

## Medical Center Offers Ample Resources for Referring Physicians

As a primary care physician, I am delighted to be associated with The Ohio State University Medical Center (OSUMC), and it is my pleasure to have been asked to share my perspective with you.

I often recommend OSUMC specialists to other primary care or family practice physicians because I am confident that the care patients receive here is of an extraordinary quality. I know this not only from my own experience, but also because, for the 15th consecutive year, *U.S. News & World Report* has ranked OSUMC as a top Ohio healthcare organization, with seven medical specialties named as among the best in the country. Rehabilitation is ranked among the nation's top 10, and our cancer program - which offers extensive opportunities to enroll patients in clinical trials - is in the top 15.

In addition, OSUMC's commitment to good communication with referring physicians is evidenced by the recent launch of an outpatient electronic medical record (OPEMR). The pilot for this innovation is under way at OSU Rardin

Family Practice Center. Once this is fully deployed and embraced by referring physicians, it will help build collaboration, improve patient safety, facilitate research and improve patient care by providing a medical chart that is integrated with the inpatient record.

Referring physicians not only have access to excellent CME through Ohio State's MedNet 21 program, but they can also teach medical students through our preceptor program. Apart from its intrinsic benefits, this program confers upon participating community physicians a faculty appointment as clinical assistant professor. Referring physicians are key participants in improving people's lives through personalized health care.



Mary Jo Welker, MD

**Mary Jo Welker, MD**

Associate Dean, Primary Care  
Chair, Department of Family Medicine  
Executive Director, OSU Primary Care Network

## Studies Lead to Advances in Wound Healing

When a wound does not heal, multiple factors could underlie the problem, according to the executive director of Ohio State's Comprehensive Wound Center.

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Topical oxygen therapy device with an oxygen concentrator

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"When any wound happens, whether by surgery, trauma or simply pressure sore, blood vessels are disrupted, with constriction reducing available oxygen to the wound," says Chandan Sen, PhD. "As we all know, oxygen is essential to good wound healing. When a wound is poorly vascularized, healing is compromised.

"Where patients suffer from systemic issues such as hypertension, diabetes or hyperlipidemia – as seen in obesity – vascular health and oxygenation of wound tissue can be severely compromised. Furthermore, disease of the blood vessels is commonly found in patients with problem wounds," Sen says.

"In the past three to five years," he adds, "we have gained a better understanding of redox signaling, wherein wound-related cells utilize oxygen to make low amounts of hydrogen peroxide, which supports new blood vessel development, collagen synthesis and maturation, and several other processes that could support wound healing."

Sen and colleagues are involved in a number of National Institutes of Health-funded studies examining the role of oxygen and its products in wound healing. One investigation examines the efficacy of an "oxygen boot" that provides oxygen therapy in a home setting.

"Through our translational research at Ohio State, we are finding that we can increase the oxygen in superficial wound tissue through a non-invasive procedure using medical devices that cover the wound and deliver oxygen," he explains. Translational research moves basic science findings from the laboratory to clinical care.

"Interestingly," Sen says, "several different approaches to topically oxygenate wounds are pointing in the same

direction to demonstrate that topical oxygenation approaches deserve further investigation.

"Hyperbaric oxygen (HBO) therapy clearly has merit in addressing certain wound types.

In my opinion, HBO therapy has room for further improvement along the lines of personalized medicine where physicians would prescribe a target wound oxygen level and the HBO treatment approach would be customized to achieve that goal for a given patient," he adds. "However, many patients may not have access to HBO treatment – that's why approaches to topically oxygenate wounds are particularly exciting for doctors who are in rural areas or in a field setting (e.g., war) without access to HBO infrastructure. As a note of caution, like any other therapy, topical oxygen treatment may not benefit all types of wounds."

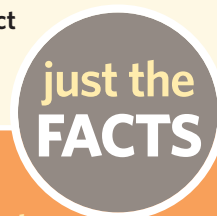
Sen's laboratory has developed a method of capturing small blood vessels from wound tissue using laser technology. The tissue provides genetic material that has been used by his laboratory for genomic screening. Blood vessels from healing and non-healing patients can now be compared. Results from blood vessels in their actual disease state may provide insight in treating not only wounds but also cancer-related vascular complications.

"We owe great thanks to the patients and physicians who contribute to research in the clinics," Sen says.



Chandan Sen, PhD

**For more information or to contact Dr. Sen, call (800) 293-5123.**



## Wound Healing CME Available

The OSU Center for Continuing Medical Education, in cooperation with the OSU Comprehensive Wound Center, will sponsor "Wound Care and Hyperbaric Update 2008" from 8 a.m.-5 p.m. on Saturday, April 19. Adrian Barbul, MD, president of the Wound Healing Society, will speak. Participants will gain a better understanding of why certain wounds fail to heal and when is the appropriate time to refer such cases to a wound-healing specialist. The program, designated for eight AMA PRA Category 1 Credits™, will take place at The Hilton Columbus at Easton Towne Center.

To register or get more information, visit <http://ccme.osu.edu> or call Amy Ehrlich at (614) 293-9326. For hotel reservations, call 1-800-HILTONS and mention the program.

## Comprehensive Wound Center Referrals

Every month, Ohio State's Comprehensive Wound Center receives about 1,200 visits from patients with chronic, non-healing wounds who seek advanced research-based care. The Center is located at University Hospital East as well as at the Martha Morehouse Medical Plaza on Kenny Road in Columbus. Chandan Sen, PhD, directs the program with highly recognized wound-care physicians such as Richard Schlanger, MD, PhD; clinical scientists such as Gayle Gordillo, MD; and genomic experts such as Sashwati Roy, PhD.

To refer a patient, call (614) 293-4811.



From The Ohio State University Medical Center

# news briefs

## New Technique Alleviates Pain in Ortho Patients

Anesthesiologists at The Ohio State University Medical Center are using a new ultrasound procedure to anesthetize certain nerves and provide pain relief to patients before, during and after orthopedic surgery. "Our goal is to reduce and, in many cases, eliminate post-operative pain using these techniques," says Ohio State anesthesiologist Fernando Arbona, MD. Physicians are using ultrasound to help guide a needle to key nerves that are then numbed for surgical procedures in the arms, knees, shoulders or hips. These areas can be anesthetized before and after surgery, and patients can remain pain-free for more than 24 hours in most cases. A small catheter inserted next to the nerves can infuse numbing medicine for up to three days following surgery. In the past, anesthesiologists used a needle that sent small electric currents to locate the nerves. This technique sometimes required more needle passes, resulting in more discomfort for the patient.

For more information or to contact Dr. Arbona, call (800) 293-5123.

## Video Games Transport Rehab Patients to Links, Ball Parks

Rehabilitation patients at The Ohio State University Medical Center are golfing and bowling their way back to health through therapists' innovative use of a video game system to supplement prescribed exercises. The system helps patients work on visual and cognitive skills, problem



solving, balance, coordination, and upper- and lower-body strength and endurance. "The games can be more motivating than standard exercises," says Robbie Winget, a rehab occupational therapist overseeing use of the system at Ohio State Rehabilitation Services at

Dodd Hall. "But this does not replace conventional therapy. It's one more way to meet specific goals associated with therapy." Inpatients typically work with the video game system about 30 minutes per day, two to three times per week. Generally they undergo three hours of therapy each day. Winget says the games include golf, bowling, tennis and baseball. System sensors monitor patients' movements while they play the games using motions associated with the sports, such as swinging a golf club or hitting a baseball.

For more information, call (800) 293-5123.

## Palliative Care Program Named 'Higher Performer'

The Ohio State University's James Cancer Hospital and Solove Research Institute was designated one of only two "higher performers" in palliative care among 44 nationwide participants in the University HealthSystem Consortium's Palliative Care 2007 Benchmarking Project. The James' interdisciplinary Pain and Palliative Medicine Program provides symptom management, advance-care planning and psychosocial and spiritual support for patients with advanced disease or serious illness and their families. "We play a significant role in providing complete care for cancer patients," says Robert Taylor, MD, medical director of the Pain and Palliative Medicine Program. "Our goal is to enhance the patient's quality of life by maximizing physical comfort, preventing or alleviating suffering, and providing psychological and spiritual support." The consortium searched for the best practices to support effective patient management, use of resources, and clinical and financial outcomes.

For more information or to contact Dr. Taylor, call (800) 293-5066.



Robert Taylor, MD

## Signature Program Update: Cancer

The Ohio State University has six Signature Programs that provide patient care and support based on each individual's unique biology, behavior and environment. One such program - cancer - is realized through Ohio State's Comprehensive Cancer Center - James Cancer Hospital and Solove Research Institute (OSUCCC-James), one of only 39 Comprehensive Cancer Centers in the country as designated by the National Cancer Institute (NCI).

Patient care services at The James - a dedicated, state-of-the-art facility for adult cancer inpatient and outpatient care - include treatment for hematologic malignancies, surgical, gynecologic, orthopedic, neurologic, head/neck and urologic oncology, as well as palliative care and radiation medicine.

More than 265 scientists representing 14 of the 18 colleges at Ohio State are working collaboratively to advance understanding and treatment of cancer, including cancer control, experimental therapeutics,

immunology, molecular biology and cancer genetics, molecular carcinogenesis and chemoprevention, pediatric oncology and viral oncogenesis.

As a result, the OSUCCC-James has extensive expertise in conducting early-phase clinical trials, thanks to a focus on translational research coupled with an NCI-funded Phase I and Phase II program. Referring physicians will find currently accruing clinical trials at <http://www.jamesline.com/trials/>.

Coupling its strengths in translational research, cancer genetics and prevention/control with the unique nature of The James, the hospital is at the forefront of developing individualized therapeutic approaches to cancer care and treatment, the ultimate goal of which is to improve patient outcomes. One example is the innovative use of PET/CT in cancer treatment, as described below.

### Personalized Care Pays Off For Elderly Cancer Patient

Two decades ago, Dominic Michael Augustine retired after 31 years as a postal carrier. Less than a year later, his plans for a busy retirement were brought up short by a diagnosis of colon cancer.

"I don't remember much of Christmas 1987, when I had surgery to remove a tumor, but I do remember not being able to eat some of my favorite holiday foods," Augustine recalls.

After two years of remission, his tumor returned, and subsequent surgery resulted in a permanent colostomy. A 24-day regimen of radiation treatment was followed by a five-month course of continuous low-dose chemotherapy, resulting in subsequent removal of Augustine's bladder and prostate. In 1993, cancer of the lymph nodes and rectum required additional surgery.

"After that I was good for the next 10 years before I came in for a checkup to make sure I was good to go to Florida for vacation. I showed Dr. Edward Martin a lump under my arm and he did a needle biopsy, which told us before I left his office that I had non-Hodgkin's lymphoma," he says.

Augustine credits the faith he and his wife (Helen) of 54 years share, his good attitude and humor, and the personalized care he receives at Ohio State for keeping him alive.

"I've always said to my doctors at OSU that I am game for whatever they have," he insists. "That's why, when my wife noticed bumps in my leg last August, I was glad to have the new PET/CT scan that Dr. Martin suggested."

PET/CT, a "hybrid" technology created through the combination of positron emission tomography (PET) and computed tomography (CT), gives physicians a quantifiable, noninvasive assessment of tumor characteristics and biological activity. Involved in Augustine's PET/CT care at Ohio State were Nathan Hall, MD, PhD, of the Department of Radiology, and Radiology Department Chair Michael Knopp, MD, PhD.

Augustine's PET/CT revealed cancerous nodes in his right leg that were surgically removed. Because he underwent a second PET/CT scan that confirmed all malignant cells had been removed, he was spared chemotherapy and radiation.

Today, the great-grandfather of two is looking forward to welcoming the oldest of his four grandchildren - who was only 10 years old when Augustine's cancer odyssey began - home from a tour of duty in Iraq.

"Some people say I'm like the Energizer Bunny," he chuckles. "All I know is that I'm real grateful that OSU has been there for me and Helen through all of this."



From The Ohio State University Medical Center

# research highlights

## NCI Awards \$17 Million to Ohio State Cancer Scientists

The National Cancer Institute has awarded grants totaling \$17 million to two Ohio State University cancer researchers working at opposite ends of the cancer-treatment spectrum. Michael Caligiuri, MD, director of Ohio State's Comprehensive Cancer Center (OSUCCC), leads teams of scientists who are harnessing immune cells to treat difficult tumors. A. Douglas Kinghorn, PhD, an OSUCCC member and a professor in the College of Pharmacy, leads work to discover anticancer agents of diverse natural origin.



Michael Caligiuri, MD

Caligiuri's grant is for \$10 million over five years to study the use of certain human immune cells combined with cutting-edge drugs for the treatment of leukemia and other cancers. This is a renewal of an NCI grant-funded study that began in 2002. Kinghorn's grant is for \$7 million over five years to collect and sample tropical rainforest plants, cyanobacteria and fungi for anticancer compounds that may lead to new chemotherapy agents, particularly for currently incurable tumors.

**For more information or to contact Drs. Caligiuri and Kinghorn, call (800) 293-5066.**



A. Douglas Kinghorn, PhD

## Some Antipsychotic Drugs May be Missing Their Mark

Drugs that treat depression, schizophrenia and other psychotic conditions, and that target a particular protein on brain cells, might not trigger the most appropriate response in those cells, new research suggests. The study by researchers at The Ohio State University Medical Center examined the serotonin 2A receptor, a protein on brain cells sensitive to the neurotransmitter serotonin. Researchers examined early chemical events inside neurons when the

2A receptor is stimulated by serotonin and a synthetic hallucinogenic agent thought to mimic serotonin. Published online in *Proceedings of the National Academy of Sciences*, the findings show that, although both compounds combine with and activate this receptor, they trigger different chemical pathways inside the neuron. "This insight into how serotonin and a hallucinogenic drug affect this serotonin receptor could lead to changes in how new drugs are screened and developed for depression, schizophrenia and other neuropsychiatric disorders," says study leader Laura Bohn, PhD.

**For more information or to contact Dr. Bohn, call (800) 293-5123.**

## Stem Cell Transplant Increases Oxygen in Damaged Heart

Scientists at The Ohio State University Medical Center have determined that stem cells transplanted into a damaged heart can increase oxygen at the site of injury, suggesting that such transplants could be used as therapy after heart attacks and for other diseases characterized by lack of oxygen.

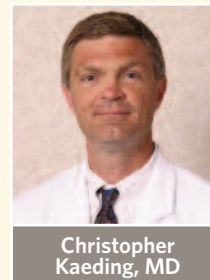
The study results mark the first noninvasive measurements of oxygen concentration in a beating heart after a stem-cell transplant through the use of electron paramagnetic resonance (EPR) imaging. EPR technology allowed researchers to monitor oxygen concentration in the treated animal hearts for four weeks, during which oxygen levels in the treated area increased, scarring (myocardial infarction) was reduced and cardiac function improved. The study was published in the October 2007 *American Journal of Physiology - Heart and Circulatory Physiology*. Periannan Kuppusamy, PhD, director of the Center for Biomedical EPR Spectroscopy and Imaging at Ohio State, was senior author.

**For more information or to contact Dr. Kuppusamy, call (800) 293-5123.**



Periannan Kuppusamy, PhD

## Orthopedics Specialists Meeting Challenge of Aging Population



Christopher Kaeding, MD

“There is no question that the incidence of orthopedic problems will continue to climb as the population ages,” says Christopher Kaeding, MD, interim chair of the Department of Orthopaedics at The Ohio State University Medical Center (OSUMC).

“In response, OSUMC is committed to dynamic growth in orthopedic and related services. In the past two years, we have doubled the number of specialists on board and, because we expect to have more than 20 available by the end of this summer, access for patients of referring physicians will be greatly enhanced,” adds Kaeding, who, as director of the Division of Sports Medicine, also is head team physician for the Ohio State Buckeyes football team.

Along with general orthopedics, sub-specialists are available at OSUMC in musculoskeletal oncology, sports medicine and trauma, as well as upper extremity and hand, foot and ankle, and spine.

In addition to providing personalized care for patients and providing consultation to referring physicians, the Department is active in a number of basic science and clinical research pursuits. These include a large multi-institutional prospective study of functional outcomes following anterior cruciate ligament reconstruction; biomechanics of the lumbar spine during industrial tasks to understand etiology and prevention of low back pain; and motion analysis techniques to analyze the causes and measure the effectiveness of treatment for sports medicine injuries.

**For more information or to contact Dr. Kaeding, call (800) 293-5123.**

## Providing Less Invasive Hip Pain Treatment

“Until approximately 10 years ago, patients younger than 50 who experienced chronic hip pain were said to be too young for a total hip replacement and were treated for pain management,” says Tom Ellis, MD, associate professor and vice chair of The Ohio State University Department of Orthopaedics. “Thanks to innovations developed by Dr. Reinhold Ganz at the University of Bern in Bern, Switzerland, the understanding of the pathogenesis of – and how to best treat – hip pain in younger patients has greatly evolved.”

Ellis, who came to Ohio State in 2007 from Vanderbilt University Medical School, trained under Ganz in Europe after completing a total joint replacement fellowship at the Anderson Orthopedic Research Institute in Alexandria, Va., and an orthopedic trauma fellowship at Henepin County Medical Center in Minneapolis, Minn. He earned his MD at Vanderbilt.

Ellis’ training allows him to perform arthroscopic labral repair, femoral neck osteoplasty, tendon lengthening and loose body removal – all of which historically were achieved through large, open incisions with consequent morbidity and long recovery periods.

“Chronic hip pain may or may not be associated with a traumatic injury,” Ellis says. “In fact, in most cases the pain develops insidiously without any antecedent trauma. Most hip arthroscopy candidates suffer from femoroacetabular impingement, and now that we have a better understanding of this condition, we can successfully treat it with arthroscopic surgery.”

Ellis, who limits his practice to patients under 50, also performs pelvic osteotomy for hip dysplasia and – where indicated – total hip replacement or hip resurfacing. “Although today’s generation of total hip replacements is predicted to last 20 to 25 years, we still prefer to avoid that in younger patients,” he notes.

**For more information or to contact Dr. Ellis, call (800) 293-5123.**

*(See related orthopedics story on page A-7.)*



Tom Ellis, MD

# new faces



**Erik Monson, DPM**

**Specialty:**  
Podiatry

**Clinical Interests:**  
Foot and ankle surgery, sports injuries, plantar fasciitis, wound care

**Residency:**  
The Ohio State University Medical Center



**Kristin Coller, MD**

**Specialty:**  
Palliative Medicine

**Clinical Interests:**  
Pain and symptom management in patients with life-limiting disease

**Residency:**  
Vanderbilt University Medical Center

**Fellowship:**  
University of Kansas Medical Center, Kansas City Hospice and Palliative Care



**Purvi Panchal, MD**

**Specialty:**  
Gastroenterology

**Clinical Interests:**  
Esophageal disorders and dysphagia, inflammatory bowel disease, gastrointestinal malignancies

**Residency:**  
University of Maryland Medical Center

**Fellowship:**  
University of Florida

To contact any of these physicians, call 1-800-293-5123.

## Carpal Tunnel Study Pursued

**“The most common predisposing factor in carpal tunnel syndrome is diabetes,” says Christopher Litts, MD, director of Hand Surgery at OSUMC.**

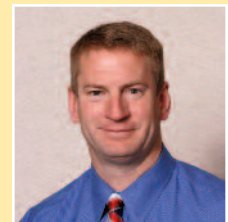
“There is debate within the scientific community over how carpal tunnel syndrome is related to occupation,” Litts says. “Several studies have failed to show a direct relationship between occupation and risk for development of the disease. The risk factors that have been identified in the literature for development of carpal tunnel syndrome include diabetes, hypothyroidism and obesity.”

Litts and colleagues have applied to the National Institutes of Health to fund a study that will create a model of work-induced carpal tunnel in diabetic subjects.

“Today, carpal tunnel surgery is the most commonly performed surgery in the United States,” Litts adds.

Besides caring for patients with carpal tunnel, Litts and his colleagues – all of whom are fellowship trained—also provide consultation and/or care for patients with nerve injuries, trigger finger, ganglion cysts, congenital hand anomalies, elbow problems, upper extremity trauma and arthritis of the upper extremity. A number of specialty clinics, including the newest for brachial plexus injuries, also are available.

**For more information or to contact Dr. Litts, call (800) 293-5123.**



**Christopher Litts, MD**