

Your UMass medicine

From the University of Massachusetts Medical School and UMass Memorial Health Care
Produced by the UMass Medicine Development Office

UMass Memorial offers new treatment for long-suffering atrial fibrillation patients

PHYSICIANS AT UMass MEMORIAL have developed a new approach to treat patients with atrial fibrillation (afib), one of the most common heart rhythm disorders, which affects almost 3 million people in the U.S. The "Convergent Approach" is a team method that combines the best medical techniques and technologies in an effort to provide a more comprehensive and complete procedure to treat this challenging heart condition. Lawrence Rosenthal, MD, PhD, director of electrophysiology and pacing, and Stanley Tam, MD, chief of cardiothoracic surgery, are among the first to combine their unique skills.

"This is an exciting advancement because it targets long-suffering patients for whom other forms of treatment were unsuccessful," said Dr. Tam, who is also associate professor of surgery at UMass Medical School. "This heart team approach may become a new standard of care because it is comprehensive and potentially predicts outcomes."

The surgical procedure uses radiofrequency (focused heat) to produce lesions (scar tissue) on the outside of the left atrium to block abnormal electrical signals. The patient then undergoes a catheter-based procedure from inside the left atrium. During the procedure, a cardiac surgeon and an electrophysiologist (EP) work together, in a single setting. The surgeon is able to create a comprehensive, linear lesion pattern on the outside surface of a beating heart through a small incision (one inch) made in the patient's abdomen, instead of through invasive chest incisions and/or

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CANDO Clinic offers new hope to children with autism and their families

IN EARLY 2013, it was reported that the CDC now estimates that about one in 50 children in the U.S. have been identified with an autism spectrum disorder (ASD). Most are diagnosed after they reach the age of 4, and research shows that early detection and treatment greatly improves a child's development and future.

For children with an ASD and their families living in Greater Worcester, facilities offering comprehensive diagnosis and treatment—at an average wait time of nine to 18 months—were only available in or near Boston. Until now.

In June 2013, the Center for Autism and Neurodevelopmental Disorders (CANDO) Clinic, a joint effort of UMass Medical School and UMass Memorial Health Care, was launched. The first-ever interdisciplinary autism disorder clinic in Metro West and Central Massachusetts, the CANDO Clinic

is a single point of entry that provides timely, comprehensive evaluations and short-term treatment services.

"We were really excited to start this clinic because in Metro West, Central Massachusetts and Western Massachusetts there hasn't been a clinic that serves multiple complex children and children with autism," said Jean A. Frazier, MD, the *Robert M. and Shirley S. Siff Chair in Autism*, professor of psychiatry and pediatrics, and medical director of CANDO.

"It's really difficult," said Brandy Melhouse, whose son Nathan was diagnosed with autism at age 5. "You don't know where to go and when you do get in to see a doctor, you get a piece of paper with some recommendations on it and then you're sent off. We went to CANDO where they will connect those pieces for you."

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Pattie Peloquin (inset), cancer patient and supporter of the Cancer Center of Excellence, and Dr. Giles Whalen address the crowd gathered at the thank-you reception held in January for 500 Club members and leaders of fundraising teams that reached or exceeded \$1,000 for the 15th annual UMass Medicine Cancer Walk.

Fundraising for 15th annual UMass Medicine Cancer Walk exceeds \$500,000 goal

AS THE FINAL HOURS OF 2013 came to a close, supporters of the UMass Medicine Cancer Walk found an extra reason to celebrate. On Dec. 31, 2013, Walk organizers proudly announced that individuals, fundraising teams and corporate sponsors had collectively raised \$510,000 for the 15th annual event.

"This is a tremendous achievement and our many supporters are to be commended and congratulated for their dedication and commitment to raising money for our Cancer Center," said Giles Whalen, MD, interim director of the UMass Medicine Cancer Center of Excellence, chief of surgical oncology & endocrine surgery and professor of surgery. "To see an

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A MESSAGE FROM
PATRICK MULDOON, FACHE
 PRESIDENT, UMASS MEMORIAL MEDICAL CENTER

SINCE JOINING UMass Memorial Medical Center six months ago, my team and I have tackled challenges that many academic medical centers face in a health care industry grappling with fewer inpatient discharges, shrinking government and private payer reimbursements for services, and the wide-ranging and complex provisions of the Affordable Care Act.

One of my first messages to Medical Center physicians and staff was that I understand they come to work each day with a purpose: to provide the best patient care and experience possible, no matter their role. I told them that it is my purpose to support them fully in that effort.

A medical center that is successful in caring for its patients, its community and its dedicated employees well into the future must achieve a level of financial performance that ensures sustainability. Due to a number of factors, the Medical Center has been spending more than it's been earning, and we set about changing that.

A turnaround plan includes adjustments in workforce, programs and services, and a concerted cost reduction initiative has helped to tighten the gap between revenue and expense lines. The work goes on as forces continue to impact the Medical Center's finances.

We are continuously refining our strategy to establish a new world of health care delivery that positions us for the long term. The Medical Center of the future has several characteristics:

- Distinguished for providing comprehensive care to the region and for educating tomorrow's leading health care providers.
- Known for excellent quality in direct care and patient experience that also brings costs down.
- Part of a visionary system that best aligns programs and services for health and well-being.
- Establishes technology and services that match patient needs at a specialized medical center.
- Provides those services through easy, quick access and seamless patient flow throughout clinics and campuses.
- Focuses on population health care, which is coordinated and helps patients stay healthy across the care continuum.

Our system's president and CEO, Dr. Eric Dickson, and I—and every member of UMass Memorial Health Care—are committed to transforming our system's approach to health care delivery. We've made progress and continue to do more. Our Medical Center has mapped its way forward and I am excited about the future for our patients, community, physician-faculty and staff.

UMass Medicine Development Office
 333 South Street
 Shrewsbury, MA 01545
www.umassmed.edu/development

To learn more about supporting medical research, patient care and medical education initiatives at UMass Memorial Health Care and UMass Medical School, please contact us at 508-856-5520 or giving@umassmed.edu.

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Robert Checkosky

Medical Center study examines new treatment for patients with complex aortic aneurysms

WHEN ROBERT CHECKOSKY learned that there was a new way to treat his abdominal aortic aneurysm, he said "Let's do it!" Checkosky learned of the procedure from Andres Schanzer, MD, a member of the Division of Vascular and Endovascular Surgery at UMass Memorial Medical Center.

The Medical Center is one of very few centers in the United States that can now treat very complicated aortic aneurysms in the abdomen and chest with minimally invasive stenting techniques. The Division of Vascular and Endovascular Surgery is performing fenestrated and branched endograft repair in a controlled clinical investigational setting to learn how best to treat patients with these complex aortic aneurysms.

An aortic aneurysm is a dangerous weakening of the walls of the main artery in the abdomen

that can have serious health consequences, including artery ruptures and internal bleeding. As the blood flows from the heart through the aorta it is carried to other parts of the body such as the intestine, spine and legs by smaller arteries that branch away from it. When a patient develops an aortic aneurysm, many times these branches are affected. The aneurysm is repaired when it gets large enough to be at risk for rupture or breaking.

Mr. Checkosky, who is now back to a normal routine and feeling great, is happy that he was able to have this experimental procedure available to him and to know he was part of research that may also help others with the same condition.

For further information about this study please contact the Division of Vascular and Endovascular Surgery at 508-856-5599. ■

Fundraising for 15th Annual...

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increased level of support from individuals and corporations within our local communities is heartwarming and inspiring."

An estimated 12,000 people participated in the 2013 UMass Medicine Cancer Walk on Sunday, Sept. 29, raising money to support research, care and clinical trials at the Cancer Center. There were also 17 corporate sponsors, including the Harr Motor Group, which conducted a fundraising challenge that raised more than \$53,000.

As a way to recognize outstanding individual fundraisers, a group called the 500 Club was created to acknowledge those individuals who obtained pledges of \$500 or more for the Walk. The inaugural group of 500 Club members totaled 200.

On Jan. 30, 2014, a thank-you reception for 500 Club members and team leaders whose teams raised \$1,000 or more was held in the Ambulatory Care Center on the Worcester campus shared by UMass Memorial Medical Center and UMass Medical School. Attendees celebrated their

recent achievements and began making plans and commitments for the 2014 Walk, which will take place on Sunday, Sept. 28.

"I am alive and well because of the exceptional treatment and care I received at UMass," said Pattie Peloquin, a patient of the Cancer Center who spoke at the reception. "If I can do for someone else what was done for me, I'm in. Being a team leader and raising funds for the UMass Medicine Cancer Walk is my way to say thanks, to give back and to provide hope to other cancer patients."

More information about the UMass Medicine Cancer Walk can be found online at www.umassmed.edu/cancerwalk. ■

Top fundraising teams for the 2013 UMass Medicine Cancer Walk

Team UMass Medical School Shriver Center	\$20,000+
Team Absolute Machinery Corp.	\$12,500+
Team UMass Five College Federal Credit Union	\$9,500+
Bobby's Bullpen	\$9,200
Sophia's Sunshine	\$8,000+
Millbury for a Cure	\$8,000+
Karina's Crew	\$7,600+
Team Goretti's Supermarket	\$6,000+
Kassia's Crusaders	\$6,000+
South Street Striders	\$6,000+
Team MAP	\$5,500+
Gaga's Gang	\$5,500+

UMass Medical School Sidekicks receive support from charitable foundations

THE UMASS MEDICAL SCHOOL Sidekicks program, which helps medical students to build relationships with pediatric patients that prepare them to become more empathic physicians, got a boost from two notable charity foundations in October 2013: the Jeff Gordon Children's Foundation, which awarded the program a \$10,000 grant, and the Dunkin' Donuts & Baskin Robbins Community Foundation, which awarded the program a \$7,500 grant.

The Sidekicks program matches medical students with patients receiving care at the UMass Memorial Children's Medical Center. By pairing a pediatric patient with a student, usually in his or her first year, Sidekicks creates an opportunity to build a supportive relationship outside the usual family or medical setting. It also creates opportunities for students to learn from situations they are not necessarily exposed to in the classroom and to build relationships with these children that will prepare them to become better physicians.

For example, Shaun Dean, MD '12, said one of the most important things he came to understand through his young companion is the toll a child's illness takes on the family. He realized something that

might otherwise have taken him years of practice to learn: while your day as a physician may fly by, filled with numerous patients, tests and meetings, the family is waiting just to hear from you.

"I saw how hard it was for the family . . . the travel and gas expenses; trying to find a wheelchair and a parking space," he said. "And the waiting. Waiting, waiting, waiting."

Tricia Campero, whose son Christian receives treatment for T-cell acute lymphoblastic leukemia at UMass Memorial, credits her son's Sidekick, Walter Palmer, School of Medicine Class of 2016, with changing the way her son feels about going to the hospital.

"Christian was always scared

"Christian was always scared to come here, but that's changed. Now he sees it as an opportunity to spend time with Walter. Ninety-nine percent of the time, Walter shows up when we let him know that Christian will be here. It has been an amazing pairing."

—TRICIA CAMPERO

to come here, but that's changed," Campero said. "Now he sees it as an opportunity to spend time with Walter. Ninety-nine percent of the time, Walter shows up when we let him know that Christian will be here. It has been an amazing pairing."

As the medical students are experiencing both the joys and the heartaches of building relationships with patients, they receive support from one another, from faculty



Sidekick Walter Palmer with Christian

advisers and from guest speakers at monthly Sidekicks meetings. These meetings create an environment for students to talk about their experiences and learn from their peers. They also have a chance to interact with guest speakers who range from social workers to parents who have lost children.

Continuity is an important

Usmani, MD, co-founder and faculty adviser for Sidekicks, the program has more than doubled in size to 67 pairs of students and children this year.

The mission of the Jeff Gordon Children's Foundation is to fund organizations providing the best in pediatric cancer research, treatment and patient support programs. Its grant to Sidekicks was awarded through the Foundation's competitive grant program the Promise Circle, which is committed to funding family support programs that improve patient's quality of life during treatment. A leader in the sport of racing, Jeff Gordon is a four-time NASCAR Cup Series champion, has three Daytona 500 wins and four Brickyard 400 wins, among others.

The Dunkin' Donuts & Baskin Robbins Community Foundation works with its franchisees to support community organizations at the local and regional level. Its mission is to serve the basic needs of those communities through food for the hungry, safety and children's health. Since 2006, it has donated more than \$4.4 million. ■

part of the program. Students are required to commit to interacting with their buddies twice a month for at least a year and must attend monthly Sidekicks meetings.

Started as a student interest group in 2009, the program became an official part of the School of Medicine curriculum as an Optional Enrichment Elective in 2012 following a comprehensive review process. According to Naheed



Mitchell H. Sokoloff, MD

MITCHELL H. SOKOLOFF, MD, joins the UMass Memorial and UMass Medical School community in March 2014 as the founding chair of the Department of Urology. A urologic oncologist internationally known for his contributions to the surgical treatment

Internationally known urologic oncologist joins Department of Urology as its founding chair

of prostate, kidney and testis cancers, he assumes the role held on an interim basis by Stephen E. Tosi, MD, associate professor of surgery and chief physician executive of UMass Memorial Health Care. Dr. Sokoloff's appointment to the position was announced in October 2013.

Sokoloff comes to Worcester from his position as professor of surgery and chief of the urology division of the Department of Surgery at the University of Arizona College of Medicine, a position he held since 2008. He earned his AB and MD degrees from Stanford University and completed a residency in urology at UCLA School of Medicine, as well as a fellowship in molecular urology and therapeutics at the University of Virginia.

Sokoloff is board certified in urology, with clinical specialties in the treatment of prostate, kidney and testis cancers. His expertise includes robotic prostatectomy,

nerve-sparing prostatectomy, nephron-sparing partial nephrectomy and retroperitoneal lymph node dissection. He has particular expertise in the management of high risk, locally advanced and recurrent prostate, kidney and testis cancers. He has received national peer-reviewed funding for basic and translational research.

At the University of Arizona, he developed a nationally recognized program in genitourinary oncology that incorporated novel anti-cancer agents and technologies as a complement to conventional surgical therapy.

Previously, Sokoloff was chief of urologic oncology in the Division of Urology and Renal Transplantation and director of robotic surgery in the Department of Surgery at Oregon Health and Science University. Prior to that, he was director of urologic oncology in the

Division of Urology at the University of Chicago. He is a member of the American Association of Cancer Research, the American Urological Association, the American College of Surgeons, the Society for Urologic Oncology, the Society of Urologic Chairs and Program Directors, and the Society for Basic Urologic Research. He is the author or co-author of more than 40 peer-reviewed publications, numerous book chapters and abstracts and has presented at a wide range of regional, national and international meetings.

In his new role as chair of the Department of Urology, Sokoloff will be charged with re-establishing the urology residency program at UMMS, growing the clinical urology program at UMass Memorial and fostering and supporting the research activities of current and future urology faculty members.

FDA grants orphan drug status for Hepatitis C treatment developed by MassBiologics

Monoclonal antibody designed to prevent hepatitis C recurrence in liver transplant patients

UMASS MEDICAL SCHOOL'S MassBiologics has received an orphan drug designation from the U.S. Food and Drug Administration (FDA) for MBL-HCV1, a monoclonal antibody developed to prevent the recurrence of hepatitis C virus (HCV) in patients receiving a liver transplant.

Complications from chronic HCV infection are the most common indications for liver transplantation. For patients with end-stage liver disease or hepatocellular carcinoma resulting from HCV infection, liver transplantation is often the only treatment option, but it is not a cure for the disease. In almost all cases, the new donor liver becomes infected with HCV soon after transplantation.

MassBiologics' monoclonal antibody, currently in a phase 2 clinical trial, is intended to prevent HCV from damaging the transplanted liver.

"Being granted orphan drug status facilitates the goal of bringing this investigational product to patients," said Deborah C. Molrine, MD, deputy director of clinical affairs at MassBiologics and professor of pediatrics. "The economic incentives available to MassBiologics and potential

commercial partners through the Orphan Drug Act will contribute greatly to bringing this monoclonal antibody to market as a treatment option for patients receiving liver transplants as a result of HCV infection."

The Orphan Drug Act was established by Congress in 1983 to aid the development of new therapies for rare medical conditions or diseases that affect fewer than 200,000 patients annually. To help stimulate new drug development for these less common conditions, the FDA provides financial benefits to companies that achieve orphan drug designation, including market exclusivity for seven years, tax incentives, fee waivers and potential grant support.

Developed by MassBiologics, MBL-HCV1 is a fully human monoclonal antibody that targets a region of the hepatitis C virus on its surface envelope, preventing it from infecting liver cells. MBL-HCV1 has been shown to be safe in healthy human subjects and is currently being studied in patients with chronic hepatitis C infection undergoing liver transplantation.

"Infusions of the monoclonal antibody have been well-tolerated in transplant patients and allow



for delivery of the targeted HCV treatment to begin just before the removal of the diseased liver and to continue through the early post-transplant period," said Dr. Molrine. "A phase 2 study is underway in liver transplant patients that combines the

monoclonal antibody with one of the first two oral HCV direct acting anti-virals to be licensed by the FDA. We anticipate having data to present soon on the effect of this treatment on HCV detection after liver transplantation." ■

New Treatment for Atrial Fibrillation...

Continued from page 1

ports, as in other surgical procedures. The EP then threads catheters through the patient's femoral vein in the groin to complete the procedure, and utilizes diagnostic techniques to confirm that all abnormal electrical signals have been blocked.

"Until now, a closed chest, beating heart, multidiscipline approach has not existed," said Dr. Rosenthal, who is also a professor of medicine at UMMS. "This approach may represent a significant change in how atrial fibrillation patients will be treated. The epicardial ablation

device and access to the posterior of the heart provides a powerful and complementary tool for EPs."

This combined approach could improve success rates for symptomatic patients with persistent and longstanding persistent afib who want relief from their symptoms.

For more information about the Convergent Approach, call the UMass Memorial Atrial Fibrillation Treatment Program at 877-617-AFIB (2342) or visit www.cardiovascular.umassmemorial.org. ■

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The next Winter Ball will take place on
Friday, Dec. 5, 2014.

For more information about how you can participate, contact the
UMass Medicine Development Office at 508-856-5520.



Despite the rain, supporters of Bullfinchs Duck Race participated in this annual fundraising event in September.



Spirited rubber duck race fundraiser marks 10 years of support for Child Life Program

IF IT LOOKS LIKE A DUCK...it must be the Labor Day Rubber Duck Race at the Wayside Inn's Grist Mill. This annual event, which raises funds for the Child Life Program at the UMass Memorial Children's Medical Center (CMC), marked its 10th anniversary in 2013—a decade of support that grew out of one family's gratitude for the care their child received.

At age three, Maddy Richardson was diagnosed with leukemia and underwent lifesaving treatment at the CMC. Today, she is a college junior studying forensic science at the Eberly College of Science at Penn State. Her parents, Scott and Terry, and grandmother Peggy channeled their gratitude into a spirited event that has captured the

hearts of an entire community.

Owners of Bullfinchs Restaurant in Sudbury, Mass., the Richardson family each year offers 3,000 rubber ducks for "adoption" to customers and the community for \$5 each. People also can buy a "six-quack" for \$25 and a flock of 13 ducks for \$50.

At noon on race day, the ducks are dropped into the stream at the Grist Mill and the ducks' owners cheer on their adoptees as they "race" toward the finish line. Owners of the top three finishers win prizes, and the remaining proceeds go to the Child Life Program.

This past Labor Day was a perfect day for ducks, dawning with rain and a mass of puddles, but not so much for fans. Scott and Peggy Richardson actually considered

canceling the race and drawing the winners from a bin of tickets. But they decided to go ahead despite the weather and, as noontime approached, families with umbrellas started to arrive. By the start of the race, nearly 500 stalwart supporters had braved the bad weather to cheer on their ducks, making it yet another successful event.

"We've had wonderful support from our extended family at Bullfinchs," said Scott Richardson. "It makes us feel very happy and proud."

The Child Life Program has used the funds raised to purchase a variety of items, including individual televisions for patient rooms and Chemo Ducks to help kids with cancer understand what's happening

to them in a child-friendly and comforting way. These plush, bright yellow ducks are dressed in hospital pajamas and a bandanna, and feature catheters and an arm immobilizer.

"So much good has come out of those difficult times when Maddy was sick," Richardson said. "The folks at the Child Life Program and the things they did for us really made a difference. When it came to a fundraising event to give back, they were the first ones we thought of."

For more information about the Child Life Program at the UMass Memorial Children's Medical Center, visit www.umassmemorial.org/child-lifeprogram. ■

Donor-funded research promises to be "the epitome of personalized cancer treatment"

PERSONALIZED CANCER TREATMENT—therapy tailored to the unique genetic makeup of an individual's tumor—is arguably the holy grail of cancer research today. Thanks to the generosity of a donor couple, UMass Memorial Medical Center and UMass Medical School are on the forefront of this quest with a project aimed at finding better treatments for colorectal cancers.

Physician-scientists at these two institutions are collaborating on research using humanized mice whose immune systems have been altered so that human cells can be implanted in them without being rejected. It's an approach that promises to make possible "the epitome of personalized cancer treatment," said Justin Maykel, MD, chief of the Division of Colon and Rectal Surgery at UMass Memorial.

"If we can take a tumor from a patient and grow it in one of these mouse lines, we can then treat the mice with different chemotherapy agents to see which one will work best for that patient's specific tumor," explained Dr. Maykel, also an associate professor of surgery at

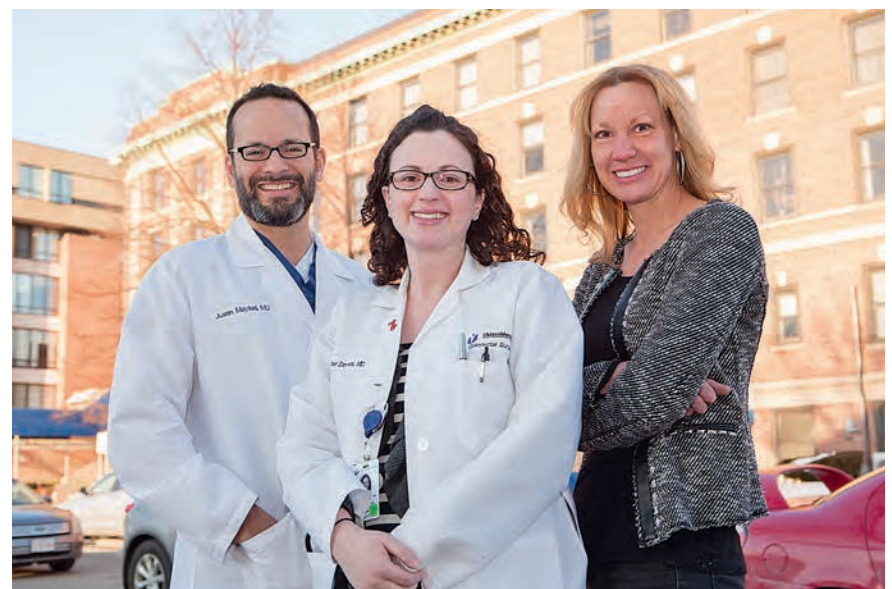
UMMS, who is collaborating with colleague JeanMarie Houghton, MD, PhD, of UMass Memorial's Division of Gastroenterology and associate professor of medicine and cancer biology at UMMS. "Then we can offer it to the patient.

"This concept of a mouse avatar of a person sounds simplistic," Maykel said, "but it hasn't really been done since there haven't been the right mouse lines to grow tumors in."

That is, until now.

Maykel's and Dr. Houghton's research is benefitting from the work of UMass Medical School Professor of Molecular Medicine Dale Greiner, PhD, who has developed unique strains of mice that can be implanted with human cells and tissues, including human immune systems.

"Typically, there is a time lapse between when a patient is diagnosed with colon cancer and when the patient is ready to receive chemotherapy," said Maykel, explaining that most patients will first undergo surgery then have a four- to six-week recovery period. "That's enough time for the



Dr. Justin Maykel, Dr. Jennifer Davids and Dr. JeanMarie Houghton

research team to grow the patient's tumor in one of these mice and determine which chemotherapy could work."

Despite its tremendous promise, however, getting this research off the ground proved challenging for Maykel and Houghton, who are also working with Jennifer Davids, MD, a colorectal surgeon in Maykel's division and assistant professor of surgery at UMMS.

"We struggled to get this project launched with National Institutes of Health funding," said Maykel. "But due to sequestration and cutbacks, we kept hitting roadblocks."

Enter a private donor couple,

who wish to remain anonymous, who had an intensely personal interest in novel treatments for colorectal cancer.

"Unfortunately, these donors had lost a son to colorectal cancer," said Maykel. "When we presented this research to them, they saw the potential and were willing to fund it to get our project up and running.

"We are doing novel, creative research right here in Worcester, developing new strategies for patients with colorectal cancer," he added. "A single donation is making a real difference in helping to move it forward. One couple can have a tremendous impact." ■

NOTABLE GRANT IN...

NEW METHOD OF STUDYING NEUROPSYCHIATRIC DISEASES

UNDERSTANDING HOW THE ACTIVITIES of certain neurons help to mediate behavior and influence disease is a prominent challenge in treating neuropsychiatric disorders.

“Optogenetics” is an emerging technique designed to address this challenge. It combines recent breakthroughs in both optics and genetics to allow scientists to stimulate the activity of individual neurons in animal models. However, current optogenetic tools rely on fiber optic probes to transmit light and stimulate neurons in vivo. Because these probes have to be surgically inserted into the brain and attached to a power source, their practical use in animal models is greatly limited.

With a \$1.3 million EUREKA (Exceptional, Unconventional Research Enabling Knowledge Acceleration) grant from the National Institute of Mental Health, Gang Han, PhD, assistant professor of biochemistry & molecular pharmacology at UMass Medical School plans to develop light activated nanoparticles that can be used to image live brain tissue. These novel nanoparticles will form the basis of a new optogenetic tool that promises to help researchers map and decode previously inaccessible neural circuitry deep in the brain using near infrared light. Insights gleaned from this breakthrough technique will further understanding of the relationship between neural circuit activity, behavior and neuropsychiatric diseases. The co-investigators on the grant include Carlos Lois, MD, PhD, professor of neurobiology, and Yang Xiang, PhD, assistant professor of neurobiology.

Dr. Han proposes to develop a wireless optogenetic technique using key advances his lab has made in lanthanide-doped upconversion nanoparticles (UCNPs). The advantage of these nanoparticles is that they can be turned on using low power, tissue-penetrating, near infrared radiation that is then converted to higher energy, visible light that can be seen through deep tissue. This means that they can be activated remotely and safely inside living animal models to stimulate and observe particular neurons or neural circuitry without the need for surgery or restrictive probes. This would provide scientists an important new tool for mapping and understanding the complex interaction between particular neural pathways and behavior.

“This strategy offers a potential paradigm shift to achieve true ‘wireless’ control of neuron activation and deactivation,” said Han. “The impact of such a new technique is impossible to overstate as it would allow us to study the relationship between neural circuitry activation and behavior, a possibility that even a few years ago was hard to imagine.”

The EUREKA grant is part of a program by the National Institutes of Health to fund exceptionally innovative research projects enabling the establishment of novel concepts and approaches to solve important problems or open new areas for investigation.



The work of Andrew R. Tapper, PhD, and colleagues points at new target to help smokers quit.

UMMS neuroscientist identifies region of brain responsible for nicotine withdrawal symptoms

HEADACHES, ANXIETY, IRRITABILITY—these and other symptoms of nicotine withdrawal can significantly deter smokers from being able to kick the habit. Now, in what may be a significant step toward alleviating those symptoms, UMass Medical School neuroscientist Andrew R. Tapper, PhD, and colleagues have identified the region of the brain in which they originate.

“We were surprised to find that one population of neurons within a single brain region could actually control physical nicotine withdrawal behaviors,” said Dr. Tapper, associate professor of psychiatry and interim director of the Brudnick Neuropsychiatric Research Institute at UMMS.

The Tapper lab discovered that physical nicotine withdrawal symptoms are triggered by activation of GABAergic neurons (neurons that secrete GABA, the brain’s predominant inhibitory neurotransmitter), in the interpeduncular nucleus—an area deep in the midbrain that has recently been shown to be involved in nicotine intake. Their study was published in the Nov. 14 issue of the journal *Current Biology*.

“Most of the work in the field has been focused on the immediate effects of nicotine, the addictive component in tobacco smoke, on reward circuits in the brain,” Tapper explained. “But much less is known regarding what happens

when you take nicotine away from someone who has been smoking for a long time that causes all these terrible withdrawal symptoms. Our main goal was to understand what brain regions are activated—or deactivated—to cause nicotine withdrawal symptoms.”

They did this through a series of experiments performed in mouse models with sophisticated neurochemistry and brain imaging methods, including recently developed optogenetics techniques in which specific neurons can be activated by light.

Most surprising was their discovery that nicotine withdrawal symptoms can be activated or deactivated independent of nicotine addiction. “When we activated the GABAergic neurons in the interpeduncular nucleus, mice suffered withdrawal symptoms even if they had no previous nicotine exposure,” Tapper noted.

These findings are promising because existing treatments intended to help people quit smoking are not always effective. “There are very few treatments to help people quit smoking,” Tapper said. “If you can dampen the activity of this brain region chemically during nicotine withdrawal then you would hopefully be able to help someone quit smoking because you could reduce some of the withdrawal symptoms that they are experiencing.” ■

CANDO Clinic...

Continued from page 1

Services at the clinic are provided by a combination of specialists at every stage of patient care, from evaluation and treatment to transition to community providers. The clinic is also uniquely positioned to further scientific understanding of autism spectrum and other neurodevelopmental disorders.

“One of the advantages our relationship with the Medical School gives the health system is that it allows us to attract world-class talent into the Worcester area,” said Eric W. Dickson, MD, MHCM, FACEP, president and CEO of UMass Memorial Health Care. “The CANDO Clinic is the perfect example of that.”

“Our long-term plan is to provide a permanent integrated clinical, research and teaching clinic for patients with ASD and neurodevelopmental disorders across the lifespan,” said Dr. Frazier. “Launching the CANDO Clinic was the first step.”

While operational support from UMMS and UMass Memorial provides the foundation for the clinic, Frazier also noted that traditional insurance reimbursements do not begin to cover the costs of providing services, which means that

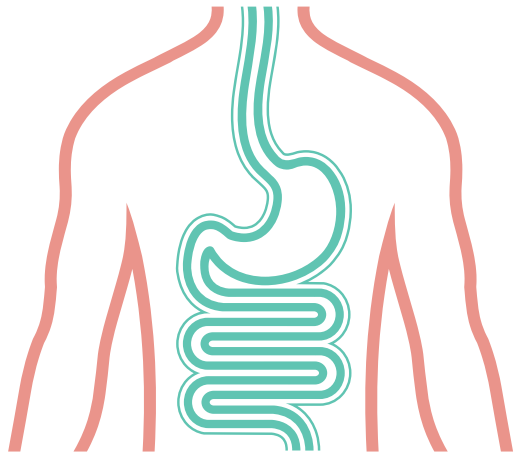
private funding is an essential part of starting and maintaining this initiative.

“We anticipated that only half of the cost of the 20-week CANDO program would be covered by insurance reimbursement,” she said.

An anonymous family has made a \$500,000 gift to help launch the CANDO effort. In order to maximize the impact of philanthropic support for the clinic, the family has offered a challenge match opportunity: if an additional \$500,000 is raised for CANDO by June 30, 2014, the donor family will match it dollar for dollar.

Substantial support has also come from the Doug Flutie Jr. Foundation for Autism, which awarded CANDO a \$20,000 grant, and from the 2013 Winter Ball, at which \$150,000 was raised during the Fund-A-Need auction, the centerpiece of this annual fundraising gala. Both the grant and the gala proceeds will be matched by that anonymous donor family.

“With additional resources, we can make our clinic available to more families and children,” said Michael F. Collins, MD, chancellor of UMass Medical School. “We can conduct groundbreaking research, we can establish partnerships with payers, and most importantly, we can make a big difference in the lives of children and the health of their families.” ■



HEALTH ADVICE

Preventing Colon Cancer

EACH YEAR MORE THAN 150,000 PEOPLE ACROSS the U.S. are diagnosed with colon cancer—a number that is disheartening to colorectal surgeons like Jennifer Davids, MD, a member of the Division of Colon and Rectal Surgery at UMass Memorial.

“Colon cancer is the second most common cancer, but 90 percent of cases are preventable through screening,” said Dr. Davids, who is also assistant professor of surgery at UMass Medical School. “Screening colonoscopy finds polyps before they become cancerous. It’s heartbreaking to see a patient come in with late-stage cancer when we have reliable and relatively simple tools to prevent it.”

Prevention includes an initial screening colonoscopy at age 50 for people at average risk. For those with a sibling or parent with colorectal cancer, Davids advises a colonoscopy starting at age 40, or ten years prior to the age at which that relative was diagnosed (whichever comes first).

Colorectal cancer does occasionally strike younger patients who have no family history. So, regardless of age, know the symptoms:

- changes in bowel habits (diarrhea or constipation),
- narrow caliber stools,
- blood in the stool,
- bloating,
- discomfort, and
- unintentional weight loss.

Report any concerns to your primary care physician and ask about a consultation with a colorectal specialist.

Hundreds of patients with colorectal cancer are treated each year in the UMass Memorial Division of Colorectal Surgery, which includes five fellowship-trained surgeons who specialize in laparoscopic, or minimally invasive, surgery. Davids, who joined the team last year, is the region’s only female colorectal surgeon. ■

Recommendations for maintaining colorectal health

- Follow a high-fiber, low-fat diet and limit your intake of red meat and processed meats.
- Exercise regularly to help lower your risk of developing large or advanced polyps.
- Talk to your doctor about taking a daily aspirin, which may help prevent polyp formation.

Calendar of Events

Stay Active and Healthy: Solutions for painful knees and hips

Wednesday, April 30, 6 to 8 p.m.
BEECHWOOD HOTEL, Worcester

Meet renowned joint replacement expert, David C. Ayers, MD, and learn about options for keeping joints healthy as you age. Dr. Ayers will discuss treatments and therapies for chronic arthritis and joint pain, as well as provide in-depth expertise on total joint replacement. This program is free to the public, but reservations are required and seating is limited. Refreshments will be served.

Call 888-358-6277 or visit www.umassmemorial.org/healthseminars to register or to make an appointment.

UMass Medicine Development Council

Tuesday, May 6, 4 p.m.
UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL, Worcester

Hudson Hoagland Society 29th Annual Meeting

Tuesday, May 13, 6 p.m.
ALBERT SHERMAN CENTER, UMASS MEDICAL SCHOOL, Worcester

Hudson Hoagland Society members are invited to a cocktail reception in recognition of their commitment to advancing biomedical research at UMass Medical School. Craig Ceol, MS, PhD, and Jeanne Lawrence, PhD, will present. HHS members will receive additional details by mail.

For more information contact Kate Gomes in the UMass Medicine Development Office at 508-856-1994 or kate.gomes@umassmed.edu

The rhythm isn’t going to get you: Learn about afib

Wednesday, May 14, 6 to 8 p.m.
BEECHWOOD HOTEL, Worcester

Experts from UMass Memorial’s Atrial Fibrillation Treatment Program will discuss the risk factors, signs and symptoms of afib, an irregular and often rapid heartbeat, as well as treatment options available at UMass Memorial Medical Center. The program is free to the public, but reservations are required and seating is limited. Refreshments will be served.

For more information, call 888-358-6277 or visit www.umassmemorial.org/heart

Commencement

Sunday, June 1, noon
UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL, Worcester
For more information, contact the Office of University Events at 508-856-1821 or visit www.umassmed.edu/universityevents

UMass Medicine Cancer Walk Kick-off Breakfast

Thursday, June 12, Registration at 7:30 a.m., Program from 8 to 9 a.m.
UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL, Worcester

This annual breakfast kicks off the vital fundraising efforts of the UMass Medicine Cancer Walk by providing team leaders with an opportunity to learn more about the Walk and the life-saving work being conducted by the UMass Medicine Cancer Center of Excellence.

Companies interested in sponsoring the Walk, recruiting teams or offering challenge grants to fundraisers should contact Beth Whitney at 508-856-5512 or visit www.umassmed.edu/cancerwalk

Investiture 2013

Four UMass Medical School faculty members were invested as named chairs at Investiture in September 2013. From left: **Dale L. Greiner, PhD**, the *Dr. Eileen L. Berman and Stanley I. Berman Foundation Chair in Biomedical Research*; **Silvia Corvera, MD**, the *Endowed Chair in Diabetes Research*; **Ellen M. Gravallesse, MD**, the *Myles J. McDonough Chair in Rheumatology*; and **Catarina I. Kiefe, MD, PhD**, the *Melvin S. and Sandra L. Cutler Chair in Biomedical Research*; Chancellor Michael F. Collins.





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NEWS BRIEFS

■ **Thomas G. Fazio, PhD, was recognized as a rising scientific star by President Obama** with a Presidential Early Career Award for Scientists and Engineers. This is the highest honor bestowed by the U.S. government on outstanding scientists and engineers in the early phases of their research careers. Dr. Fazio, assistant professor of molecular medicine, was one of 102 scientists and engineers selected for this year's award.

■ **Steven Roach, MBA, became president and CEO of Marlborough Hospital on November 1, 2013.** He previously served as CEO of Nashoba Valley Medical Center in Ayer, Mass., and as chief financial officer and chief operating officer there, prior to his appointment as CEO in 2006.

■ **UMMS immunologist Katherine Luzuriaga, MD, was named to the list of Foreign Policy's 100 Leading Global Thinkers of 2013 for "bringing the world closer to a cure for HIV."** Dr. Luzuriaga, professor of molecular medicine, pediatrics and medicine, and an internationally recognized HIV scientist, shares the honor with colleagues Hannah Gay, MD, a pediatrician at the University of Mississippi Medical Center,

and Deborah Persaud, MD, a virologist at Johns Hopkins Children's Center. They are credited with the first documented "functional" cure of a baby with HIV.

■ **A new support group is being offered for children who suffer from irritable bowel disorders.** Made possible by the staff of the Pediatric Gastroenterology Department and the parent of a child with Crohn's disease, along with the Crohn's and Colitis Foundation of America, the program provides an outlet for kids, parents and siblings to share, talk and help each other with the challenges of having these diseases. Sessions are held the third Thursday of the month from 6:30 to 7:30 p.m. in the Stress Reduction Room in Benedict 2 of UMass Memorial's University Campus. For more information, call 508-395-2278.

■ **UMass Memorial now offers a new option for patients with primary and metastatic unresectable liver tumors: selective internal radiation therapy (SIRT).** A two-step therapy, radioactive microsphere (Yttrium-90) embolization is a minimally invasive procedure that delivers high local radiation doses to liver tumors and offers survival benefits at least as good as other available arterial directed locoregional therapies,

with fewer side effects. SIRT requires a multidisciplinary approach with collaboration of interventional radiology, radiation safety, medical oncology, nuclear medicine, hepatology, gastroenterology, surgery and the Cancer Center of Excellence. For more information, contact Interventional Radiology at 508-334-8006.

■ **UMass Medical School scientists Jeremy Luban, MD, and Trudy Morrison, PhD, have been elected fellows of the American Academy of Microbiology (AAM) for their scientific achievement and original contributions to the field of microbiology.** Elected in a highly selective peer-review process, they join more than 2,700 fellows of the AAM, which is the honorific leadership group within the American Society for Microbiology, the world's oldest and largest life sciences organization.

■ **UMass Memorial at Southborough has added pediatric hematology/oncology to its list of high quality specialty services for children.** Board-certified pediatric hematologists/oncologists Neil Grossman, MD, and Naheed Usmani, MD, now offer consultations at the Southborough site, located at 28 Newton Street. To make an appointment, call 855-UMASS-MD (855-862-7763).

■ **Jay Himmelstein, MD, MPH, was presented with the Harriet Hardy Award for lifetime achievement from the New England College of Occupational and Environmental Medicine.** The award was given to Dr. Himmelstein, professor of family medicine & community health and chief health policy strategist for Commonwealth Medicine's Center for Health Policy and Research, during the group's annual conference, held in collaboration with the Massachusetts Association of Occupational Health Nurses.

■ **The UMass Memorial Cancer Center at Marlborough Hospital is now fully open.** All oncology patients—both radiation and infusion/chemotherapy patients—are being seen at the new center. For more information, visit www.qualitycareandhope.org. For appointments, call 508-486-6700.

■ **UMass Memorial patients and referring physicians can now schedule an appointment with one easy call to 855-UMASS-MD (toll free).**

