

REHABILITATION CAN CURB CANCER'S SIDE EFFECTS

Bob Rigdon, who farms beef cattle and sells used cars in Red Creek, was a strong and physically active 65-year-old until physicians found a tumor and removed it, along with part of his left lung.

The surgery left Rigdon, 65, struggling to breathe and unable to walk across a room.

Rigdon joined a cancer rehabilitation program at Upstate. Such programs have grown out of the recognition that side effects can greatly impact a patient's quality of life, whether brought on by cancer or its treatment.

Physicians have long prescribed exercise to reduce fatigue and physical therapy for lymphedema. Now those are part of a comprehensive, personalized service.

Customized Treatment

"It's individualized," said physical therapist Cassi Terpening. "One person may have nausea and fatigue, and another might have weight loss and weakness. It depends on how they're being treated. Drugs have different side effects."

A physical therapist works with the patient's doctor and medical providers to create a rehabilitation plan. It may focus on improving muscle strength, balance and/or aerobic capacity, decreasing pain or preventing bone loss. Therapy may include a variety of exercises, range of motion activities, relaxation, splinting and other strategies.

Rigdon's therapy began two days after surgery, in the hospital. The first sessions focused on mobility and endurance and soon began emphasizing flexibility and strength.

"His endurance was extremely lacking when he first came in," recalled therapist Matt Bowman. Rigdon was able to walk a treadmill for 10 minutes at about 1 mph. Four months later, he was



Therapist Matt Bowman works with Bob Rigdon, a lung cancer patient, at an Upstate rehabilitation center.

Call 315-464-6543 to schedule appointments at any of the four outpatient rehabilitation services for the Upstate Cancer Center:

- Institute for Human Performance, 505 Irving Ave., Syracuse
- Physical Therapy at Manlius, 102 West Seneca St., Suite 200
- Upstate Bone and Joint Center, 6620 Fly Rd., Suite 201, East Syracuse
- Upstate University Hospital, 750 E. Adams St., Syracuse (for lymphedema services)

walking for a half hour at about 2 mph.

How long does physical therapy last? It depends on whether the patient is making progress and how his or her ability compares with healthy people of the same age. It can be a long process.

"Patients have to be in the right mindset and realize it's not going to change overnight," Bowman said. "Building endurance while working with fatigue takes time."

Medical research indicates that exercise can combat fatigue. Terpening said that starting a rehabilitation program before, during or even after cancer treatment can lead to lower fatigue, improved quality of life and overall function. ■



NY Governor Andrew Cuomo talks with the media prior to giving a presentation at Upstate Medical University in May.

GRANTS BOOST RESEARCH, CREATE JOBS

Upstate Medical University and three partner schools (SUNY Oswego, SUNY College of Environmental Science and Forestry and Onondaga Community College) are the recipients of a \$15 million Governor's Challenge Grant to start an institute of environmental health and medicine.

The institute's goal is to improve health through understanding the impact of the environment. In addition to degree programs, the institute will likely support the creation of new startup companies in the early years of the program, and create permanent jobs, most in the field of wireless technology.

"This is a regional approach to addressing environment and human health needs," Upstate

President David Smith, MD told WRVO radio. "We're going to see spin off in a variety of areas, not just on the individual's health, and work site health, but also in collaboratives with business."

In April, Gov. Andrew M. Cuomo announced energy efficiency upgrades for Upstate that will save the campus \$1.3 million and remove 6,250 tons of greenhouse gases from the atmosphere annually. That's the equivalent of removing more than 1,180 cars from the road.

The New York Power Authority is financing and implementing the nearly \$21 million project, part of the "Build Smart NY" initiative which aims to increase energy efficiency in NYS buildings by 20 percent over the next seven years.

Continued on page A3

Grants – Continued from page A2

The Doctor of Physical Therapy program and the Nursing program at Upstate will receive a portion of the money Gov. Andrew Cuomo is making available to support workforce development in high-need career fields.

Healthcare is among the six high-need areas that the state Department of Labor projects to have a large number of openings, a high growth rate or a combination of both in the coming years.

The physical therapy program funding totals \$181,000, and the nursing program will receive \$300,000 over the next three years.

A project of Upstate and Environmental Science and Forestry scientists that uses new synthetic enzymes to create bioethanol has been awarded \$50,000 from the SUNY Technology Accelerator Fund.

Leading the collaborative are Stewart Loh, PhD, professor and vice chair of biochemistry and molecular biology at Upstate, and Arthur Stipanovic, professor of chemistry at ESF.

“Our technology may help convert plant waste into liquid fuel for cars and trucks,” said Loh. “Not only is bioethanol renewable, it’s more greenhouse friendly than fossil fuels. The award connects us basic researchers with partners in the biofuels industry who can help take our ideas to products.”

For their project, Loh and Stipanovic are using a set of protein building tools developed at Upstate and protein activity testing technology developed at ESF to produce synthetic cellulosomes for bioethanol production.

Synthetic cellulosomes will enable bioethanol producers to efficiently degrade cellulose-rich feedstocks, such as wood and switch grass, into sugars from which ethanol can be produced, helping to make bioethanol a cost-competitive alternative to petroleum-based gas and diesel.



Stewart Loh, PhD is working on synthetic cellulosomes for bioethanol.



James Knoll IV, MD is developing a suicide monitoring device.

Three small companies with links to Upstate will receive \$200,000 to accelerate the research and development of new products.

Funding comes from CenterStateCEO’s grants that support innovative and applied research projects between universities and industry. Funding is provided by the New York State Senate, through the support of state Sen. John DeFrancisco.

Receiving a \$150,000 grant is Rapid Cure Technologies, a SUNY College of Environmental Science and Forestry spin-off company based in the Central New York Biotech Accelerator on the Upstate campus.

Rapid Cure develops specific chemistry and process solutions in the coating, adhesive, sealant and elastomer (CASE) markets.

Winners of \$25,000 grants have Upstate connections – Blue Highway and Zinnia Safety Systems.

Blue Highway Inc., with the Upstate Cancer Center, is developing a system to manage the care of cancer survivors once they return to their primary care physicians. The project is being assisted by Leslie Kohman, MD, medical director, Upstate cancer center, and Linda Veit, project manager for the center.

Zinnia Safety Systems, based in the CNY Biotech Accelerator, is developing a technology that will be the first medical device system for monitoring individuals at risk for suicide. Used by hospitals and penal institutions, the system would identify suicide attempts and notify staff to intervene before the person is seriously injured. Andrew Kaufman, MD and James Knoll IV, MD, faculty members of Upstate’s Department of Psychiatry and Behavioral Sciences, are system developers. Zinnia Safety Systems received a \$50,000 SUNY Research Foundation grant last year. ■

KNOW WHERE TO GO FOR STROKE CARE

UPSTATE SERVICES UNIQUE TO REGION

In theory, the staff at any hospital emergency room should be able to care for a patient who is having a stroke.

In reality, the stroke team at Upstate University Hospital has the most experience and most advanced equipment for treating patients in the Central New York region with any type of stroke.

The stroke team — an emergency physician, a neurologist, a stroke coordinator and emergency nurses — assembles as soon as paramedics alert the emergency department they believe their patient has had a stroke. In addition, the nursing supervisor is alerted, along with the pharmacy, laboratory and radiology departments.

The goal is not only to save a life, but also to save brain cells.

Upon Arrival

Patients who arrive by ambulance often have one IV in place for medication, so nurses insert a second so blood can be drawn.

One of the first tests measures blood sugar, since symptoms of hypoglycemia can mimic those of stroke. A doctor will conduct a neurological exam that tests different areas of the brain (consciousness, speech and language, memory, eye movement, reflexes, sensation and walking and balance). An MRI can reveal narrowing or blockages of blood vessels in the brain. Other tests may be used to measure blood flow and detect clots.

A medical history is crucial: Has the patient had surgery recently? Taken blood thinners? Had elevated blood pressure or intestinal bleeding?

Interventions for ischemic strokes may include the use of tissue plasminogen Activator, which must be administered within three hours of the onset of a stroke. In some cases, concentrated doses of tPA can be placed at the site of the stroke within the brain. Upstate also offers a clot-retrieval procedure



Eric Deshaies MD directs the neurovascular service at the Upstate Stroke Center.

WHAT TO TELL YOUR PATIENTS

- 1. If stroke is suspected, call 911. Ask paramedics to transport to Upstate University Hospital, downtown.**
- 2. Not all emergency rooms are alike. Upstate downtown is best qualified to diagnose and treat patients with any type of stroke.**
- 3. Go where the experts are. In addition to treating patients, Upstate physicians are faculty who train the next generation of doctors in stroke care.**
- 4. Upstate physicians are involved in research that may advance stroke treatments or help prevent stroke, and they may provide patient access to clinical trials.**
- 5. The same ensemble of caregivers looks after stroke patients at Upstate from the emergency room, through treatment and into rehabilitation. Upstate is the only hospital in the region with specialized neuroscience and rehabilitative floors for stroke patients.**

in which an interventional neuroradiologist threads a stent to the clot within the brain, then captures the clot for removal from the body. Both procedures are time-sensitive and may not be options for patients who have been slow to seek care — or who did not seek care at Upstate.

A smaller percentage of strokes are the hemorrhagic kind. Depending on the location

Continued on page A5

Stroke Care – Continued from page A4

and severity of the aneurysm, surgeons at Upstate may be able to place a clip at the base of the aneurysm so blood cannot escape. Or, they may elect to treat the aneurysm from inside the blood vessel, by placing platinum micro-coils that act as a barrier to blood flow.

Some patients undergo a cooling process during treatment of their brain injuries. In some patients, staff monitor the oxygen level of brain tissue.

As their conditions improve, patients may be transferred to other units, including one with 35 beds devoted to patients with neurological problems. Nurses and therapists who specialize in stroke care are stationed on these floors.

Stroke Inpatient Care

Upstate features the region's only specialized

neuroscience and rehabilitative floors. Within 24 hours of a stroke patient's admission to the hospital, physical, occupational and speech therapists and a psychiatrist evaluate to determine the needs of the patient. Rehabilitative therapy begins almost immediately, depending on the severity of the stroke. Upstate has an inpatient rehabilitation unit, where patients may be moved when they are able to handle three hours per day of therapy.

People who have had ischemic strokes stay an average of seven days, while those who have had hemorrhagic strokes stay an average of 20 days.

The stroke team at Upstate trains the next generation of doctors in stroke care, and is involved in research that may advance stroke treatment or help prevent stroke. ■

LOOKING AHEAD WITH UPSTATE PRESIDENT DAVID SMITH MD**UPSTATE ATTRACTS DOCTORS WHO GIVE BACK TO THE COMMUNITY**

One of our goals is to serve our region, both by recruiting and admitting students from New York state, and by preparing our graduates to care for our state's diverse population. We have made a concerted effort to supply a well-educated workforce to the region, and this ties back to our original mission.

Our values go back generations. Upstate's medical school was founded, in 1834, to prepare doctors to serve the new population along the Erie Canal – not to mention the disease and pestilence that followed that growth, and the environmental hazards along the way. We were created to train doctors who would work to solve those problems and who would care for the community.

I'm not sure we've ever turned our back on the urgency from which we were created. It's in our roots. That sense of place and of being well-grounded continues today. That's why we've been able to attract such engaged, passionate students. It's remarkable. Across our four colleges, Upstate students have a keen awareness of the environment and individual circumstances. They have a high level of compassion and caring. They are doing and going above and beyond what is required in the classroom and the laboratory. They are ready and willing to meet today's needs.

So their potential probably has not been fully realized – which gives us great hope for being able to do the things we're going to have to do in the future.

TREATMENTS FOR TRIGEMINAL NEURALGIA

Diagnosing trigeminal neuralgia (TN) requires a detailed patient description of symptoms, along with a thorough neurological exam. Even then, the disorder is easily mistaken for a toothache, cluster headaches or another ailment.

TN is characterized by sharp, shooting electrical-like shock sensations usually to the lower face or jaw and sometimes to the eye or forehead. The pain is brief, affects one side of the face and can be triggered by a patient chewing or touching his or her face, or by wind blowing on the face. “It’s the most excruciating pain you can experience,” says Lawrence Chin, MD, chair of Neurosurgery at Upstate.

Excruciating pain

The pain comes from the fifth cranial nerve, the trigeminal nerve, whose lining has been stripped away over time by the compression of an artery. “As you get older, your brain sags like every other part of your body,” Chin explains. “That might bring the artery more in contact with the nerve.”

Equal numbers of men and women are affected by trigeminal neuralgia, which occurs with greater frequency as people age. When TN is found in someone younger than 50, Chin says its origin may be from something else, perhaps multiple sclerosis.

Anticonvulsants or tricyclic antidepressants are the first line treatment. Some help make the diagnosis of trigeminal neuralgia. But, medications may not work, and some patients cannot tolerate the side effects of drowsiness.

Taking pressure off the nerve

Chin says the gold standard treatment is microvascular decompression, in which a small hole is drilled through the skull, allowing a neurosurgeon to locate and move the offending artery.



Neurosurgeon Lawrence Chin, MD.

“We take the pressure off the nerve,” he says, adding that the surgery is effective for 99 percent of his patients. About one-third will have a TM recurrence in 10 to 15 years.

The alternative is treatment with the gamma knife. A tiny beam of radiation is focused onto the nerve, which is 3 to 4 millimeters wide. This causes a blockage that helps prevent pain impulses without harming sensation. Chin says patients can experience numbness, but most do not. For those who do, numbness is usually temporary. Gamma knife treatment is effective in about 75 percent of patients, Chin says. The remaining experience a reduction in pain that allows them to take lower doses of medication.

For referrals to the neurosurgery service at Upstate, call Upstate Connect at 315-464-4842 or 1-800-544-1605. ■

UPSTATE ROUND UP

Samaritan Medical Center in Watertown collaborated with Upstate to restore the **neurosurgery service** that ended more than a year ago with the departure of two neurosurgeons. Samaritan purchased a magnetic imaging center and has physicians from Upstate and Neurosurgical Associates of Central New York.

The Watertown neurosurgery office is located at 629 Washington St., about a block from the main hospital. The practice specializes in brain tumors, spine disorders, radiosurgery, neurovascular and pituitary disorders and pediatric, general and functional neurosurgery.

Seiji Matsumoto, MD, one of the American Urological Association's Academic Exchange Program Scholars this year, selected Upstate's **Gennady Brastlavsky, MD** as a mentor during his time in the United States this spring. Matsumoto is an assistant professor in the Department of Renal and Urological Surgery at Asahikawa Medical University in Japan. (pictured at right)



Medical toxicology consults are available through Upstate for patients with adverse health effects due to medications, occupational or environmental toxins, or biological agents. **Ross Sullivan, MD** is medical director. Reach a toxicologist through the Poison Control Center at 315-464-5369 or 315-476-4766.

The Wound Care Center at Upstate University Hospital's Community Campus has merged with the Downtown Campus, so that all services can be provided at one location. Patients have access to physicians and nurses trained in problem wound management including venous stasis ulcers, diabetic foot ulcers, pressure ulcers, arterial insufficiency ulcers, and other atypical wounds.

Services include wound physician management, wound debridement, vascular assessment, specialty foot wear, compression therapy, advanced treatments such as skin substitutes and hyperbaric oxygen therapy, and access to other specialty service referrals.

Physicians accepting referrals (through 315-464-4910) include **Marvin Heyboer, MD; Shane Jennings, MD; Peter Mariani, MD** and **Monica Morgan, MD**.

A comprehensive midwifery service now operates on Upstate University Hospital's Community Campus, offering both obstetrical and gynecological care. The office is staffed by director of the Upstate Midwifery Program, **Heather Shannon** and **Lesli Warren**, both nationally accredited certified nurse midwives. **Brian Thompson, MD** is medical director of the program. (pictured at right)



EMS and Disaster Medicine physicians David Landsberg, Charles Beaudette, Christian Knutsen, Jeremy Joslin and Derek Cooney.

Upstate hosted one of the largest Emergency Medical Services training efforts undertaken by the hospital outside of Onondaga County in May with a training day in Auburn, in Cayuga County.

"Presenting EMS training where first responders live ensures all who arrive first at an accident have advanced training," said **Doug Sandbrook**, director of Upstate's paramedic program. He said educational programming and teleconferencing is being considered for other outlying communities.

"Upstate is responding to the needs of the region to ensure that Central New Yorkers have the best care when first responders arrive on the scene," said **Derek Cooney, MD**, director of Upstate's Fellowship Program for EMS and Disaster Medicine.

Upstate University Hospital is the area's only Level 1 trauma center and provides certification and continuing medical education program to 700 EMS professionals annually.

Upstate has consolidated several specialty services into the building at 550 Harrison St., now called **Upstate Specialty Services**. At that location, which offers easy-access parking, you'll find audiology services; the Patricia J. Numann, MD Center for Breast Care, Endocrine Surgery and Women's Imaging; burn clinic; ENT/Cleft and Craniofacial Center; CT/MR services; geriatrics; interventional radiology; lab services; ophthalmology; outpatient surgery center; PET/CT and ultrasound services; pre-admission testing; radiology, surgical specialties; university internists; and urology. Referrals are through Upstate Connect at 315-464-4842 or 1-800-544-1605. ■

