surgery with deep brain stimulation (DBS), which DeLong and others pioneered, targets specific areas of the basal ganglia in an effort to regulate them with electric current.

Neurologists believe motor symptoms arise from loss of cells that make dopamine, especially in the part of the brain called the basal ganglia, which plays a critical role in regulating movement. Surgery with deep brain stimulation (DBS), which DeLong and others pioneered, targets specific areas of the basal ganglia in an effort to regulate them with electric current.

Several Emory researchers are investigating these non-motor features of Parkinson’s, ranging from degeneration of the nerves that regulate the digestive system to subtle changes in memory and decision making. They are working both in Emory’s clinics and with animal models developed to simulate the non-motor symptoms seen in humans.

"The field is moving in this direction because doctors realize that we have to address the effects of the disease in a more systemic way," says Emory neurologist James Greene, who is comparing digestive problems in animal models of Parkinson’s. "Non-motor symptoms significantly affect patients’ quality of life.

In addition, non-motor symptoms demonstrate that Parkinson’s can cause damage to more than one part of the brain and more than one area of brain cell. They provide clues to how the disease develops and how it might be delayed or prevented.

**Getting to this point**

The recent emphasis on non-motor symptoms reflects the history of treatment for Parkinson’s, says Emory neurologist Mahlon DeLong, who has spent decades researching the disease and developing better treatments for patients. "We’ve known about non-motor symptoms for a while," he says. "But they’ve remained in the background because of the considerable progress in treating motor symptoms."

In the 1960s, researchers discovered that the drug L-dopa had a dramatic effect on motor symptoms in people with Parkinson’s. However, over time, L-dopa can lose its effectiveness.

Several medications available to treat the motor symptoms of Parkinson’s have built on the success of L-dopa. However, these drugs have little effect on many non-motor symptoms, such as constipation and sleep disruption.

When Parkinson’s affects the part of the brain that prevents people from acting out their dreams, for example, it leads to REM sleep behavior disorder, which in turn can lead to falls or other injuries. One Emory patient woke up after a nightmare, he says. Another patient, a retired bank executive, is unable to sleep at night and consequently snoozes off throughout the day. Not being able to get regular sleep "definitely makes the motor symptoms worse," he says.

Recent studies also indicate that the majority of hospitalizations for Parkinson’s patients come from non-motor symptoms. "We know that Parkinson’s patients into the hospital are things like hallucinations and confusion, or problems with balance, which can lead to severe injuries," DeLong says. "These can’t be treated with L-dopa."

Animal model for non-motor symptoms

By the time many patients consult a neurologist about classic Parkinson’s symptoms, most of their dopamine-making cells already have been lost. DeLong says research must concentrate more on preventing or forestalling Parkinson’s. Prevention requires knowledge about the disease’s causes and mechanisms, which are highly complex in Parkinson’s, says Gary Miller, a neurotoxicologist at Emory’s Rollins School of Public Health.

A small number of cases are clearly inherited, but most probably come from a mix of genetic variation, personal history, and exposure to environmental hazards such as pesticides. Miller, Greene, and other Emory colleagues are studying how pesticides injure brain cells. In the altered mice, the improperly stored neurotransmitters are thought to damage brain cells. In normal mice, they may help identify patients who can benefit from early treatment, she says.

**In memory**

"What was most noticeable was that Worley lost his voice. He always had a strong voice," says Melvyn Brown Jewell (above) talking about the Parkinson’s disease that took her husband’s voice, then his memory, then his life. Worley Brown, who was CEO of the Rock-Tenn Corporation, suffered from Lewy body dementia, a progressive form of Parkinson’s that affects the ability to remember as well as to reason and carry out simple actions. It also causes hallucinations.

Jewell recently pledged $2 million to establish a chair in neurology at Emory to honor her late husband and a $500,000 gift to renovate a clinical research unit at Weslyl Woods. Both contributions are lead gifts for an endeavor to raise funds for Parkinson’s and other movement disorders, and they are part of Campaign Emory’s $1.6 billion fund-raising initiative. "I just want to be a cure," says Jewell, "and through the research being performed at Emory, I believe that can be accomplished."
Judy Lochridge was a nurse for 36 years when she started to tire on the job. Her hands were weak, and her shoulder hurt. She never expected ALS was the cause, but that was the diagnosis she got in the fall of 2007. Since then, she has stopped work, but she and husband, Billy Lochridge, are trying to have a normal life. They’ve seen a daughter marry, attended their son’s rock band opening at the Hard Rock Café, celebrated their 36th wedding anniversary, even traveled to Aruba. They know ALS is a terminal disease. “We have our crying times,” they say. But having ALS, says Judy, has made her “look at the sunrise a little differently. All the special things that anyone does for me are a little more precious to me,” she says.

Every day, every way, Emory’s clinicians and researchers are looking for a breakthrough to treat ALS.

ALS is like a lit candle: it melts your nerves and leaves your body a pile of wax.
– Tuesdays with Morrie, by Mitch Albom

By Maria Lameiras • Photography by Jack Kearse

Judy Lochridge was a nurse for 36 years when she started to tire on the job. Her hands were weak, and her shoulder hurt. She never expected ALS was the cause, but that was the diagnosis she got in the fall of 2007.

Since then, she has stopped work, but she and husband, Billy Lochridge, are trying to have a normal life. They’ve seen a daughter marry, attended their son’s rock band opening at the Hard Rock Café, celebrated their 36th wedding anniversary, even traveled to Aruba. They know ALS is a terminal disease. “We have our crying times,” they say. But having ALS, says Judy, has made her “look at the sunrise a little differently. All the special things that anyone does for me are a little more precious to me,” she says.

See the photo essay and hear more patient stories at whsc.emory.edu/r_als.htm
For more information on the Emory ALS Center, visit neurology.emory.edu/ALS

on borrowed time
The axons of ALS

In addition to providing clinical services, Emory’s ALS Center is searching for a research breakthrough to understand the disease. It partners with the Muscular Dystrophy Association of Georgia and the ALS Association of Georgia, bringing together clinicians and scientists familiar with a wide spectrum of human neurodegenerative diseases. It is one of five centers that participate in the national clinical research network to support ALS research.

“Instead of having silos of research in each area, we have them mixed together so we can learn from each other,” Glass says. Believing that neurodegenerative diseases may all be related in some way, the Emory teams include specialists in Alzheimer’s, Parkinson’s, ALS, Huntington’s, and other age-related neurodegenerative diseases.

In the ALS Center, research focuses on the basic mechanisms of motor neuron degeneration, genetics, and new experimental treatments. A main focus of Glass’s laboratory is figuring out why ALS causes nerve fibers, called axons, to die. “Axons connect the nervous system to the muscles and skin and give the body all of its interaction with the outside world,” Glass says. “The ability to feel, move, do anything is controlled by the impulses that travel up and down the axons from the brain. The major feature of neurodegenerative diseases is that these wires die, disconnecting the brain center from the outside world.”

Using cell cultures and animal models, Glass and his research team create models of the nervous system and ALS to identify factors that cause axon death. They then look at the pathways of cell death to find ways to prevent it from occurring.

With biochemists from Georgia Tech, Glass is working to develop new drugs to prevent axon cell death. The researchers are testing the potential of calpain inhibitors in mouse models to see if they can limit the toxic effects of the cancer drug Taxol (which causes axon degeneration in humans and mice). Calpains are enzymes that are active in models of neurodegeneration, and Glass’s research has shown that administration of a calpain inhibitor in mouse models seems to prevent axon degeneration and preserve function.

Genetic links and links

Most current research focuses on familial ALS, even though only 10% to 15% of all ALS patients have the familial form. The rest have what is called sporadic ALS. Of all familial patients, about 20% have a mutation of SOD1, an enzyme present in all normal cells that detoxifies oxygen. The remaining 80% of familial ALS patients have a gene linked to ALS, but doctors and researchers do not know why the gene causes ALS.

“These indicators in familial ALS give us a place to start,” says Glass. Since people with familial ALS are virtually indistinguishable from those with the sporadic form, what researchers learn about the genetic form will help them better understand sporadic ALS.

“Many believe that neurodegenerative diseases are all linked,” says Glass. “The question is, how many ways are there to ‘break the nervous system? Probably not many. Similar mechanisms have to cause it. If we can find out what causes axon degeneration in any situation, it could lead to new prevention or treatments for the range of neurodegenerative diseases.”

Glass also is working with Emory geneticists to find protein biomarkers that can predict the severity and progression of ALS, which impacts each patient with differing symptoms, severity, and rate of progression. Prognostic biomarkers could lead to a clinical trial to see how these protein biomarkers change in different patients.

At press time, Glass had just learned that the FDA has approved a phase I clinical trial to treat ALS with spinal cord stem cells. Emory is awaiting approval for stem cells from its Human Investigations Committee to participate in this landmark trial. A cure can’t come too soon for the Everett’s. As Jimmo puts it, “we hope Dr. Glass has a breakthrough soon.”
Healing tender tendons

During the 2008 Olympics in Beijing, Olympic champion Liu Xiang was forced to withdraw from competition in the 110-meter hurdles because of a tendon injury that failed to heal. Had he competed, he might have experienced a rupture with lifelong implications. Now athletes who endure chronic pain from tendon injuries may get relief.

Doctors at the Emory Sports Medicine Center have found that injecting platelets from a patient’s own blood to rebuild a damaged tendon has proven successful in not only relieving pain but also jump-starting the healing process. The procedure is called platelet-rich plasma therapy.

Tendons are the rope-like structures that connect muscle to bone, enabling the bone to move. When a tendon is first injured, it can become inflamed, swollen, and painful. However, most chronic tendon pain lacks significant inflammation as the tissue itself begins to break down, accounting for why traditional treatments like rest, ice, and anti-inflammatory medications often fail to provide long-lasting relief.

“When a tissue like a tendon has been injured and athletes continue to overuse it, the healing process fails us, and we are left with an unhealthy tendon that will not heal on its own,” says Emory orthopedist Ken Mautner (above). “Some blame a lack of adequate blood supply to certain tendons. Some blame too much stress to the area. Whatever the reason, the tendon needs help to initiate the healing process. For years, the last resort for these problems was surgery to try to release or cut away the damaged tendon, procedures that met with mixed success. Platelet injections allow damaged tissue to regenerate and heal.”

The procedure is performed in an exam room and takes less than an hour.

The patient’s blood is drawn and placed into a centrifuge for 15 minutes to separate out the platelets. The layer of platelet-rich plasma is then removed and injected into the diseased portion of the tendon with the guidance of an ultrasound machine.

Patients are put on a program of relative rest followed by physical therapy for the first six weeks. After six to 12 weeks, they are re-evaluated. Some patients with more difficult injuries may take more than one treatment to achieve successful outcomes. However, a majority of patients find that by three months they can return to most or all of the activities they were doing before the pain started—“sometimes activities they have been unable to do in years,” says Mautner.—Kathi Baker

The next best thing

It’s a call that any woman dreads. The results from her recent mammogram are back, and something has shown up that needs further investigation. The call-back produces anxiety and leads to another round of expensive screening tests.

Or for other women, particularly those with dense breast tissue, mammography may fail to detect a cancer altogether. With mammograms, it is sometimes hard to pick up breast cancer because we are putting a three-dimensional structure on a flat screen,” says Emory radiologist Mary Newell. “We can miss cancers that are there or see things that aren’t really there.”

Enter a new technology—computed tomography (CT) scans of the breast. These new prototype CT scanners use cone-shaped X-ray beams combined with a digital flat panel detector to produce 3D images.

During the exam, a woman lies prone on a table, allowing the breast to hang through a hole rather than being squeezed between flat panels as in traditional mammography. Below the table, an X-ray source and detector rotate around the breast. The 10-second scan gathers digital information that produces hundreds of images.

Emory is one of only three sites in the United States testing the dedicated CT breast scanner manufactured by Koning Corporation. Emory radiologists Carl D’Orsi and Mary Newell are evaluating breast CT scans compared with diagnostic mammography as a tool for detecting cancer. In a second clinical trial, they are comparing breast CT scans (enhanced with contrast dye) with MRI to characterize newly diagnosed breast cancers. And in a third study, the researchers are looking at the effectiveness of breast CT scans in detecting how tumors are responding to chemotherapy treatments.

Newell believes the ability to tell whether a cancer is responding to a particular treatment is one of the most important potential applications for the new technology. “A doctor’s hand exam is not as sensitive or specific as the dedicated CT scan may prove to be.”

With the dedicated CT breast scanner, the researchers can reconstruct the breast from any angle, top down, and side-to-side. Computer post-processing allows them to focus in on calcifications, digitally remove the nipple or unnecessary background features, and manipulate the image in any way to sort out a real or false finding.

Dedicated breast CT may end up being used alone for routine screenings or in combination with other technologies for cancer diagnosis and treatment, says Newell. “The goal is to figure out the best way to see the breast in 3D. We think we’re moving in the right direction.”—Rhonda Mullin

Challenging Crohn’s: Emory and Children’s Healthcare of Atlanta are teaming up to study the progression of Crohn’s disease in children with a $5 million grant from the Crohn’s and Colitis Foundation of America.

The study will enroll 1,100 children who recently have been diagnosed with Crohn’s, a chronic disorder that causes inflammation of the digestive or gastrointestinal tract and whose cause is unknown.

Waxing}{c}{1-888-WINSHIP or visit cancer.emory.edu.}
Incidence is steadily rising, with about 5.7 million adults in the United States. Heart failure is a chronic, progressive disease that gobbles up a person’s energy and breath, leaving them gasping, thirsty, and swollen with water retention. When a simple trip from bed to bathroom becomes a walk across a desert, their only hope may be a heart transplant.

Heart failure is a syndrome that springs from a mishmash of different diseases, a treatment is not easy to come by. Simply keeping symptoms under control is the aim of most treatment plans. Prescription beta blockers keep blood pressure under control, a low-sodium diet prevents water retention and lung congestion, and exercise maintains the heart's strength. However, to truly lessen the burden of heart disease, says Butler, prevention and early intervention are necessary. As deputy chief science adviser for the American Heart Association, Butler and others recently created a statistical model based on patient data to identify those at a high risk for heart failure. Butler hopes the risk tool will help pinpoint people at risk for heart failure despite its elusive causes.

He also has developed the infrastructure for a comprehensive study of patients with heart failure. A dozen researchers from across several disciplines already have begun collecting baseline data on patients at Emory University Hospital (EUH) and Grady Memorial Hospital. Meanwhile the number of heart failure patients at Emory University Hospital (EUH) and EUH Midtown has ballooned so much that physicians have developed new ways to care for patients involving remote monitoring, says Andrew Smith, medical director of Heart Failure and Transplantation.

Remote monitoring saves patients time and gives doctors more information about the patient's condition. "About 85% of heart failure patients admitted to the hospital have salt and water retention," says Smith. "Remotely monitoring our patients symptoms helps reduce hospitalizations."

A telemonitoring system sends the clinic a patient's weight via a cell phone every time the patient steps on a scale. Using an automated phone system, patients call a central number daily, enter their weight, and answer a list of "yes" or "no" questions. A nurse practitioner reviews the calls, and if she determines that weight gain is too rapid (more than 4 lbs. a day), she has the patient come in.

Surgically implanted pacemaker defibrillators help patients whose heart failure is complicated by heart arrhythmias. Sensor technology detects abnormal heartbeats, and the defibrillators pace or shock the heart back into rhythm.

One vendor even offers Bluetooth technology so that when patients step on a scale, the information goes to the defibrillator. At night, the information is logged into a central computer system, and the Emory heart failure team can track weight increases and give doctors a heads up.

But because heart failure is a syndrome that springs from a mishmash of different diseases, a treatment is not easy to come by. Simply keeping symptoms under control is the aim of most treatment plans. Prescription beta blockers keep blood pressure under control, a low-sodium diet prevents water retention and lung congestion, and exercise maintains the heart's strength. However, to truly lessen the burden of heart disease, says Butler, prevention and early intervention are necessary. As deputy chief science adviser for the American Heart Association, Butler and others recently created a statistical model based on patient data to identify those at a high risk for heart failure. Butler hopes the risk tool will help pinpoint people at risk for heart failure despite its elusive causes.

He also has developed the infrastructure for a comprehensive study of patients with heart failure. A dozen researchers from across several disciplines already have begun collecting baseline data on patients at Emory University Hospital (EUH) and Grady Memorial Hospital. Meanwhile the number of heart failure patients at Emory University Hospital (EUH) and EUH Midtown has ballooned so much that physicians have developed new ways to care for patients involving remote monitoring, says Andrew Smith, medical director of Heart Failure and Transplantation. Smith is anticipating the completion of clinical trials now under way at EUH and EUH Midtown for several additional investigational devices.

Ultimately, the goal of Smith and Butler is to keep heart failure patients healthy. No one lives forever, says Butler. But keeping heart disease risk factors at bay can help people make the most of their later years. —Valerie Gregg

Opening Pandora’s Music Box

One of the hardest things about having an MRI is lying still for the 10 minutes or more that it takes to complete a scan. But recently Emory patient Javed Jowers found the experience a little easier by being able to listen to his favorite songs during his MRI. On Jowers’ playlist? The Vogues, the Lettermen, Jim Croce, and the Mamas and the Papas. Emory’s radiology department is offering the customized tunes on several MRI units through Pandora, an internet radio service that allows listeners to personalize their music. Now the only challenge is to keep patients from tapping their feet to the beat. To schedule an appointment, call 404-778-7777. For more information, visit radiology.emory.edu.

Brain surgery is a big deal, requiring a complex navigation of the organ that is the center of the nervous system. But Emory neurosurgeons have found a new approach to brain surgery that is less intimidating. They now are able to remove benign tumors from deep within the brain through openings in the skull no bigger than a pea.

The new endoscopic treatment is less risky, takes less time, and necessitates a shorter hospital stay than standard surgery. In Georgia, it is available only at Emory University Hospital Midtown.

The most common brain tumors removed by this method are colloid cysts, which can cause an increased buildup of cerebrospinal fluid (CSF) in the the brain. They account for approximately 1% of all intracranial tumors. Blockage of the normal flow of CSF can lead to increased intracranial pressure—resulting in headache, vertigo, memory impairment, limb weakness, and behavioral changes. The tumors can even cause sudden death.

In most medical centers, surgeons perform a craniotomy to remove colloid cysts. The craniotomy involves a large incision and complete opening of the skull. By contrast, Emory neurosurgeon Costas Hadjipanayis removes these tumors through small incisions and openings in the skull through which he threads a 6-mm endoscope fitted with a fiberoptic camera. After identifying the location of the cyst using the endoscope, surgeons then pass 2-mm instruments through small openings to remove the tumor. They also are able to create new pathways to drain CSF so that no shunts for excess drainage are needed.

The endoscopic approach to brain surgery is one of many medical advances pioneered at Emory. Others featured on a new webpage (at emoryhealthcare.org) include endoscopic heart surgery that allows surgeons to perform coronary artery bypass without opening the chest cavity and stopping the heart, a nutritional treatment for cancer that uses soy products to release cancer-fighting genes that have been silenced, and an alternative technique for hip replacement that minimizes removal of muscle from the bone and preserves hip stability.
Emory began clinical trials of an H1N1 flu vaccine in August as one of eight NIH vaccine and treatment evaluation units. The trials tested both safety and efficacy and were critical in preparing for this fall’s evaluation units. The trials tested both safety and efficacy and were critical in preparing for this fall’s evaluation units. The trials allowed the NIH to quickly evaluate the new vaccines to determine their safety and effectiveness. Two clinical trials at Emory included healthy adults and seniors. In tandem, two pediatric clinical trials for the new vaccine unfolded at the Emory-Children’s Center. “Children and young adults are considered among the most vulnerable populations for new and emerging strains of influenza, such as the current H1N1 pandemic,” says Emory infectious diseases pediatrician Harry Keyserling, co-director of the Emory Vaccine and Treatment Evaluation Unit. “Vaccines are our most effective public health weapons against influenza.” —Robin Friske

The vaccine network

The flu patch

The small prick that comes with your flu vaccination might be getting a whole lot smaller. Skin patches containing microneedles have proven as effective as traditional hypo-dermic needles in delivering vaccine and preventing influenza in mice. These patches are more convenient, less painful, and less costly than regular needles, and researchers from Emory and Georgia Tech believe they will increase vaccination coverage as a result. Their research is published in the April 2009 issue of the Proceedings of the National Academy of Sciences and the Public Library of Science One (March 10, 2009).

The way the patches work is straightforward: they contain tiny stainless steel microneedles that are covered with inactivated flu virus and pressed into the skin, where the vaccine dissolves after a few minutes. In their research on mice, the scientists immunized two groups of rodents, one with the microneedle patches and the other with hypodermic needles, and they exposed both groups to a high dose of influenza. All of the mice in the vaccinated groups survived, while those in a control group of unvaccinated mice did not.

In addition to the effectiveness of the flu patches, “vaccine delivery into the skin is desirable because of the skin’s rich immune network,” says Emory microbiologist Richard Compans.

Even though it stimulates the immune system and is effective in patients over 60, the technique of delivering flu vaccine directly to the skin has not been widely used. The reason? It was inconvenient and required highly trained personnel to deliver the vaccine.

Delivery via microneedles changes that. Researchers say that the delivery system is so easy that patients themselves may be able to administer it. The small size of the microneedles also enables ease of transport and storage, making them ideal for use in developing countries. And finally, a format of one-use patches halts accidental re-use of hypodermic needles.

The study team has been working since the mid 1990s to develop a microneedle technology that delivers drugs and vaccine painlessly through the skin. Its next steps will involve additional testing in other animal models, such as guinea pigs and ferrets, before starting tests in humans. More studies are needed to determine the minimum vaccine dosage needed.

The work is complemented by a $32.8 million grant from the NIH to Emory and the University of Georgia to support a center on influenza pathogenesis and immunology research. The center focuses on improving the effectiveness of flu vaccine by studying how influenza interacts with its host and how flu vaccines are transmitted. —Stone Irvin

A faster response

Currently flu vaccines must be grown in chicken eggs, extracted, and then mass-produced. The process can take months when large supplies are demanded. However, at Emory, a team of scientists, led by microbiologist and immunologist Richard Compans, is working to rapidly speed up manufacturing of a flu vaccine.

How are they doing it? They are using virus-like particles (VLPs), empty shells that look like viruses but lack the ability to reproduce. VLPs are man-made decoys of natural viruses that prompt the immune system to fend off infection when exposed to the real thing. While VLPs copy the structure of authentic viruses, they are not infectious, making them safer to produce than vaccines that use live, but weak-ened, organisms.

When a person is exposed to the live virus, the immune system releases antibodies to protect against infection. That also happens with VLPs. They are recognized by the immune system as the “real” virus upon immunization, causing the body to produce antibodies, but not causing illness.

Emory became a leader in VLP research in the mid 1990s to develop a microneedle vaccination technology. "Real" virus, causing the body to produce antibodies to protect against infection. But while Emory hospitals were prepared for the H1N1 pandemic, “no one was expecting how sick the patient was,” says Emory infectious disease specialist Bruce Ribner, who collaborated with several health agencies in studying the patient’s case and outcome.

After two weeks, the patient improved enough to be taken off the ventilator and to transfer to Wesley Woods Hospital, an Emory facility located for the care of geriatric and chronic care patients. There, she relearned how to perform simple tasks (using a fork and spoon, typing on a laptop keyboard) that she had lost during a month in a coma.

Today, the patient is back home with her husband and children, and she still keeps in regular contact with many of her Emory nurses and doctors. —Lance Skelly

When swine flu arrived in Georgia

Two hospitals, 45 days, 58 physicians, nurses, respiratory therapists, and physical therapists: one pandemic, one patient’s life saved.

In April, as a new form of flu was emerging, Emory researchers were already at the forefront of studying the virus H1N1—tracking its spread across the globe, planning for its impact in the United States, and working to identify a vaccine.

But while Emory hospitals were prepared to treat patients impacted by the H1N1 virus, no one was expecting how sick the patient would be who arrived by helicopter in May. The 31-year-old mother of two young children was the first confirmed case of the H1N1 virus in Georgia. A resident of Kentucky, she already had spent more than 10 days in a hospital in Middle Georgia. She was suffering from respiratory failure with a dangerous blood clot in her lungs. Unable to breathe on her own, she needed the advanced care available only at a tertiary care center like Emory.

Atypical of other flu viruses, the one contracted by this woman was still present. “As a result, her lungs were stiffening — unable to expand and contract,” says her Emory doctor, David Schulman.

Isolated in a special ICU room that is sealed from the rest of the hospital with a reverse filtered air flow, she was placed on a breathing machine called an oscillator. It takes literally hundreds of tiny breaths per minute into the stiffening lungs to deliver more oxygen into the patient’s bloodstream.

“She was certainly one of the sickest early patients across the country,” says Emory infectious disease specialist Bruce Ribner, who collaborated with several health agencies in studying the patient’s case and outcome.

After two weeks, the patient improved enough to be taken off the ventilator and to transfer to Wesley Woods Hospital, an Emory facility located for the care of geriatric and chronic care patients. There, she relearned how to perform simple tasks (using a fork and spoon, typing on a laptop keyboard) that she had lost during a month in a coma.

Today, the patient is back home with her husband and children, and she still keeps in regular contact with many of her Emory nurses and doctors. —Lance Skelly

Web connection
For more info, visit emory.edu/flu and cdc.gov/h1n1flu/sick.htm. To hear James Steinberg, chief medical officer at Emory University Hospital Midtown discussing preparation for the upcoming flu season, visit wvbtv.com.

The flu patch

The small prick that comes with your flu vaccination might be getting a whole lot smaller. Skin patches containing microneedles have proven as effective as traditional hypodermic needles in delivering vaccine and preventing influenza in mice. These patches are more convenient, less painful, and less costly than regular needles, and researchers from Emory and Georgia Tech believe they will increase vaccination coverage as a result. Their research is published in the April 2009 issue of the Proceedings of the National Academy of Sciences and the Public Library of Science One (March 10, 2009).

The way the patches work is straightforward: they contain tiny stainless steel microneedles that are covered with inactivated flu virus and pressed into the skin, where the vaccine dissolves after a few minutes. In their research on mice, the scientists immunized two groups of rodents, one with the microneedle patches and the other with hypodermic needles, and they exposed both groups to a high dose of influenza. All of the mice in the vaccinated groups survived, while those in a control group of unvaccinated mice did not.

In addition to the effectiveness of the flu patches, “vaccine delivery into the skin is desirable because of the skin’s rich immune network,” says Emory microbiologist Richard Compans.

Even though it stimulates the immune system and is effective in patients over 60, the technique of delivering flu vaccine directly to the skin has not been widely used. The reason? It was inconvenient and required highly trained personnel to deliver the vaccine.

Delivery via microneedles changes that. Researchers say that the delivery system is so easy that patients themselves may be able to administer it. The small size of the microneedles also enables ease of transport and storage, making them ideal for use in developing countries. And finally, a format of one-use patches halts accidental re-use of hypodermic needles.

The study team has been working since the mid 1990s to develop a microneedle technology that delivers drugs and vaccine painlessly through the skin. Its next steps will involve additional testing in other animal models, such as guinea pigs and ferrets, before starting tests in humans. More studies are needed to determine the minimum vaccine dosage needed.

The work is complemented by a $32.8 million grant from the NIH to Emory and the University of Georgia to support a center on influenza pathogenesis and immunology research. The center focuses on improving the effectiveness of flu vaccine by studying how influenza interacts with its host and how flu vaccines are transmitted. —Stone Irvin

When swine flu arrived in Georgia

Two hospitals, 45 days, 58 physicians, nurses, respiratory therapists, and physical therapists: one pandemic, one patient’s life saved.

In April, as a new form of flu was emerging, Emory researchers were already at the forefront of studying the virus H1N1—tracking its spread across the globe, planning for its impact in the United States, and working to identify a vaccine.

But while Emory hospitals were prepared to treat patients impacted by the H1N1 virus, no one was expecting how sick the patient would be who arrived by helicopter in May. The 31-year-old mother of two young children was the first confirmed case of the H1N1 virus in Georgia. A resident of Kentucky, she already had spent more than 10 days in a hospital in Middle Georgia. She was suffering from respiratory failure with a dangerous blood clot in her lungs. Unable to breathe on her own, she needed the advanced care available only at a tertiary care center like Emory.

Atypical of other flu viruses, the one contracted by this woman was still present. “As a result, her lungs were stiffening — unable to expand and contract,” says her Emory doctor, David Schulman.

Isolated in a special ICU room that is sealed from the rest of the hospital with a reverse filtered air flow, she was placed on a breathing machine called an oscillator. It takes literally hundreds of tiny breaths per minute into the stiffening lungs to deliver more oxygen into the patient’s bloodstream.

“She was certainly one of the sickest early patients across the country,” says Emory infectious disease specialist Bruce Ribner, who collaborated with several health agencies in studying the patient’s case and outcome.

After two weeks, the patient improved enough to be taken off the ventilator and to transfer to Wesley Woods Hospital, an Emory facility located for the care of geriatric and chronic care patients. There, she relearned how to perform simple tasks (using a fork and spoon, typing on a laptop keyboard) that she had lost during a month in a coma.

Today, the patient is back home with her husband and children, and she still keeps in regular contact with many of her Emory nurses and doctors. —Lance Skelly

Web connection
For more info, visit emory.edu/flu and cdc.gov/h1n1flu/sick.htm. To hear James Steinberg, chief medical officer at Emory University Hospital Midtown discussing preparation for the upcoming flu season, visit wvbtv.com.
The rescue imperative: a conversation with Tim Buchman

Tim Buchman came to trauma surgery by the same route as many of his patients: injured. When a reckless driver plowed into his car, temporarily leaving him in a wheelchair, the trauma was “a personal epiphany” for the Johns Hopkins surgical resident. He discovered in himself what he calls “the rescue imperative.”

Acting on that imperative, Buchman recently arrived at Emory as the founding director of the new Center for Critical Care—the first such center in the nation to focus exclusively on critical care. Emory’s goal is to fundamentally change the critical care process to get better patient outcomes at lower costs. Emory is starting to do that by integrating all intensive care units (ICUs) throughout all its hospitals. While existing ICUs will remain geographically separate, the interdisciplinary teams who staff them will be linked under the new umbrella. That approach, says Buchman, will “standardize and harmonize clinical care, optimizing quality and reducing costs, thereby improving patient outcomes.”

As the newest interdisciplinary center at Emory’s Woodruff Health Sciences Center, the Emory Center for Critical Care also will “fulfill the Emory mantra of discovered here, practiced here, taught here,” says Jeffrey Molter, associate vice president for health sciences communications.

He knows doctors can be intimidating. He is not. He seldom wears a white coat. He often holds a patient’s hand. He introduces himself as Tim. He shakes hands, politely even when bad ones. His mac- cow, given to him by a team member at his first job as director of the surgical ICU and trauma center at Hopkins, is a beanie baby named, appropriately enough, Bucky. On clinical service in Emory’s 3E ICU, he begins rounds every morning at what is called Bucky’s Corner, alongside critical care team members and young physicians in training.

“T’m the leader, not the owner, the coach, not the quarterback,” Buchman says. “Critical care is best delivered by a team of geographically dedicated professionals, not just intensive care doctors but also nurses, respiratory therapists, pharmacists, nutritionists, and the list goes on. With the right people—and professional ‘family of choice’—exceptional care will yield great outcomes. That’s our plan.” —Sylvia Wrobel

For more information on the new center, call 404-712-2654.

THE RESCUE IMPERATIVE: A CONVERSATION WITH TIM BUCHMAN

The rescue imperative: a conversation with Tim Buchman
Making movies for monkeys

The plot: someone assembles a hat, adding stickers and other doodads, one at a time, and then dons the finished creation.

The audience: four rhesus monkeys at the Yerkes National Primate Research Center.

The core and affiliated faculty, spanning several universities and areas of expertise, are widely recognized for work on a variety of topics, ranging from prevention of intimate partner violence and child abuse to promotion of sustainable prehospital trauma care systems worldwide.

“Connecting research to communities is a primary focus for CDC, and we are pleased the Center for Injury Control at Emory is now part of this critical research network,” says Lilliana Arias, director of CDC’s Injury Center. ““The work at Emory and in Atlanta will fill a critical gap and can help shape a better understanding of how to improve the lives of those affected so that they can live to their full potential.”

A Capitol rotation

Most fourth-year medical students expect their schedule to include rotations in a clinic, doctor’s office, or hospital. But Jackie Green, a 2009 graduate of Emory School of Medicine, had something a little different in mind. She spent six weeks of her last semester of medical school at the Georgia State Capitol.

“Jackie was the first person with the insight to ask for a rotation at the Capitol,” says Sharon Cooper, Georgia Representative of District 41, who supervised Green as a health policy intern in the Georgia House of Representatives. It was a first not just for Green but for the medical school as well.

Cooper chairs the Georgia House Health and Human Services Committee, making her an ideal candidate to direct Green beneath the general guidance of Dr. Stuart Zola, director of the Emory Injury Center.

“Jackie’s work with legislators on health policy was new to Green,” says Cooper, “but for the medical school as well.”

Dr. Cooper’s work on health policy was crucial to the development of future physicians, and Jackie Green is an example of the kind of leadership that is necessary to create healthy societies.

While working with legislators on health policy was new to Green, working to influence policy was not. She had served as an officer in HealthSTAT, a student-run, nonprofit group that influences health legislation. When HealthSTAT took an active role in the effort to keep Grady Hospital open, Green helped organize students for a campaign that drew attention to the hospital’s plight. (See Emory Health, spring 2008.)

This passion for effecting positive change in health policy made Green’s time spent with Rep. Cooper more than a learning experience. “It was great for me because I was invested in the policy decisions,” says Green, “...and I learned how to work on several health policy bills and helped with the successful passage of the Medical Practice Act, which clarifies the roles and responsibilities of medical professionals.”

Moving forward, Green hopes to return to service in the public sector, either as a health policy advisor or in a legislative role, and she is excited about the possibilities that lie ahead.

For more information about research on injuries and their prevention and treatment, the CDC sponsors a national public health surveillance system that tracks the nature and extent of injuries and their prevention and treatment.

Control to conduct research on a wide variety of injuries and their prevention and treatment, the CDC sponsors a national public health surveillance system designed primate research centers with experience in sharing the excitement of science with young students. Under a grant headed by Buffa, the six students hired as interns spent two weeks learning the basic concepts of neuroscience. They then divided up to work under the tutelage of Yerkes scientists to develop topics about cognition and memory, emotional processing, the role of the basal ganglia in Parkinson’s, and how brain volume changes with age.

High school interns watch TV monitors (with Yerkes director Stuart Zola) to observe and record primates’ reactions to the short movies they made during an educational summer program fueled by economic stimulus funds.

While in medical school at Emory, Jackie Green (left) worked as a health policy intern at the Capitol, guided by Representative Sharon Cooper, who herself holds a masters in nursing.

“Most fourth-year medical students expect their schedule to include rotations in a clinic, doctor’s office, or hospital. But Jackie Green, a 2009 graduate of Emory School of Medicine, had something a little different in mind. She spent six weeks of her last semester of medical school at the Georgia State Capitol.”

—Arthur Kellermann, Emory’s associate dean for health policy in the medical school, about Jackie Green, the first medical student to work under the tutelage of Yerkes scientists to develop topics about cognition and memory, emotional processing, the role of the basal ganglia in Parkinson’s, and how brain volume changes with age.

“Most fourth-year medical students expect their schedule to include rotations in a clinic, doctor’s office, or hospital. But Jackie Green, a 2009 graduate of Emory School of Medicine, had something a little different in mind. She spent six weeks of her last semester of medical school at the Georgia State Capitol.”

—Arthur Kellermann, Emory’s associate dean for health policy in the medical school, about Jackie Green, the first medical student to work under the tutelage of Yerkes scientists to develop topics about cognition and memory, emotional processing, the role of the basal ganglia in Parkinson’s, and how brain volume changes with age.
Health care costs have risen to the forefront of national discussions as one of the economic factors contributing to the strain on American families, businesses, and health care providers. According to recent data from the Organization for Economic Cooperation and Development, health care costs comprise approximately 15% of the United States gross domestic product (GDP). By comparison, other major industrialized nations spend 8% to 10% of GDP on health care yet manage to make it available to a greater proportion of their citizens. Although the United States spends more on health care than other developed nations, we continually rank below peer countries when it comes to health care outcomes and patient satisfaction. Furthermore, we have a shortage of physicians, a rising number of people without insurance, and a financial crisis that may ultimately undermine efforts to address these issues.

As a nation, we are struggling to find answers. We need a solution whereby we have enough providers who can increase access to health services, provide quality care, and reduce costs. Enter the advanced practice nurse (APRN).

An advanced nurse practitioner offers one solution for the health care crisis.

By Michelle Mott

There comes a time when we face a challenge that defines who we are—a time when meeting the demands of said challenge forces us to reexamine how we have been functioning. In health care, we are at one of those times now. Wherever we turn, the message is clear—improve quality, safety, and accessibility while making cost affordable.
Using the “r” word

Serious, and particularly honest, discussions about reforming the U.S. health care system (Emory Health, Summer 2009) represent a sociopolitical minefield. Health care needs are virtually infinite while resources for treatment are finite. Consequently, in the interest of equality and fairness, this must involve cost/benefit analysis in the allocation (rationing) of health care resources. With the sophistication and accuracy of available metrics, quite conceivably a monetary value can be placed on a human life. How many politicians or bus workers would support the use of such parameters to determine who receives medical treatment? Further, U.S. politicians at the highest levels of government have been admonished not to use the term “rationing” since this is considered a politically threatening word. But not using “rationing” is disingenuous, and no issue can be effectively resolved until all obvious facets of the issue are honestly considered. Given that political efforts to resolve a spectrum of critical issues facing the United States have produced only marginal results, any meaningful health care reform will (A) not likely occur or (B) consist of political expedient measures that accomplish little beyond shoving the issues down the road. A rather bleak— but honest—assessment.

Dale E. Hunt, Professor Emeritus of Dentistry, Atlanta, GA

To see your business here, advertise in Emory Health

Emory Health is launching an advertising program with this issue. If you have a business, service, or opportunity that you’d like to promote, an ad in Emory Health is the way to reach your audience.

Emory Health | Leadership

Emory Health | Woodruff Health Sciences Center

Emory Health | Emory Healthcare

Emory HealthConnection 404-778-7777 and 1-800-TEMSEROM
Emory University Hospital Midtown HealthConnection, 404-778-2000
Wesley Woods Senior Resource Line, 404-778-7710
For physicians: Emory Consultation Line, 404-778-5050

Emory Health

Need an appointment for an Emory doctor quick? Interested in registering for a prenatal class? Want to learn about cardiac CT scans at Emory? Helen Smith can help you with that and more.

Smith is one of the 14 registered nurses who answer 16 phone lines at Emory Healthcare’s HealthConnection. A one-stop shop for patients and referring physicians, HealthConnection is available 7 a.m. to 7 p.m. each weekday. Would you like to know more?

For an example of listing of names, department chairs, and center directors, see when Emory.edu/home/about/leadership/academic-leadership.html, when Emory.edu/home/about/leadership/departments.html, and when Emory.edu/home/research/centers/index.html.
GROWING UP ON A FARM in Cuthbert, Georgia, Viola Castleberry learned simple but important lessons: be honest, work hard, and be responsible. And so she took responsibility for her younger brother, Bill, who has a learning disability.

Now he is 84 and living with Parkinson’s disease, and she is taking responsibility for advancing a cure.

Castleberry’s bequest to the Yerkes National Primate Research Center will support the nation’s best scientists as they work to unravel the mysteries of neurodegenerative diseases such as Parkinson’s and Alzheimer’s.

Learn how you can support Emory health sciences in your estate plans. Call 404.727.8875 or visit www.emory.edu/giftplanning.