

## Celebrating a distinguished new name: UC Gardner Neuroscience Institute



*James and Joan Gardner, namesakes of the newly named UC Gardner Neuroscience Institute*

The University of Cincinnati Neuroscience Institute entered a new era on June 21 when it became the University of Cincinnati Gardner Neuroscience Institute. The new name honors the James J. and Joan A. Gardner Family Foundation for its tremendous financial support of the institute, a leading treatment, research and teaching center for complex neurological and psychiatric conditions.

“The Gardner Family Foundation has been a vital partner for the institute over the years, and we are incredibly grateful for its generosity and commitment to our mission,” says Joseph Broderick, MD, director of the UC Gardner Neuroscience Institute. “It is a fitting tribute to the Gardner family for the amazing support they have shown our physicians, researchers, patients, faculty, staff and students.”

*Continued on page 2*

## Another reason to ‘friend’ your grandmother

### Doctor used Facebook post to determine time of stroke and start tPA treatment

In treating a stroke, time is brain. Because treatment must be administered within 3 to 4 ½ hours to be effective, one of the first things a doctor or EMT must do is determine the moment when the stroke began.

For Marlene Grimes, 82, playing card games and replying to Facebook posts on the computer may have saved her life by establishing the time when she was last healthy and coherent.

Grimes was using her computer at her Milford, Ohio, home when she tried to get up but couldn’t move. While Grimes did not know exactly what was happening to her, her ability to call 911 proved critical.

“Everything you do for stroke care is time, time, time,” says Julian Macedo, MD, neurocritical care and emergency medicine physician with the UC Comprehensive Stroke Center. “So you have a stopwatch going in your mind – sometimes quite literally counting minutes – when you’re talking about getting the best outcome for treating acute stroke.”

“When a stroke occurs, we want to work to get blood flow back to the brain as soon as possible. A blockage of blood flow to the brain can result in stroke symptoms, like difficulty talking, paralysis, sensation loss, imbalance and vision trouble, some of which can be extremely debilitating.”

*Continued on page 2*



*A time-stamped Facebook post helped save the life of Marlene Grimes.*

## UC Gardner Neuroscience Institute

*Continued from page 1*

Since 1994 the Gardner Family Foundation has contributed more than \$20 million to the UC Gardner Neuroscience Institute. Most recently, it pledged \$14 million to help fund a new, state-of-the-art facility to enhance treatment and research efforts for chronic and progressive neurologic and psychiatric conditions and disorders. The facility will be built and operated by UC Health. The gift helped kick off a \$54.5 million fundraising campaign for the institute, which aims to create the new facility, enhance research and patient care efforts, aid in recruitment and retention, and expand programming.

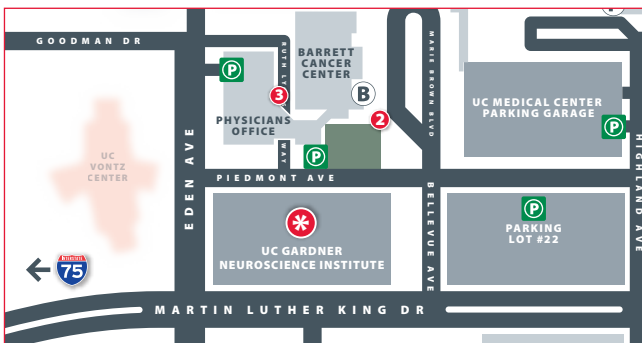
"The Gardner Family Foundation provided funding for the UC Gardner Neuroscience Institute's new headquarters at just the right time," says Richard Lofgren, MD, President and CEO of UC Health. "The foundation's generous gift allowed us to move forward with a facility that is patient-focused, research-driven and powered by the latest medical technology. I am proud we are able to recognize the family through the naming of the institute."

In 2007 the Gardner Family Foundation gave \$5.5 million to create the James J. and Joan A. Gardner Family Center for Parkinson's Disease and Movement Disorders, one of 12 centers of excellence at the institute. The gift was inspired by the late James Gardner's wife, Joan, who has Parkinson's disease.

To date, more than \$33 million has been raised through the UC Gardner Neuroscience Institute's major fundraising campaign – more than half of the stated fundraising goal.

The UC Gardner Neuroscience Institute is a partnership between the UC College of Medicine and UC Health. It includes more than 125 UC faculty members from 15 clinical specialties working collaboratively. The institute runs more than 100 active clinical trials at any given time and has received more than \$120 million in grant funding over the past five years.

The new research and outpatient facility for people with neurologic and psychiatric diseases will complement University of Cincinnati's signature campus architecture. It will be centrally located on the UC Academic Health Center Campus on Piedmont Avenue, which runs parallel to Martin Luther King Drive.



## Another reason to 'friend' your grandmother

*Continued from page 1*

Macedo received a call from Bethesda North around 5:30 p.m. that evening. "When I got the call, she (Grimes) had left-sided weakness and difficulty talking. They were sending her to get a CAT scan. A big problem, in her particular case, is she lives on her own and the last time anyone had seen her well was at noon. Not knowing when this occurred, she could be already out of the window for treatment."

Thankfully, there was a Facebook post.

Grimes's granddaughter, waiting for family members to arrive at the hospital, had begun scrolling through Facebook to pass the time and spotted the comment posted by her grandmother – "very cute idea" – at 3:49 p.m. "Immediately I got chills," April Gorman recalls. "That felt weird to me, knowing she was on her way to the hospital, and here I am seeing her Facebook post from less than an hour ago."

Gorman promptly shared a screenshot of the post with the emergency room staff.



*I found this completely intriguing—the fact that I was going to be able to treat someone based on a Facebook post.*

— Julian Macedo, MD

"She was well enough to type a comment in this Facebook post, suggesting that she was normal, and we had evidence. Once I knew this, I felt confident about treatment. Is it the perfect way of knowing the last known wellness of a patient? No, seeing someone actually well is preferred, but it's not always feasible," says Macedo.

The medical staff began treatment with the clot-busting drug tPA immediately (Tissue plasminogen activator, or tPA, is the only FDA-approved treatment for stroke caused by a blood clot. Stroke specialists at UC Health helped develop the drug in the 1980s.). Then Grimes was flown by Air Care to UC Medical Center for clot-removal treatment by Todd Abruzzo, MD, an interventional neuroradiologist.

Grimes stayed overnight and then returned home. Back to her thriving, independent lifestyle, she says her determination and positive attitude help keep her active. She admits that she doesn't fully understand Facebook, but she enjoys reading about and seeing photos of her family.

Macedo says it certainly made the difference in Grimes's care. "As we are getting more and more married to technology, I think we'll be able to find interesting new ways of recognizing time-dependent change in human beings, and we can be early adopters of incorporating this information into our decisions."

# Brain Briefs

**Brain Tumor Center:** Funded \$100,000 in Molecular Therapeutics Program pilot grants for the research and development of improved therapies for the most common childhood brain cancer and for metastasis of the most common adult kidney cancer to the brain.

**Comprehensive Stroke Center:** For the third straight year, received the American Heart Association/American Stroke Association's Get With The Guidelines® Stroke Gold Quality Achievement Award with Target: StrokeSM Honor Roll Elite.

**Epilepsy Center:** For the 12th straight year, designated a Level 4 Center—the highest level—by the National Association of Epilepsy Centers.

**Gardner Family Center for Parkinson's Disease and Movement Disorders:** Welcomed Aristide Merola, MD, PhD,



Lilia Lovera, MD

to its team. Dr. Merola comes to UC Health from the University of Torino in Italy, and will spend the majority of his time focusing on Parkinson's disease and movement disorder research.

The center also welcomed Lilia Lovera, MD, to its team following her two-year fellowship training at UC.

**Headache & Facial Pain Center:** Elevated from a program to a center within the institute; celebrated the opening at West Chester Hospital of the region's only outpatient dihydroergotamine (DHE) infusion center for treatment of severe migraine attacks.



Vincent Martin, MD, leads the Headache and Facial Pain Center.

**Memory Disorders Center:** Welcomed geriatric psychiatrist Stephen Wilkes, MD, and nurse coordinator Margaret Cone, RN, MSN, to the growing team.

**Mood Disorders Center:** Began a study of transcranial magnetic stimulation for treatment-resistant depression in adolescents and young adults aged 12 to 21.

**Neurobiology Research Center:** Welcomed neuroimmunologist Eric Wohleb, PhD, from Yale University to the team; funded seven pilot projects in cooperation with the UC College of Medicine; and renewed a \$900,000 pre-doctoral T32 training grant from the National Institute of Neurological Disease and Stroke.

**Neuromuscular Center:** Hosted Merit Cudkowicz, MD, MSc, chief of neurology at Harvard Medical School and a renowned ALS researcher, who delivered the 31st Charles Aring Lecture. Cudkowicz said researchers have identified 35 genes that are involved in the rare condition.



Laura Sams, MD, Merit Cudkowicz, MD, Brett Kissela, MD, and Robert Neel, MD attended the 31st Charles Aring Lecture.

**Neurosensory Disorders Center:** Raised awareness about the rise in tinnitus (ringing or buzzing in the ears) that is occurring in adolescents and young adults because of excessive exposure to loud noise.

**Neurotrauma Center:** Earned a \$4.7 million grant from the Psychological Health/Traumatic Brain Injury Research Program at the U.S. Department of Defense to use new monitoring techniques in the study of the damaging, seizure-like waves that spread slowly through the brain following a traumatic injury.

**Waddell Center for Multiple Sclerosis:** Announced that in 2017 it will begin offering a prestigious MS fellowship to neurologists who wish to sub-specialize in MS care following their residencies.

# Uncontrolled seizures?

## Epilepsy Center to offer two new surgical treatments



George Mandybur, MD

The UC Epilepsy Center is adopting two surgical advances to help people whose seizures are not controlled by medication. The Epilepsy Center will be the only center in the Tristate that offers the NeuroPace® RNS® System as well as minimally invasive laser surgery involving MRI-guided Visualase technology.

The NeuroPace® device reduces partial-onset seizures by detecting abnormal electrical activity in the brain and then delivering small bursts of electrical stimulation. The NeuroPace® RNS® System aims to normalize brain activity before a seizure occurs. Electrical stimulation is delivered through electrodes that are placed by a neurosurgeon near the location (or locations) where seizures originate. The patient is unaware of the stimulation when it occurs.

“NeuroPace® works on the same principles as the automatic cardiac defibrillator,” says George Mandybur, MD, a neurosurgeon with the Epilepsy Center. “When the heart goes into a bad rhythm, the defibrillator shocks the heart back into a good rhythm. When the NeuroPace® senses a bad electrical rhythm and the beginning of a seizure, it delivers a shock that should stop the seizure.”

Meanwhile, minimally invasive laser surgery offers significant benefits to patients who require surgery for temporal lobe seizures that cannot be controlled with medication.

The surgical team uses a laser to heat and destroy a targeted area of brain tissue that is causing seizures. Rather than opening the skull in a craniotomy and removing a portion of the brain – a procedure called a temporal lobectomy – the surgeon creates a small hole with a twist drill, inserts the laser and then burns the targeted area. Surrounding healthy tissue is spared.



*This treatment will significantly cut down on the number of cases that involve a craniotomy and removal of a portion of the temporal lobe.*

— George Mandybur, MD

“Even though this treatment will be somewhat less effective than open surgery in reducing seizures, the risk of complications will be greatly reduced. It’s an important tradeoff,” Mandybur says.

Importantly, laser surgery does not prevent surgeons from performing a more invasive temporal lobectomy at a later date if necessary.

## Rare nerve biopsy now available at Neuromuscular Center

In the past, residents of the Cincinnati region who needed a delicate type of nerve biopsy had to travel to institutions such as the Mayo Clinic or Johns Hopkins University. That test is now available at UC Medical Center. Hani Kushlaf, MD, a UC Health neurologist and a member of the UC Neuromuscular Center, says only a few elite academic medical centers are capable of performing the test, known as a fascicular sciatic nerve biopsy.

Kushlaf has teamed up with David Megee, MD, a UC Health plastic surgeon with microsurgical skills and special training in peripheral nerve surgery, to offer the outpatient diagnostic test to patients who have symptoms of a nerve disorder in a major nerve. “This is new at UC Health,” Kushlaf says. “It has not been done here before this year. It’s important for hospitals and physicians in our region to know that we now have this diagnostic capability.”

The fascicular nerve biopsy is used to diagnose conditions such as nerve vasculitis, neurolymphomatosis, sarcoidosis, and benign or malignant nerve tumors.



Hani Kushlaf, MD, and David Megee, MD, are now providing an advanced diagnostic test for neuromuscular patients.

## Eyeing a future of personalized medicine in aging

Researchers at the UC Gardner Neuroscience Institute have reached a sobering conclusion about neurodegenerative disease: the more they know, the more they need to know.

It turns out that Parkinson's disease, Alzheimer's disease and related diseases have many variations, and a treatment that works for one may not work for another. As a result, specialists are moving away from one-size-fits-all therapies in favor of a new era of personalized medicine – the matching of drugs to molecular subtypes of disease.

The new approach is not without challenges. It will require an understanding of disease subtypes and the availability of therapies that target specific gene mutations.

"There are many more pathologies in cognitive decline than we once realized," says Rhonna Shatz, DO, medical director of the UC Memory Disorders Center and a UC Health neurologist. "We think that plaques and tangles are the final common pathway in Alzheimer's. But you might get there through a pathway that causes excessive inflammation, a pathway that involves the inability to recycle or clear amyloid, or a pathway that involves the inability to produce new cells."

Shatz is working closely with Alberto Espay, MD, MSc, medical director of the James J. and Joan A. Gardner Center for Parkinson's Disease and Movement Disorders. Espay says that after a global investment of \$23 billion in new therapies for Parkinson's disease, researchers have learned that one therapy can't possibly cure all. "It's a folly to have assumed that Parkinson's was a single disease," says Espay, a UC Health neurologist and former chair of the Movement Disorders Section of the American Academy of Neurology. "There may be 20 variations of Parkinson's."

An effective study that could lead to a new understanding of how aging leads to different diseases and their subtypes will cost millions, Espay says. "We will need to follow a large number

of individuals – both healthy and sick – so we can see what biological signals correspond with what disease subtype and with absence of disease. We need to develop true phenotypes based on patterns of cognitive, motor, autonomic and sleep issues and how they differ at the molecular and biological levels."

Espay likens the new approach to the field of oncology, which evolved over a period of decades from a focus on "the cure for cancer" to an understanding of cancer's profound complexity. No single cure for cancer could be found, because there was a vast array of cancer types and subtypes, with different molecular profiles, different mutations, and different vulnerabilities. A therapy that successfully treated one type of breast cancer, for example, might be completely ineffective against another type. This knowledge ushered in the age of precision medicine – the matching of drugs to disease subtypes.

"For neurodegenerative diseases, we are at the tipping point that cancer was in the 70s," Espay says. "We are moving from an unproductive, single-diseases model for neuroprotection to an era of precision medicine, where molecularly defined subtypes of Parkinson's will be slowed or potentially reversed, perhaps even with some of the drugs we had given up on. Neuroprotection in Parkinson's will happen with smaller subtypes, one at a time, as has been happening in cancer treatment."

Shatz hopes that the Memory Disorders Center will soon be able to learn more about a subset of people with genetic risk factors for a type of Alzheimer's that causes excessive inflammation. "We're not exactly sure whether the immune system is hyperactive or whether it is somehow compromised," she says. "All we know is there is a subgroup of people who have a lot more inflammatory factors than others. They are the ones we call frontal-executive or young-onset. If we understood this pathway, we could tailor a more personalized approach for treatment."



*It's a folly to have assumed that Parkinson's was a single disease; there may be 20 variations of Parkinson's.*

— Alberto Espay, MD, MSc

## Andy's story: A rare case of NORSE



Andy Reesey enjoys a visit with his parents, Marie and Dick, and his dog, Betty.

Ten months after slipping into a coma and hanging on through continuous seizures and prolonged anesthesia, Andy Reesey woke up.

With the help of specialists in epilepsy and neurocritical care at the UC Gardner Neuroscience Institute, the 38-year-old veterinary technician survived a rare syndrome called NORSE – new-onset refractory status epilepticus.

Today, 19 months after his ordeal began, Reesey is continuing his recovery at a Cincinnati retirement community and preparing to move to his parents' home. "Cognitively, he's back," says Dick Reesey, Andy's father.

"Where we are is a good thing. But we don't know the end of the story. Andy's on God's time, not a clock on the wall or a watch on your wrist."

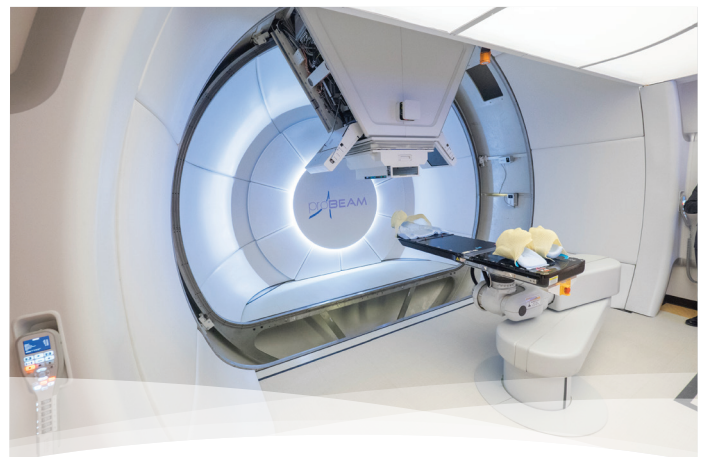
Andy's family is grateful for the care Andy received from the doctors, nurses, therapists and technicians at UC Health. "It was a tremendous experience for us," Dick Reesey says. "It makes you stronger, that's for sure. The doctors and nurses in the NSICU became like family. We were there a long time. Everybody at Drake, everybody at UC, has been great."

## Proton therapy: the newest weapon against tumors

A new tool to treat cancer – including cancer of the brain and spine – opened in August at the Cincinnati Children's/UC Health Proton Therapy Center in Liberty Township. The \$120 million center, which will treat children and adults, can deliver radiation to a tumor with remarkable precision.

The center will provide one of the most technologically advanced weapons against cancer in existence, says Radiation Oncologist John Breneman, MD, associate medical director of the UC Brain Tumor Center. "The advantage of proton therapy is its ability to deliver a precisely shaped beam of radiation to a precisely defined depth. The protons' energy, rather than continuing through a tumor and causing damage to healthy cells that lie beyond the tumor, is deposited within a limited distance. This makes proton therapy the optimal choice for tumors that are oddly shaped or that are located in fragile areas in the head and spine, such as the brainstem, the spinal cord, the eyes or the ears."

At present, the closest proton therapy sites to Greater Cincinnati are in Cleveland, Chicago and Knoxville, Tennessee. The Cincinnati Children's/UC Health Proton Therapy Center will also house the only space fully dedicated to basic proton research in the world.



Patients have a new cancer treatment option in Cincinnati: proton therapy. It provides remarkable precision not possible through other treatments.

## Dave Parker lends star status to Sunflower



Reds great Dave Parker was the grand marshal at the Cintas Sunflower Rev It Up for Parkinson's.

Former Major League Baseball star Dave Parker, shown with his wife, served as Grand Marshal for the Cintas Sunflower Rev It Up for Parkinson's event on Sunday, Sept. 11, at Sawyer Point Park in downtown Cincinnati. The event benefited the James J. and Joan A. Gardner Family Center for Parkinson's Disease and Movement Disorders.

Parker, a Cincinnati Reds Hall of Famer and Cincinnati resident, announced in 2013 that he had been diagnosed with Parkinson's disease.

## Remembering Tom Mueller

The UC Gardner Neuroscience Institute mourns the loss of Tom Mueller, a member of the Gardner family, who passed away May 4 at the age of 62. "Tom was a wonderful person and a great husband and father," reflects Joe Broderick, MD, director of the UC Gardner Neuroscience Institute. "He also played a major role in supporting the Gardner Center for Parkinson's Disease and Movement Disorders. He will be missed by us all, and particularly by his loving family."



From left, at the 2015 Sunflower Symposium: Cara Jacob, MD, Kim Seroogy, PhD, Andrew Duker, MD, George Mandybur, MD, Linda Mueller, Victory Award honoree Tom Mueller, and Maureen Gartner, NP-C.

## Community Support



Rekha Chaudhary, MD, reminds everyone to bid high at Brain Tumor Center's annual wine tasting event at the Cincinnati Museum Center.



From left: John Breneman, MD, Therese Middendorf, Rachel Siemer-Alexander and Teri Pagan at the wine tasting.

### SAVE THE DATE IN 2016!

10/23 Walk Ahead for a Brain Tumor Cure

11/19 Strategies for Managing Epilepsy – Patient Symposium

Visit [UCHealth.com/neuro/events](http://UCHealth.com/neuro/events)

## A caregiver's best advice

Over the last three decades, Sandy and Jerry Wuest have become two of the region's best-known advocates for people with Parkinson's disease. As Sandy continues to care for Jerry, she offers these tips for those who care for a loved one with neurological disease.

- *Have a support system and accept help when it's offered. We have neighbors come one day a week, from 1:30 to 4. During that time I run errands. I so look forward to those afternoons.*
- *Don't be afraid to ask family members to help. At the beginning I didn't want to ask my three daughters; they have their own families and work full-time. But now I can ask them, and they have been a blessing. They take turns coming out each evening and do most of the work when they're here.*
- *Support groups are wonderful. Everyone should go to a support group.*
- *I've learned so much from the aides and nurses who have come to our home. Therapists and nurses can teach you how to perform transfers and lifts so that you don't hurt yourself.*

- *It's normal to feel angry. During the time period when Jerry was walking around and falling, I never knew what would happen next. I would get so angry when he got up and fell.*
- *The hardest thing about being a caregiver is isolation. When people ask whether they can come to visit, even if it's for a short time, always encourage them to do so.*



*Jerry Wuest, center, at home last month with researcher Kim Seroogy, PhD, left, and nurse practitioner Maureen Gartner, MSN, NP-C. Photo by Sandy Wuest.*

### Editorial Board:

Cindy Starr, MSJ, Editor  
Joseph Broderick, MD  
Kim Burdett, MS  
Lori Uphaus, MHA

### Contacts:

To schedule an appointment with a physician, call **(513) 475-8730**.

To reach the institute, call **(866) 941-UCNI**

**UCHealth.com/neuro**



University of Cincinnati Medical Center  
UC Gardner Neuroscience Institute  
234 Goodman St.  
Cincinnati OH 45219