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Audrey Ronis-Tobin, MBA  
Lori Uphaus, MHA

**Contacts:**

To schedule an appointment with a physician, call **(513) 475-8730**.  
To reach the Neuroscience Institute, call **(513) 584-2214** or **(866) 941-UCNI**.  
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**TRANSITIONS/APPOINTMENTS**

## UC Neuroscience Institute comes to Florence location

Specialists from the UC Brain Tumor Center, the Headache and Facial Pain Program, and general neurology are now seeing patients at the new UC Health Physician Office in Florence, Kentucky.

Patients can make an appointment to see:

- Richard Curry, MD (Brain Tumor Center – neuro-oncology)
- Andrew Massey, MD (General Neurology)
- Luke Pater, MD (Brain Tumor Center – radiation oncology).
- Reena Shah, MD (Headache & Facial Pain Program and General Neurology)
- Ronald Warnick, MD (Brain Tumor Center – neurosurgery)

**To make a neurology appointment, call (513) 475-8730. To make a Brain Tumor Center appointment, call (513) 475-8500.**



## Cincinnati's brain gain

The UC Neuroscience Institute has welcomed 17 new faculty members during the 2014-2015 academic year. These highly trained physicians will provide advanced specialty care to patients treated by the Institute's 14 centers and programs.

**Comprehensive Stroke Center:** Rahul Karamchandani, MD

**Epilepsy Center:** Heather McKee, MD, and Brian Moseley, MD

**Gardner Family Center for Parkinson's Disease & Movement Disorders:** Cara Jacob, MD

**General Neurology:** Andrew Massey, MD, and Walter McFarland, MD

**General Neurology (inpatient):** Bakkiam Subbiah, MD

**Memory Disorders Center:** Rhonna Shatz, DO, Medical Director

**Neurosensory Disorders Center:** Rebecca Howell, MD

**Mood Disorders Center:** Sheena Horning, PhD, Rodrigo Patino, MD, Debra B. Schroeck, MS, PA-C

**Neurocritical Care Program:** Brandon Foreman, MD, Christopher Zammit, MD

**Physical Medicine & Rehabilitation:** Angela Stillwagon, DO, Michael Watts, MD

**Waddell Center for Multiple Sclerosis:** Allen Desena, MD

## Gardner Family commits \$14M

The UC Neuroscience Institute celebrated its 15th anniversary with a transformational, \$14 million commitment from the James J. and Joan A. Gardner Family Foundation. Peggy Gardner Johns, the daughter of Joan Gardner and her late husband, James, announced the gift before an audience of donors, physicians and researchers at the Queen City Club. "As a result of long-standing friendships and the superb medical care our mother has received, we are honored and privileged to announce that we are making a significant impact on the future of the UC Neuroscience Institute," Mrs. Johns said. "We are providing a commitment of \$14 million to help provide the Institute with a new home."

(continued on page 7)



From left, members of the extended Gardner Family: Peggy Gardner Johns, Gary Johns, Lori Gardner Sommer, Laura Mueller, Adam Mueller, Keri Young and Eric Mueller.

## Dr. Rhonna Shatz: Building a New Approach to Brain Health

When you arrive at your annual physical, you can expect your doctor to check your blood pressure, weight, heartbeat and cholesterol. In the future, you are likely to have your memory tested, too.



Rhonna Shatz, DO

This is the vision of Rhonna Shatz, DO, the new Medical Director and the Sandy and Bob Heimann Chair in Research and Education of Alzheimer's Disease at the UC Memory Disorders Center. She wants to create a new approach to brain health for cognitive specialists, primary care providers and the citizens of Greater Cincinnati and Northern Kentucky.

A new approach is needed, Dr. Shatz says, because cognitive decline is a complex, lifelong process. It is not hereditary in most people, and three or more decades may pass before a single symptom emerges. And while no single pill will address all types of dementia, individually tailored strategies may help vast numbers of people delay or avoid dementias, including Alzheimer's disease.

"We need to build a different infrastructure and model of how we approach brain health," Dr. Shatz says. "We want to incorporate brain health as an annual focus of primary care from the get-go, not after you're having symptoms."

(continued on page 6)

### CENTERS & PROGRAMS

- Brain Tumor Center
- Comprehensive Stroke Center
- Epilepsy Center
- Gardner Family Center for Parkinson's Disease and Movement Disorders
- Memory Disorders Center
- Mood Disorders Center
- Neurobiology Research Center
- Neuromuscular Center
- Neurosensory Disorders Center
- Neurotrauma Center
- Waddell Center for Multiple Sclerosis
- Headache and Facial Pain Program
- Neurocritical Care Program
- Neurorestorative Program



## Clot-retrieval devices for large strokes

New research has shown the value of advanced clot-retrieval devices used by specialists at the UC Comprehensive Stroke Center in the treatment of patients who suffer life-threatening strokes in large blood vessels.

Four studies, including the landmark Dutch study known as MR CLEAN, reported that patients whose clots were extracted with an endovascular (in-the-artery) device had better outcomes than patients who were treated with medication alone. The study results were welcomed by endovascular specialists Andrew Ringer, MD, a neurosurgeon, and Todd Abruzzo, MD, an interventional neuro-radiologist. "This is the game changer we've been waiting for," says Dr. Abruzzo. "It's what we have been trying to prove for years in Cincinnati."

Whereas previous research had shown no benefit to endovascular treatment of stroke patients, the new studies involved a focus on timely intervention and a newer device, the Solitaire™, developed by Covidien, which looks like a stent but remains attached to a wire. The stent is delivered up from a small incision in the groin through a catheter and deployed inside the blood clot. With the clot trapped inside the device, the physician pulls out the wire, retracting the wire, stent, and clot back down through the body and out the incision in the groin.

Even better news is likely to follow, as "stentriever" techniques continue to be displaced by even more effective technologies. "Our stroke team is highly experienced with the modern technologies used in the Dutch study and is using even more advanced methods today," Dr. Abruzzo says.

## Brain stimulation for partial-onset seizures

The UC Epilepsy Center is offering a new therapy for people whose partial-onset seizures are not controlled by medication and who are not candidates for traditional surgery. The NeuroPace® RNS® System, recently approved by the U.S. Food and Drug Administration, aims to normalize brain activity before a seizure occurs. It works by detecting abnormal electrical activity in the brain and then delivering small bursts of electrical stimulation.

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. An epilepsy specialist can program the detection and stimulation parameters of the implanted RNS device non-invasively to customize therapy for each individual.

Michael Privitera, MD, Medical Director of the UC Epilepsy Center, served on the FDA committee that reviewed the device.



## Auditory brainstem implant surgery

If a siren sounded, would a person who is deaf still be able to "hear" the sound?

That is a challenge being addressed by Ravi N. Samy, MD, Director of the Adult Cochlear Implant Program at the UC Neurosensory Disorders Center, a center devoted to people who have diseases and disorders related to hearing, swallowing, voice, taste and smell. Dr. Samy and a multidisciplinary team have been working with a new device – an auditory brainstem implant – to enable people who have lost hearing in both ears to still be able to process certain types of noise. The device bypasses structures within the ear and works by stimulating the brainstem, which sends a message to the brain that a noise has been "heard."

For more than 20 years, UC Health's neurosensory team has provided cochlear implants to patients who have become deaf for reasons related to genetic defects, infection, medication, age and noise. Candidates for cochlear implants have suffered damage to the hair cells in the cochlea but have a healthy cochlear nerve. For the very small number of patients whose cochlear nerves are damaged, however, something else is needed. The most promising solution available is the auditory brainstem implant.

"Performing auditory brainstem implant surgery is very challenging, because the implant is connected directly to the brainstem," Dr. Samy says. "Because brain surgery is involved, the hospital stay can be up to three days, with the first night in the neuroscience intensive care unit."

The auditory brainstem implant does not provide patients with normal hearing. Dr. Samy hopes, however, that "with day-to-day advancements and lip-reading skills, we can give patients an improved quality of life."

## Gardner Family gift *(continued from page 1)*



Peggy Johns

"We envision this home not merely as a facility," Mrs. Johns continued. "Rather, we envision a vibrant space that is alive with comprehensive care, multi-disciplinary clinics, and the kind of animated brain-storming that leads to revolutionary new treatments."

Mrs. Johns' remarks were met with gasps, tears and a standing ovation.

Joseph Broderick, MD, Director of the UC Neuroscience Institute, shared the history of the Institute's relationship

with the Gardner family, which began when Joan Gardner came under the care of Alberto Espay, MD, a specialist at what was then known as the Parkinson's Disease and Movement Disorders Center.

"Alberto's care made a major difference for her," Dr. Broderick recalled. "Joan's husband and the rest of the family became more interested in how they could accelerate research and better treatment for patients with Parkinson's disease. This led to several gifts: a \$500,000 gift for a nurse navigator and a

## A heartfelt thank you

The physicians, researchers, managers and associates of the UC Neuroscience Institute extend a heartfelt "thank you" to all of our friends who support our tripartite mission. With your help we continue to build upon our efforts to provide the best available treatments and family-centered care, to aggressively pursue new therapies and potential cures for neurological disease, and to educate future physicians and the public. The UC Neuroscience Institute gratefully acknowledges these recent major gifts:



- A \$3 million gift from the Anna and Harold W. Huffman Foundation created an endowed chair and dedicated research program at the UC Brain Tumor Center to drive new treatments for glioblastoma, the most aggressive type of brain cancer. Celebrating the gift: Ronald Warnick, MD; The Reverend Dr. Larry Paul "LP" Jones, a Huffman Foundation Trustee who is battling glioblastoma; The Reverend Dr. Nancy Turner Jones, Huffman Foundation President; and David Plas, PhD, the first chair holder.

\$5 million gift over five years to establish in 2008 the James J. and Joan A. Gardner Family Center for Parkinson's Disease and Movement Disorders."

When the family's five-year commitment came to a close, Mrs. Johns said, they found themselves at a crossroads. "After a 10-year partnership with the UC Neuroscience Institute – and with the Parkinson's center in particular — would we go forward in the area of Parkinson's? Would we switch paths? Or would we veer onto a new, wider, multi-lane highway that led to broad-based neuroscience eminence in Cincinnati?"

After months of meetings, brainstorming sessions and visits to other nationally recognized centers, the family approached a decision. Instrumental in the process was the Gardner Family Foundation Sub-Committee, which includes Tom Mueller, Adam Mueller, Eric Mueller, Gary Johns and Kyle Johns. The family's decision resulted in the largest gift ever made to the UC Neuroscience Institute, and one of the largest in the history of the University of Cincinnati. "Tonight we come another giant step closer to a new, higher benchmark of excellence – a transformation of the entire Neuroscience Institute and its 11 centers into a hallmark of integrated patient care, research and community partnership," Dr. Broderick said.

- The Marge and Charles J. Schott Foundation endowed the Schott Chair for Stroke in Emergency Medicine.
- The 2014 Walk Ahead for a Brain Tumor Cure, co-chaired by Brian Wiles and his brother, Joe Wiles, attracted more than 3,200 participants and raised more than \$300,000. The 5-year-old walk has now raised more than \$1 million for education and research at the UC Brain Tumor Center
- The Sunflower Revolution, presented by Cintas and co-chaired by Kathy Krumme, Eric Mueller and Sarah Krumme Stahr, raised more than \$136,000 for research and education at the Gardner Center.
- Harry "Tim" Brown honored Linda Link Brown, his wife and soul mate, who passed away from amyotrophic lateral sclerosis (ALS) last fall at the age of 64, with a \$100,000 gift to the ALS Fund at the UC Neuromuscular Center. The funds will be used to support the UC Health ALS Clinic and the social and therapeutic services that are vital to families who are coping with ALS.
- The Parkinson's Disease Support Network of Ohio, Kentucky & Indiana donated \$45,000 in proceeds from the annual Jerry Wuest-Pete Hershberger Dinner Gala & Golf Classic to the Gardner Family Center, bringing PDSNOKI's total giving since 2004 to \$422,000.
- The Forget-Me-Not Gala, chaired by Erica Camp and Meg Cone, netted \$42,000 for the UC Memory Disorders Center.
- The Shemenski Foundation made a donation of \$30,000 to the UC Brain Tumor Center for pilot grants that support basic research.



Dr. Rhonna Shatz *(continued from page 1)*

Dr. Shatz (rhymes with hats) is one of 17 new faculty members at the UC Neuroscience Institute. She comes to Cincinnati having built a comprehensive memory disorders center at Detroit's Henry Ford Hospital, where she served as Director of Behavioral Neurology and the Clayton Alandt Chair.

Dr. Shatz is the first physician in Cincinnati to use a new protocol known as the National Institutes of Health Toolbox. "The NIH Toolbox is a cognitive test meant to elevate the way doctors evaluate cognition," Dr. Shatz explains. "We want to pick up the very earliest changes, and the Toolbox is refined for very, very early, non-memory-related changes – the things that happen before function is affected."

Cognition, like cancer, involves multiple pathologies. Although family history is important, it is not destiny. Cognition is also impacted by medical disorders such as high blood pressure, obesity and lack of exercise, as well as by psychological issues such as anxiety and depression. The most accurate way to evaluate whether a person's cognition has changed, Dr. Shatz asserts, is to compare individuals to themselves from year to year.

"If we can follow you and determine that a change occurred between Point A and Point C, we can take a look at what that change is," she says. "A change doesn't mean inevitable decline. It means something happened. So let's find out what it is. Let's intervene."

During the coming year Dr. Shatz will establish her clinic with the new model, establishing baseline cognitive profiles of her patients. She will begin to acquire information about how the model impacts families. She will work with the Greater Cincinnati Chapter of the Alzheimer's Association to determine which interventions are working and which are not. And she will work to determine the Toolbox's effectiveness in differentiating among the various types of dementias, because what looks like Alzheimer's isn't always Alzheimer's. "This may be why clinical trials have failed – because we include people who didn't even have the disease," she says.

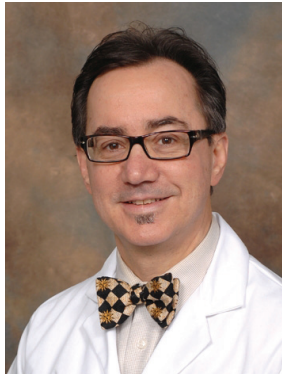
With support from primary care physicians, the new infrastructure will help set the stage for clinical trials involving interventions aimed at preventing dementia, slowing progression and, in cases where dementia has taken hold, maximizing quality of life.

Spreading the word through primary care physicians, health clinics and public symposia will be among Dr. Shatz's most important first steps in building a robust Memory Disorders Center for Greater Cincinnati-Northern Kentucky.



For Assessment of Neurological and Behavioral Function<sup>SM</sup>

## Study of antiepileptic drugs finds minimal differences



Michael Privitera, MD

A major study funded by the U.S. Food and Drug Administration has good news for people who take antiepileptic medications: A rigorous comparison of two generic equivalents of lamotrigine (marketed by GlaxoSmithKline as Lamictal) found minimal differences between them.

This was true even though the drugs had markedly different bioequivalence. The FDA requires that a generic must have 80 percent to 125 percent bioequivalence of the original

brand name drug, and the lamotrigine generics studied involved one at the low end and one at the high end. Michael Privitera, MD, Director of the UC Epilepsy Center and First Vice President of the American Epilepsy Society, presented the research at the society's annual meeting in December.

The generic equivalents study was performed, Dr. Privitera says, because "some physicians and patients perceive that generic antiepileptic drugs are not always equivalent to brand products."

In the FDA's \$2.6 million study, participants switched drugs twice over four test periods. "None of the study participants had any serious adverse events or loss of seizure control after crossover between generic products," Dr. Privitera says.

### SAVE THE DATE!

- 6/20** Fear and Concussions: Training to Stop It
- 7/17** Putting for Parkinson's
- 8/2-8/3** Jerry Wuest /Pete Hershberger Dinner & Golf Classic
- 9/12** The effects of Cancer on Memory and Thinking
- 9/12** Sunflower Revolution
- 9/25** Forget-Me-Not Gala
- 10/24** Midwest Regional Brain Tumor Conference
- 10/25** Walk Ahead for a Brain Tumor Cure
- 11/21** Epilepsy Symposium

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## As a young adventurer heals, he keeps a doctor's legacy alive

Jim Harris, an accomplished writer and photographer, was preparing for a month-long, 350-mile expedition across Patagonia in southern Chile, when calamity struck. That evening, as he and his companions flew the wind kites that would soon be pulling them across the ice cap, a sudden gust lifted Jim three to four feet off the ground. He was moving at a speed of 20 to 30 miles per hour when he crashed against the earth, suffering spinal injuries that – temporarily – paralyzed him from the waist down.

With advocacy from his parents, Jim was evacuated and transported 6,400 miles to the University of Cincinnati Medical Center, and the UC Neuroscience Institute, for surgery. Jordan Bonomo, MD, a neurocritical care specialist, oversaw his initial care. On December 1, his 33rd birthday, Jim underwent complex spine surgery led by the late Charles Kuntz, IV, MD, a neurosurgeon and Director of Spinal Trauma at the UC Neuroscience Institute. His surgery a success, Jim was later moved to the Daniel Drake Center for Post-Acute Care.



Jim Harris at UC Medical Center

Jim, whose continuing rehabilitation in Denver focuses on standing and walking, would be one of last success stories of Dr. Kuntz, who passed away unexpectedly in February. "I have counted our blessings every day for the successful surgery performed by Dr. Kuntz," said Jim's mother, Mary Pat Schoeny Harris. "I can't say how often I've thought about him."

## Getting patients back on their feet with PM&R



Angela Stillwagon, DO

Helping patients recover function and quality of life after stroke, traumatic brain injury, or musculoskeletal or spinal cord injury is the prime objective of Angela Stillwagon, DO, a new member of the UC Neuroscience Institute's Physical Medicine & Rehabilitation team.

Specialists in physical medicine and rehabilitation, often referred to as PM&R, help people whose injuries or chronic musculoskeletal conditions cannot be surgically healed. "PM&R is often called the 'quality of life' profession because we focus on enhancing patient performance," Dr. Stillwagon says. "Our goal is to reduce pain and restore functional ability and quality of life with a comprehensive program that is medical, social, emotional and vocational."

Dr. Stillwagon and her colleagues see patients who have conditions related to the brain, muscles, tendons, joints or bone. Conditions include brain injury, spinal cord injury, low-back injury, stroke, amputation, arthritis, carpal tunnel or tarsal tunnel syndrome, and bladder or bowel dysfunction.

"Many of these conditions are a result of car accidents, work-related accidents and accidents that occur during sports and recreational activities," Dr. Stillwagon says. "We see many stroke survivors. And we also provide what we call 'after care' to people who are being treated for cancer, multiple sclerosis, spina bifida, cerebral palsy and osteoporosis. The UC Cancer Institute and Waddell Center for Multiple Sclerosis regularly send us patients who experience musculoskeletal issues related to their illness."

All treatments are provided on an outpatient basis. Treatments can involve medications, braces, at-home equipment, physical therapy and occupational therapy. "We can provide botulinum toxin injections to patients who experience spasticity from spinal cord injury," Dr. Stillwagon says. "We perform wheelchair evaluations and prosthesis evaluations. For some of our patients with chronic pain, we offer ultrasound-guided steroid injections."

PM&R specialists strive to prepare patients and families for the transition from inpatient care at the Daniel Drake Center for Post-Acute Care to life at home. "They have definitely had a diagnosis that changed their lives," Dr. Stillwagon says, "and we want to help them live with their new changes and maximize their independence."



UCNI Friends' Blog



## From pilot grant to \$1.67 NIH award

When pilot grants result in extraordinary preliminary data, researchers can parlay their new knowledge into million-dollar grants from the National Institutes of Health (NIH). Atsuo Sasaki, PhD, a researcher with the UC Brain Tumor Center, successfully did that when he acquired a \$1.67 million, five-year NIH grant last fall. The grant will enable Dr. Sasaki to test his novel hypothesis that glioblastoma, the highly aggressive brain cancer, can be inhibited by targeting PI5P4K $\beta$ , a key player in cancer that has recently emerged. "Glioblastoma multiforme is the most prominent and malignant primary brain tumor, and it tends to be stubbornly resistant to conventional therapies," notes Dr. Sasaki. "There is a critical need for new therapeutic modalities and agents that improve patient outcome."



Atsuo Sasaki, PhD

## Neurobiology Research Center awards a record number of pilot grants



Grant award winners: Nazanin Majd, MD, PhD; Brian Scott Katz, MD; Kari Dunning, PT, PhD; Adam Funk, PhD; Hilary Perez, PhD; Robert McCullumsmith, MD, PhD; Jon Dudley, PhD; Sheila Fleming, PhD; Kim Seroogy, PhD; Ying Sun, PhD; Michael Williams, PhD

The Neurobiology Research Center at the University of Cincinnati (UC) Neuroscience Institute this year awarded a record of eight peer-reviewed pilot grants. That is more than double the number awarded at UC in the past three years combined, demonstrating the level of interest and commitment in neuroscience research. The awards this year total \$200,000.

"The goal of these pilot grants is to provide seed money for projects that have legs and will hopefully attract national funding," said James Herman, PhD, director of the Neurobiology Research Center.

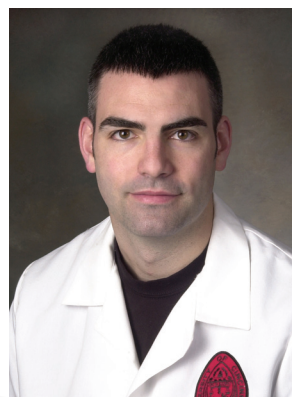
"A second important goal is to encourage collaborative research and build team science," he added. "The Neurobiology Research Center aims to bring together investigators from across departments, colleges and institutions to further collaborative thinking and development of leading research in the neurosciences."

Funding for the grants came from the University of Cincinnati College of Medicine (\$50,000), the George Wile Fund for neuroscience basic research (\$50,000), the Sunflower Revolution Fund (\$50,000) and the Meshewa Farm Foundation for research in stroke (\$50,000).

## Progesterone does not improve outcomes after traumatic brain injury

Medical scientists were hopeful that progesterone, a hormone that occurs naturally in both women and men, could help people who had suffered a traumatic brain injury. Unfortunately, a multi-site study that included the UC Neurotrauma Center has shown that progesterone does not improve outcomes.

Results of the study, known as ProTECT-III (Progesterone for Traumatic Brain Injury, Experimental Clinical Treatment), were published in the *New England Journal of Medicine*. The randomized clinical trial assessed whether administering progesterone in patients immediately after a moderate to severe traumatic brain injury would reduce brain damage and swelling and thereby improve the patients' mental and physical outcomes.

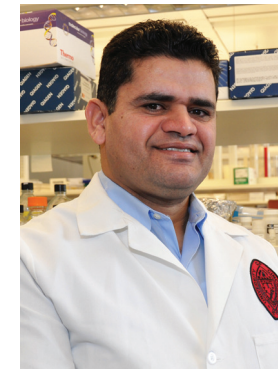


Jordan Bonomo, MD

"We were disappointed to learn that progesterone was not as beneficial as we had hoped," said Jordan Bonomo, MD, an emergency medicine and neurocritical care specialist at the UC Neuroscience Institute. "It's important that we develop new therapies to treat traumatic brain injuries, especially considering the large number of people who suffer from them."

## Researchers share \$200k in Molecular Therapeutic Program Grants

The research and development of improved therapy for metastatic brain tumors and high-grade gliomas is the focus of \$200,000 in pilot grants awarded by the UC Brain Tumor Center's Molecular Therapeutics Program. The annual competition for pilot grants has become a hallmark of the Program, an ambitious research initiative that seeks to translate novel laboratory research into Phase I and II clinical trials for patients. The three scientists who earned this year's pilot awards are members of the UC Neuroscience Institute, the UC Cancer Institute and the Cincinnati Cancer Center. The funded pilot grants for 2015:



El Mustapha Bahassi, PhD

**El Mustapha Bahassi, PhD, Research Assistant Professor in the Division of Hematology-Oncology: Exploring the resilience of circulating cancer cells** – Dr. Bahassi will address a hot topic in cancer research: the complex, multistep process of metastasis, in which cancer cells break away from their primary site, survive in the bloodstream, and then take root in distant organs. Dr. Bahassi will test whether mutations in three genes – Keap1, Nrf2 and P300 –

provide a survival benefit to circulating tumor cells in patients whose cancer has spread to the brain.

**Pankaj Desai, PhD, Professor of Pharmacokinetics and Drug Metabolism: Letrozole for the treatment of high-grade gliomas** – Dr. Desai will continue his research into the potential

of letrozole to treat malignant high-grade gliomas (grades III and IV), which carry an unfavorable prognosis. Letrozole is already widely used in the treatment of breast cancer. Dr. Desai hopes to calculate a safe starting dose of letrozole as well as a strategy for dose escalation in anticipation of Phase I/II clinical trials for patients with brain cancer. Such a clinical trial could begin as early as September 2015.

**Dr. Xiaoyang Qi, PhD, Associate Professor in the Division of Hematology-Oncology: Radiation-enhanced SapC-DOPS therapy for metastatic brain tumors** – Dr. Qi will expand his growing body of research involving the nanovesicle SapC-DOPS. Dr. Qi has recently shown that, in an animal model, SapC-DOPS can successfully target brain metastases that arise from human lung and breast tumor cells. He now seeks to test his hypothesis that combining SapC-DOPS with radiation therapy could provide an enhanced therapeutic option for patients whose cancers have spread to the brain.

The three pilot grants are the latest example of how fundraising efforts by the UC Brain Tumor Center's Community Advisory Council have enabled the center's cadre of elite scientists to pursue innovative ideas that could lead to future treatments. In addition to grants from the Molecular Therapeutics Program and UC's Center for Clinical and Translational Science Training, researchers have benefited from support provided from the Center's annual Wine Tasting event and Walk Ahead for a Brain Tumor Cure, as well as from generous donations from the Shemanski Foundation, the Mayfield Education and Research Foundation and the LCS/Sahlfeld Foundation.

## Price and the placebo effect

People's perceptions of the cost of a drug may affect how much they benefit from the drug, even when they are receiving only a placebo, according to research led by Alberto Espay, MD, Medical Director and Endowed Chair of the James J. and Joan A. Gardner Family Center for Parkinson's Disease and Movement Disorders.

"Patients' expectations play an important role in the effectiveness of their treatments, and the placebo effect has been well documented, especially in people with Parkinson's disease," says Dr. Espay, who described his findings in the journal *Neurology*. "We wanted to see if the people's perceptions of the cost of the drug they received would affect the placebo response."

Twelve people with Parkinson's disease were told that they were going to receive two versions of the same drug in the form of shots. After the first shot wore off, they would get the second shot. They were told that the formulations were believed to be of similar effectiveness, but that one shot cost \$100 and the other \$1,500. In fact, the patients received only saline injections (placebos) and no drug at all. Nevertheless, both placebos improved motor function,



and when people received the "expensive" drug first, their motor skills improved more than when they received the "cheap" drug.

"If we can find strategies to harness the placebo response to enhance the benefits of treatments, we could potentially maximize the benefit of treatment while reducing the dosage of drugs needed and possibly reducing side effects," Dr. Espay says.

Looking for the latest neuroscience news?  
Sign up for the bi-monthly UC Neuroscience Update at <http://ucneuroscience.com/mailling-list/> Or, send an email to [Audrey.Ronis-Tobin@UCHealth.com](mailto:Audrey.Ronis-Tobin@UCHealth.com).