
**The Upstate Cancer Center is home to the intraoperative MRI suite (pictured below with some of the nurses and MRI technologists.)**

# ADVANCED NEUROSURGERY SUITE ALLOWS FOR MRI SCANS DURING OPERATIONS

Ordinarily after Satish Krishnamurthy, MD, removes a brain tumor in a patient, he finds the family in the waiting room. "I think we took out most, if not all, of the tumor," he tells them, "but we will get a scan to make sure we took it all out."

Sometimes after the scan, the neurosurgeon has to arrange a second operation to remove any tumor that was left behind.

Now Krishnamurthy's conversation has changed, thanks to the new intraoperative suite with MRI scanner in the Upstate Cancer Center. After he removed a brain tumor recently, he told his patient's family, "I KNOW we took all the tumor out.

"We had the ability to get an MRI scan before we closed the incision to figure out whether the tumor was, indeed, totally removed," Krishnamurthy explains.

He performed the first surgery in November in the new intraoperative suite, an expansive operating room which includes a 3 tesla magnetic resonance imaging scanner. It is located in the Upstate Cancer Center, which is attached to Upstate University Hospital, but the intraoperative suite can also be used for patients who have tumors that are not cancer.

Obtaining an MRI scan during brain surgery involves additional steps that are complicated — and only available within an intraoperative suite like this one.

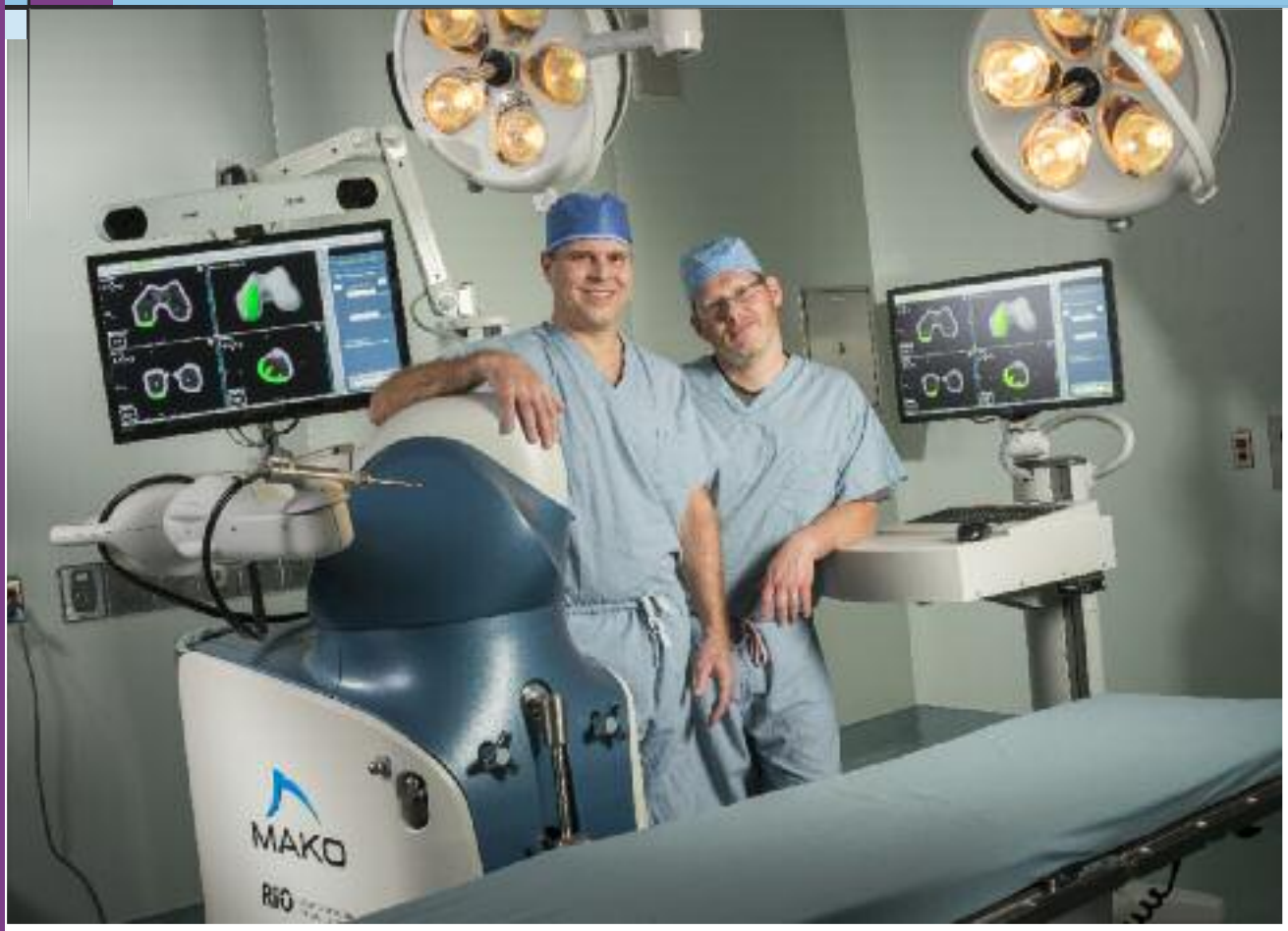
"We safely moved our patient — while under anesthesia, with his head fixed to a clamp and all of the attached lines — more than 20 feet from the operating room to the scanner and back 20 minutes later.

**Satish Krishnamurthy, MD**

"We made sure that everything on the patient was non-magnetic (due to the MRI scanner's magnetic field.) Afterward, we re-draped the patient and completed the surgery.

"The entire process, and in fact the entire surgery from beginning to end, was entirely flawless," Krishnamurthy says. "This was not a coincidence but a result of months of preparation for the day that we brought our first patient in."

As impressive as the operating room and state-of-the-art equipment are, Krishnamurthy says success relies on the expertise of the entire team which includes the operating room staff, anesthesia team and MRI technicians. ■




**Orthopedic surgeons Timothy Damron, MD and Robert Sherman, MD with the MAKO robotic arm.**

# ROBOTIC TOOL IMPROVES ACCURACY IN HIP, KNEE REPLACEMENTS

The orthopedic staff at Upstate University Hospital has a new tool called the Mako that helps surgeons precisely install replacement parts for hips and knees.

"The Mako is a robotic arm that is connected to a series of computers that allows the machine to recognize where — in a three dimensional space — the tip of that arm is located," describes orthopedic surgeon, Robert Sherman, MD.

A patient undergoes computerized tomography before the operation. The surgeon uses that CT scan to build a 3-D computer model of the joint. In the operating room, the surgeon marks on the patient with a special marker that contains a tracker which the robotic arm reads.

For hip replacements, the surgeon indicates on the 3-D model the angle and depth of where the metal cup, ball and socket should be placed. The robotic arm matches that information with the marks on the patient's body and does not allow the surgeon to stray from those areas.

For partial knee replacements, the robotic arm follows the plan created by the surgeon on the 3-D model and, using an attached burr, removes the least amount of bone necessary. Then a piece of metal replaces the arthritic bone to recreate the knee joint.

The Mako "is a way to help accurately and precisely put these pieces in exactly where we want," Sherman says. "When I leave the operating room, I know everything's perfect. I don't have to second guess myself."

To learn more about hip and knee replacement options at Upstate, visit www.upstate.edu/Mako. ■

# NEW ICD IMPROVES VFIB ODDS

A new style of implantable defibrillator provides protection against sudden cardiac arrest without having electrical wires placed in the heart. Instead, all components of the device are sewn into place just beneath the skin.

The device — which The Heart Group of Syracuse cardiologists, Traian Anghel, MD, and Jamal Ahmed, MD, began using in 2014 at Upstate — monitors a patient's heart rate and delivers a shock if necessary. "This which essentially resets all of the electrical activity of the heart cells," says Anghel.

Anghel says a battery-operated pulse generator about the size of a deck of cards is placed beneath the skin below a patient's armpit. A wire electrode stretches below the skin from the generator to the breastbone. It senses the heart's electrical signals and transmits that data to the generator, and, if needed, delivers therapy back to the heart.

Implantable defibrillators have been in use for about 40 years. Earlier models rely on a wire to be threaded through a blood vessel, into the heart, across a valve and then attached to the heart wall.

For patients who are prone to ventricular fibrillation, Anghel says the risk of sudden cardiac death can be as high as 1 in 6 per year. He says an implantable defibrillator can significantly improve those odds. ■

# STUDY SEEKS PATIENTS WITH TYPE 1 DIABETES

A medication commonly used to treat gout is being tested in a clinical trial at the Joslin Diabetes Center at Upstate Medical University as a possible therapy to prevent the loss of kidney function that sometimes occurs in people with Type 1 diabetes.

If proved successful, the drug, allopurinol, can provide a safe and inexpensive treatment that can be given at the earliest clinically detectable stages of renal injury in persons with Type 1 diabetes.

People with Type 1 diabetes are being recruited for this 3 ½-year study, PERL (Preventing Early Renal Function Loss in Diabetes), which is being conducted at Joslin and seven other diabetes centers in the United States and abroad. The research is supported by the National institutes of Health.

Collectively, 480 patients will be recruited to participate in the study. Upstate is looking for volunteers from the Central New York region.

Ruth Weinstock, MD, PhD, medical director of the diabetes center and the principal investigator of the trial at Upstate, says that evidence from previous studies indicates that moderately elevated serum uric acid is a strong, independent predictor of an increased risk of chronic kidney disease and increased rates of loss of kidney function among persons with Type 1 diabetes.

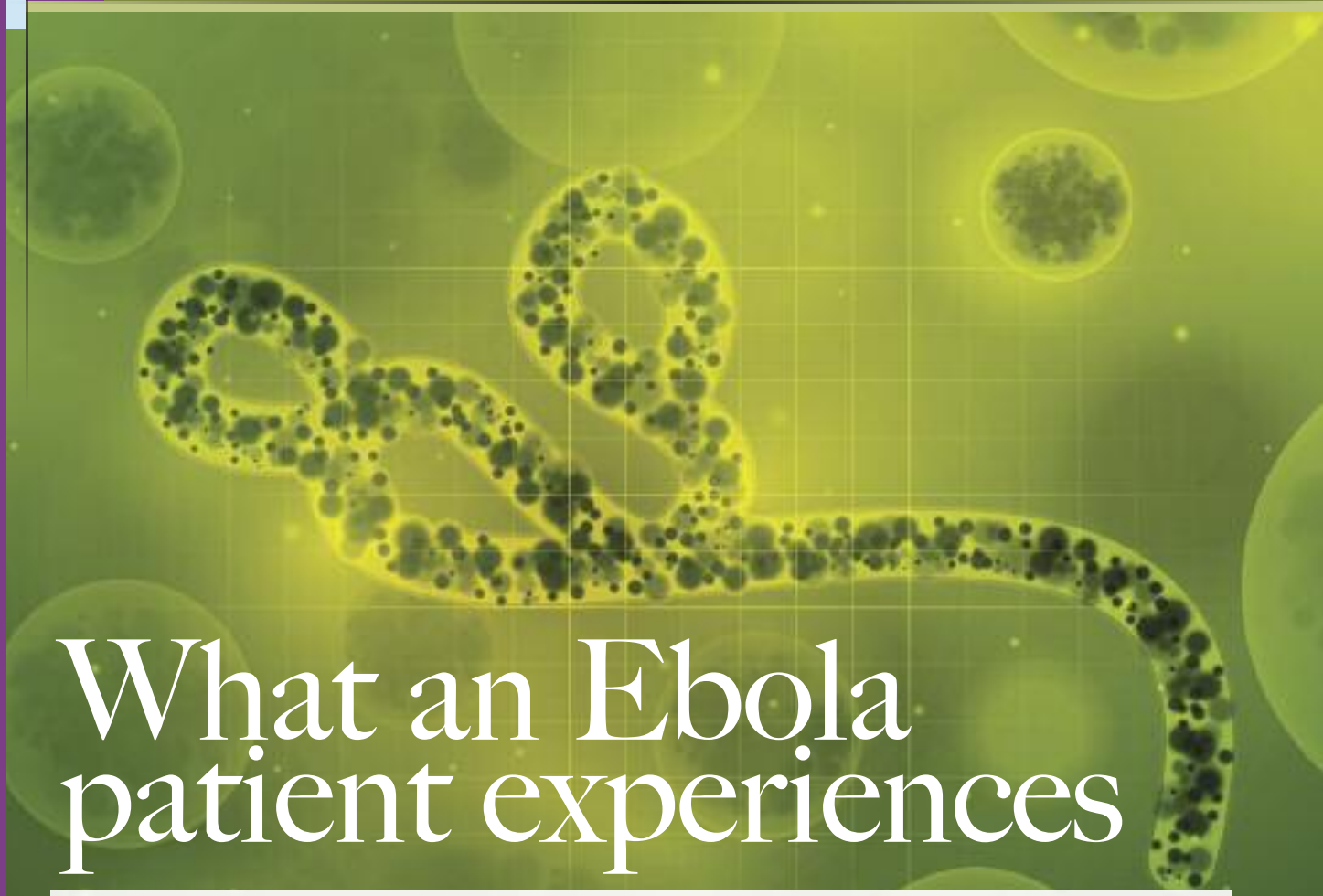
"Allopurinol is an FDA-approved medication that has been safely used for many years to decrease high blood uric acid and treat gout, a disease characterized by arthritis," Weinstock says. "There is some evidence suggesting that allopurinol might also be useful in people with diabetes who have normal kidney function or early to moderate kidney function loss by decreasing uric acid, therefore reducing the risk of developing kidney disease in the future. Findings from this study will add to the research."

The clinical trial will evaluate the effectiveness of allopurinol as compared to placebo in reducing kidney function loss among people with Type 1 diabetes.

Volunteers must visit the Clinical Research Unit at Upstate over a period of about 3 ½ years and take allopurinol or a similar-looking placebo once a day during the study.

Weinstock says that although the PERL trial targets Type 1 diabetes patients at highest risk of kidney function decline, the use of allopurinol as a renoprotective agent may also be relevant to relatively low-risk Type 1 diabetes patients.

**To learn more about the study or about eligibility, contact study coordinator Jane Bulger at 315-464-9008.** ■



# What an Ebola patient experiences

A patient who survives Ebola suffers through some nasty symptoms, and then his or her body regroups to muster a fight against the virus.

"One of the big problems with this disease is it impairs adaptive immunity. You don't develop an antibody response initially, so you're not killing off the virus appropriately," James Sexton, MD, an assistant professor of medicine in pulmonary and critical care at Upstate University Hospital, told medical staff in a lecture about the disease that dominated American headlines late last year.

### Designated Hospital

Infectious disease precautions are part of standard training for doctors, nurses and other hospital staff. They have been practicing how to care for a patient with Ebola since before Upstate was designated one of eight hospitals in New York State that would handle Ebola patients.

People who arrive at Upstate are asked whether they have traveled to Guinea, Liberia, Mali or Sierra Leone or had contact with anyone who has been diagnosed with Ebola. "The priority here is identification and safe handling of that patient and protection of our staff," explained Christopher Dunham, Upstate's director of emergency management. Anyone suspected of having Ebola would be placed in an isolation room. Then as their treatment began, a doctor from Upstate would confer with Onondaga County and state health officials, and the Centers for Disease Control and Prevention.

Part of the preparedness training at an academic medical center such as Upstate includes educating staff in the science of the disease, which is what Sexton's lecture accomplished.

### Incubation Period

He said most people develop symptoms five or six days after they are infected, although some people have developed symptoms beyond the 21-day incubation period. An infection typically begins with fatigue and fever. Initially, the virus affects macrophages and dendritic cells.

# Facts about Ebola

**Almost 1.07 million people in Africa do NOT have Ebola.**

**Ebola belongs to the same order of viruses — called the Mononegavirales — as measles, mumps, rabies and Marburg, a hemorrhagic fever virus.**

**There are five strains of Ebola. The one in the news lately is called Zaire, and it is responsible for a large outbreak affecting Guinea, Liberia and Sierra Leone and a smaller outbreak in an isolated village in the Congo.**

**The virus is not a respiratory virus. It enters the body through the mucus membranes or a break in the skin. Cases of transmission have also been reported through needle sharing and through the ingestion of meat from bats, monkeys or primates that carried the disease.**

**The blood, feces and vomit of someone with Ebola are most infectious. Urine, semen and breast milk are less so. Saliva and tears may be infectious. Sweat is probably not.**

Source: James Sexton, MD

**James Sexton, MD** **Christopher Dunham**

## Symptoms

The diarrhea that develops can be severe, with patients losing up to 10 liters per day. "Obviously you're going to have all sorts of problems from fluid and electrolyte losses if you're putting out that much diarrhea," Sexton said. Ebola also causes vomiting, loss of appetite, headache, abdominal pain and muscle aches.

Patients have reported nonproductive coughs and sore throats with the sensation of a lump in the throat. Some have developed eye infections, and some have seen their mouths become dark red in color. A rash may develop that later peels. A patient who is pregnant when she is infected is likely to miscarry.

Some patients struggle with a low platelet count. Bleeding, however, is not common.

## Effects

Sexton said the virus damages the tissue of the liver, adrenal glands and spleen. Even though the body at first does not create antigens, it does mount an inflammatory response. Cells that are damaged release chemicals that cause swelling, which helps insulate the tissues from the virus.

"When you develop an antigen response is really when you start to get better, if you're going to get better," Sexton said. "People who never develop an antigen response die."

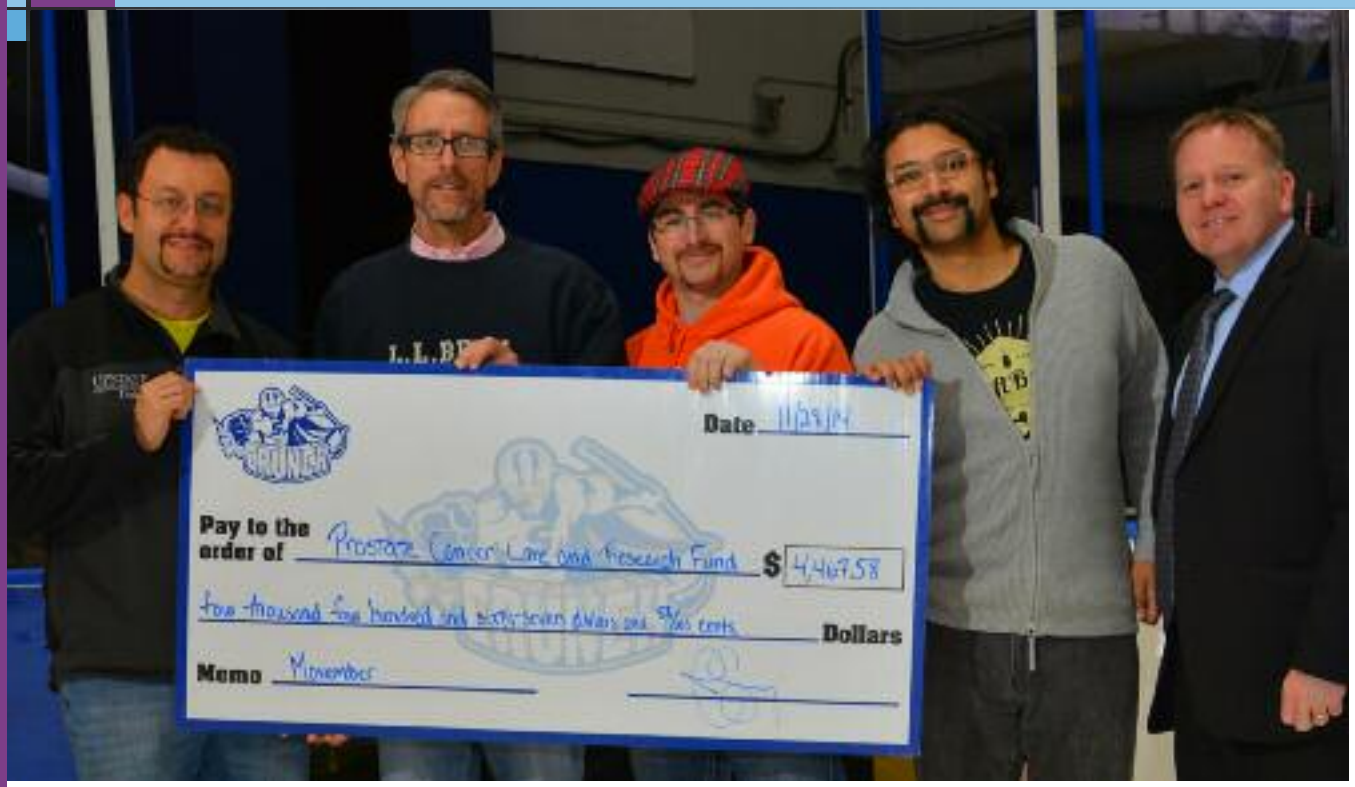
Improvement or death usually occurs between day 6 and day 16. People who die from Ebola suffer multiple organ failure and septic shock.

## Survival

People who survive Ebola face a lengthy convalescence. Weakness, muscle aches and fatigue are liable to linger, and weight regain can be difficult. Sexton said there may be hair loss and extensive sloughing of skin. Also, the virus may remain present in semen and breast milk for weeks or months.

People who survive Ebola likely develop an immunity to that strain of Ebola, Sexton said. "No one, as far as I know, has been exposed to the disease a second time, but because you now have an antibody response, you may not be able to get the disease again.

Sexton said experts believe "the antibody response is key. Once you develop that, you get over the disease," he said. "The big problem with the disease is you don't develop that for so long — until it's gotten so bad that it's caused all these other problems." ■




Upstate's prostate cancer team helped raise money for prostate cancer research at Upstate Medical University through a Movember Mustache Challenge involving the Syracuse Crunch hockey team. The men grew facial hair throughout the month of November, and fans voted by making online donations which totalled $4,467.58. Participating in the check presentation at the hockey game are, from left, Upstate's Gennady Bratslavsky, MD, Michael Lacombe, MD, Dmitriy Nikolovsky, MD, and Srinivas Vourganti, MD. Joining them is Jim Sarosy of the Syracuse Crunch.

# UPSTATE ROUND UP

More long-time smokers may seek screening for lung cancer now that the federal Medicare program has indicated it will pay for the test.

Upstate's **lung cancer screening program** began two years ago, with patients paying for the test out of pocket. The test consists of a low-dose computerized tomography scan designed to identify small tumors. Screening is designed for current or former heavy smokers who quit within the last 15 years, who are between 55 and 74 years old. Heavy smoking means a pack a day for 30 years, or two packs a day for 15 years.

A draft decision from Medicare in November said the annual screenings would be covered; the decision is expected to become final in February.

Call MD Direct to refer patients for screening at 315-464-4842.

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Upstate's **College of Nursing** used its largest contribution in history to create an endowed lectureship.

Fay Whitney, PhD, a national leader and advocate for advanced nursing practice, and her husband Roy, gave $50,000 to create The Whitney Lectureship Endowment for the College of Nursing.

The Nursing Alumni Association pledged to match the gift, which will enable the college to invite nationally recognized speakers to campus. "This will expose our students to important national trends that are essential to health care," says Joyce Griffin-Sobol, PhD, dean of the college.

The bachelor's and master's degree programs recently received a 10-year reaccreditation by the Commission on Collegiate Nursing Education's Board of Commissioners.

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Upstate University Hospital **nurse Shannon Tilbe** received an American Red Cross "Real Hero" award in December. Tilbe is credited with helping to save a young woman's life in May. She was driving home from a soccer match with her daughter when she stopped to help care for a woman whose motorcycle catapulted off the road and into a muddy, water-filled creek.

The **National Institutes of Health** awarded four grants of $1 million or more to researchers at Upstate in 2014, including Sijun Zhu, MD, PhD, Christopher Turner, PhD, Timothy Damron, MD, and David Pruyne, PhD.

Spencer M. Wallace Jr., who has been living with Type 1 diabetes for an astounding 81 years, donated several diabetes-related items that he has collected over his years of care to Upstate's **Joslin Diabetes Center** at a reception in November.

Wallace is the first recipient of the Joslin Diabetes Center's 80-year medal. He is part of a study at Joslin that is aimed to understand why certain people who have had Type 1 diabetes for 50 years or more do not develop many of the serious complications associated with the disease.

The donation of diabetes-related books and devices will be displayed at the center.

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Upstate received a 2014 Customer of the Year award from **New York State Industries for the Disabled, Inc.** The award recognizes Upstate for creating jobs for New Yorkers with disabilities through its partnership with NYSID and NYSID vendors that contract through New York's Preferred Source Program.

During 2014, Upstate has employed 181 individuals with disabilities through NYSID member agencies.

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One of Upstate's most influential couples, Carlyle "Jake" F. Jacobsen, PhD, and his wife, Ellen Townley Cook Jacobsen, MD, were honored for their work and support of Upstate Medical University with the dedication of Weiskotten Hall's first floor lobby as the **Carlyle and Ellen Cook Jacobsen** Foyer.

Carlyle was Upstate's first president from 1957 to 1965, and oversaw the construction of University Hospital. He married Ellen in 1958. She was the first woman resident in internal medicine at Upstate and the first woman faculty member of the College of Medicine. Carlyle died in 1974. Ellen retired in 1990 and died in 2013 at the age of 94. They are pictured with New York Governor Nelson Rockefeller and his wife, Happy, at Upstate University Hospital in 1965.

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A conference room was dedicated in October in the name of Nell Theresa Connor, who saved several of her coworkers from a deadly fire in Binghamton, at the **Occupational Health Clinical Center of the Southern Tier**. The center is affiliated with Upstate.

Thirty workers were killed in the 1913 fire at the Binghamton Clothing Company. Coming just two years after the devastating Triangle Shirtwaist Factory fire in Manhattan, the Binghamton fire aided in pressing New York officials to create the state's Workers Compensation system and advance fire-fighting capabilities.

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**Richard Aubry, MD,** established the RMB Aubry Motherhood Fund shortly before he died in a car accident in October. He retired from Upstate's obstetrics and gynecology department after 50 years of aiding public health efforts to improve maternal and infant mortality rates in Central New York. Contributions to the fund can be made through the Upstate Foundation at 315-464-4416.

Aubry also left a legacy gift for the department to endow a professorship, so that his life's work will carry on in perpetuity.

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A new publication for anyone touched by cancer is available for distribution in health and medical offices throughout Central New York. **Cancer Care magazine** is provided quarterly by the Upstate Cancer Center. Articles are designed to be educational and useful to patients.

Request copies by calling 315-464-4836 or emailing magazine@upstate.edu