

RECOGNITIONS

Twenty-three Surgery specialists named “Best Doctors in America”

Twenty-three clinicians in the Department of Surgery at The Ohio State University Medical Center have been named among the “Best Doctors in America” for 2007.

Best Doctors in America, an independent physician referral service that selects doctors through peer review, is considered one of the most recognized and credible guides for people selecting a physician. Only physicians who earn the consensus

support of their peers are included on the list.

Dr. E. Christopher Ellison, the Robert M. Zollinger professor and chairman of surgery, associate vice president for health sciences, and vice dean of clinical affairs, says “The listing of so many Department of Surgery physicians is a reflection of the outstanding clinical care our faculty provide to their patients.”

Department of Surgery faculty members included on the list are:

- **Dr. Mark W. Arnold**, professor of



Ellison

clinical surgery in the Division of General and Gastrointestinal Surgery and vice chairman for surgical education in the Department of Surgery.

- **Dr. Gail E. Besner**, professor of surgery in the Division of Pediatric Surgery.
- **Dr. Ginny L. Bumgardner**, professor of surgery in the Division of Transplantation and associate dean for research education in the College of Medicine.
- **Dr. Donna A. Caniano**, the H. William Clatworthy Jr. professor of surgery and chief of the Division of Pediatric Surgery.
- **Dr. William E. Carson, III**, associate professor of surgery in the Division of Surgical Oncology.
- **Dr. Elmahdi A. Elkhmmas**,

associate professor of clinical surgery in the Division of Transplantation.

- **Dr. E. Christopher Ellison**, the Robert M. Zollinger professor and chairman of surgery.

- **Dr. William B. Farrar**, the Arthur G. James and Mildred C. James/Richard J.

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- **Dr. Ronald M. Ferguson**, professor of surgery in the Division of Transplantation and executive director of the Comprehensive Transplant Center.
- **Dr. Mark Galantowicz**, associate professor of clinical surgery in the Division of Cardiothoracic Surgery.
- **Dr. Mitchell L. Henry**, professor of surgery, chief of the Division of Transplantation, and deputy director of the Comprehensive Transplant Center.
- **Dr. Denis R. King**, clinical associate professor of surgery in the Division of Pediatric Surgery.
- **Dr. W. Scott Melvin**, professor of surgery, chief of the Division of General and Gastrointestinal Surgery, and director

(See “Best Doctors” on page 2)

GENERAL VASCULAR SURGERY

Specialist examining pacemaker-like device to control hypertension

A specialist in the Department of Surgery at The Ohio State University Medical Center is participating in a national, multicenter clinical trial to determine the efficacy and safety of a new pacemaker-like device to control hypertension, or high blood pressure, in

patients resistant to treatment with antihypertensive drugs.

The device, the Rheos Baroreflex Hypertension Therapy System, is a program-mable, implant-able pulse generator designed to electrically activate the carotid baroreceptors, specialized neurons within the left and right carotid arteries, in the neck, that monitor blood pressure.

When the baroreceptors are activated, they send signals to the brain that



Starr

are interpreted as an increase in blood pressure. The brain responds to the perceived increase by dilating blood vessels, reducing the heart rate, and causing the kidneys to release fluid, all of which contribute to a decrease in blood pressure.

Dr. Jean E. Starr, assistant professor of clinical surgery in the Division of General Vascular Surgery and director of endovascular services at Ohio State's Medical Center, is principal investigator for the clinical study at Ohio State.

"This is a unique way of allowing your own body to control its blood pressure naturally," Starr says. "Because poorly-controlled blood pressure leads to serious complications, including heart attack, kidney failure, and stroke, we need another option for patients who are resistant to antihypertension medications."

Dr. Randell Wexler, assistant professor of clinical family medicine, is co-investigator for the study at OSU.

The study, a randomized, blinded 12-

month trial, is for pre-market approval of the device by the Food and Drug Administration. Up to 300 patients will participate in the study at up to 50 medical centers.

Patients must have a systolic blood pressure of 160 mmHg, or greater, and hypertension that is resistant to at least three antihypertensive drugs, one of which is a diuretic.

In the implantation procedure, the battery-powered pulse generator is inserted under the skin near the collar-bone. Two electric leads extend from the generator to the left and right carotid arteries. Experts say the procedure is somewhat similar to implantation of a cardiac pacemaker, but more involved.

According to the American Heart Association, one in three adults in the United States has high blood pressure, which is the primary modifiable risk factor for stroke. The condition also contributes to heart attacks, heart failure, kidney failure, and atherosclerosis, or fatty buildups in arteries. In some cases, high blood pressure can cause blindness.

Experts say that each increase of 20 mmHg in systolic blood pressure or 10 mmHg in diastolic blood pressure above normal is associated with a twofold increase in death rates from stroke, coronary heart disease, and other vascular conditions. ❖

Best Doctors

From page 1

of the Center for Minimally Invasive Surgery.

• **Dr. Peter Muscarella, II**, associate professor of surgery in the Division of General and Gastrointestinal Surgery.

• **Dr. Ronald P. Pelletier**, associate professor of surgery in the Division of Transplantation.

• **Dr. Alistair B. M. Phillips**, assistant professor of clinical surgery in the

Division of Cardiothoracic Surgery.

• **Dr. Patrick Ross, Jr.**, associate professor of clinical surgery in the Division of Cardiothoracic Surgery.

• **Dr. Robert L. Ruberg**, professor of surgery in the Division of Plastic Surgery and senior vice chairman for academic and administrative affairs in the Department of Surgery.

• **Dr. William L. Smead**, the Luther M. Keith professor of surgery in the Division of General Vascular Surgery.

• **Dr. Wiley W. "Chip" Souba, Jr.**,

professor of surgery in the Division of Surgical Oncology.

• **Dr. Steven M. Steinberg**, professor of surgery and chief of the Division of Critical Care, Trauma, and Burn and vice chairman for clinical affairs in the Department of Surgery.

• **Dr. Steven Teich**, clinical assistant professor of surgery in the Division of Pediatric Surgery.

• **Dr. Michael J. Walker**, associate professor of surgery in the Division of Surgical Oncology. ❖

GENERAL VASCULAR SURGERY

Scientist identifies key element in heart cell death

A scientist in the Department of Surgery at The Ohio State University Medical Center has identified a key element in the process that causes the death of heart cells after ischemia and reperfusion, or blockage and restoration of blood flow.

Reperfusion injury occurs when patients with blocked arteries receive medical or surgical treatments to restore blood flow. The resulting restoration of blood, along with the oxygen it carries, causes tissue damage and weakens the heart's function.

Pedram Ghafourifar, Pharm.D., Ph.D., associate professor of surgery and director of basic science research in the Division of General Vascular Surgery, and his colleagues have identified cardiac cell mitochondria as the source of the signal that causes cell death following hypoxia, or a shortage of oxygen, and subsequent reoxygenation. Cardiac cell mitochondria are the principal energy source in the cells.

Their study, the results of which were published in the October 2007 issue of the *Journal of Molecular and Cellular Cardiology*, shows for the first time that heart mitochondria respond to varying oxygen concentrations during hypoxia and reoxygenation. The importance of Ghafourifar's findings was highlighted by



Ghafourifar

Dr. Louis Ignarro, the 1998 Nobel laureate, in an editorial that preceded Ghafourifar's paper.

The researchers hope that identifying the origin of the signal that causes cell death will help them find a way to stop the signal and reduce the damage associated with restoring blood flow to the heart.

"This form of cardiac cell death is a major medical and health issue," Ghafourifar says. "The patient has severe pain from the loss of blood flow and oxygen to the heart, so we cannot do anything other than clear that artery to restore the blood and oxygen. But when that is done, cardiac cells start to die. It's a paradox. The mitochondria have been suspected in this process, but to date, we haven't known for sure."

Ghafourifar's lab developed a technique allowing researchers to investigate isolated mitochondria in real time during reoxygenation. Using chemical probes and this novel technique, called dual wavelength excitation spectrophoto-fluorometry, they observed that as soon as the hypoxic mitochondria were subjected to reoxygenation, calcium increased in the mitochondria.

"Calcium levels went up like never before, which is unusual, because mitochondria typically are able to tightly

maintain a low level of calcium," he says.

Next, the calcium stimulated an enzyme that generated toxic levels of the free radical nitric oxide in the mitochondria. Then the excess of nitric oxide in mitochondria led to the release of a mitochondrial protein, which resulted in

"This form of cardiac cell death is a major medical and health issue."

cell death.

The enzyme in this process is called mitochondrial nitric oxide synthase, which was discovered and reported by Ghafourifar's lab in 1997. Because researchers don't know the cause of the calcium increase during reoxygenation of the heart, Ghafourifar and his colleagues have focused on the enzyme.

"The next immediate step is finding how we can inhibit this enzyme, so it doesn't generate excess nitric oxide during the reoxygenation phase," he says. "We're developing experimental drugs that can be delivered at the time of reperfusion or just before. Some seem to be successful in selectively inhibiting the enzyme."

The identification of the enzyme as a trigger of cell death could influence a wide range of therapeutic options, Ghafourifar says, for disease processes characterized by cell death, and for others in which cells refuse to die when they should.

"Cell death is involved in a variety of diseases that don't seem to be related," he says. "In cancer, cells do not die. In Parkinson's and Alzheimer's disease, cells die earlier than we want them to. If we figure out how cell death happens, we can put up a fight against a number of diseases." ❖

COMPREHENSIVE WOUND CENTER

Investigator describes cell process that regulates wound healing

A scientist in the Department of Surgery at The Ohio State University Medical Center has described a cell process that regulates wound healing, in research that could lead to new therapeutic approaches to wound healing and other conditions.

The findings are the first to demonstrate that redox signaling, a process in which oxygen derivatives act as messengers in biological systems, is regulated by microRNA (miRNA), which are molecules that regulate gene expression.

Specifically, the research shows that miRNA can be regulated in certain cells of the blood vessel, influencing the cells to regenerate tissue needed in wound healing.

The findings were published online Feb. 7 in *Arteriosclerosis, Thrombosis,*

and *Vascular Biology*, a journal of the American Heart Association.

“Encouraging the growth of blood vessels promotes tissue repair, a critical step in wound healing,” says Chandan K. Sen, Ph.D., professor of surgery, principal investigator, and co-author of the study. “This research provides the rationale to use miRNA-based therapeutic approaches to stimulate blood supply to wound healing.”

The study expands on Sen’s earlier work, which found that wound-related



Sen

cells generate small amounts of reactive oxygen products, including hydrogen peroxide, which is required for wound healing.

In addition to wound healing, redox signaling is important in a wide variety of disorders, including age-related conditions, several forms of cancer, cardiovascular disease, and neurodegenerative conditions.

“The observation that microRNA regulates redox signaling in human cells has wider implications that should prove to be helpful in addressing numerous other disease conditions as well,” says Sen, director of the Comprehensive Wound Center, associate dean for translational and applied research in the College of Medicine, and vice chairman for research in the Department of Surgery.

Co-authors of the study were Shani Goldberg-Shilo, Ph.D., a postdoctoral researcher in the Center for Minimally Invasive Surgery; Sashwati Roy, Ph.D., assistant professor of surgery; and Savita Khanna, Ph.D., research scientist in surgery. ♦

PEDIATRIC SURGERY

Fabia named Physician of Year

Dr. Renata B. Fabia, clinical assistant professor of surgery in the Division of Pediatric Surgery at The Ohio State University Medical Center and associate burn director at Nationwide Children’s Hospital, recently was named the 2007 Physician of the Year at Children’s Hospital.

She was selected to receive the award by the staff at Children’s, who recognized her for providing exemplary care to patients and their families and serving as an outstanding role model.

“This is the greatest compliment I could ever dream of,” Fabia says. “I am very lucky to work with a group of wonderful people who, in addition to being great caregivers, are outstanding supporters and friends.”

Fabia received her medical degree at



Fabia

the Silesian University School of Medicine, in Katowice, Poland, and a Ph.D. degree at Lund University, in Lund, Sweden. She completed her residency training in general surgery in the Department of Surgery at Ohio State’s Medical Center.

In 2003, she joined the Surgery faculty at Ohio State and was appointed a surgical hospitalist at Nationwide Children’s Hospital. At Children’s, in addition to caring for general surgery patients, she established a weekly follow-up clinic for children and adolescents with burns, assumed daily management of inpatients with traumatic injuries, and undertook performance of the majority of dialysis access. ♦

APPOINTMENTS

Taylor joins Surgery faculty

A graduate of the training program in the Department of Surgery at The Ohio State University Medical Center has joined the Surgery faculty at Ohio State.

Dr. Anne Taylor, a plastic surgeon in private practice in Columbus, Ohio, in Oct. 2007 began an auxiliary faculty appointment as clinical assistant professor of surgery in the Division of Plastic Surgery.



Taylor

Taylor received her undergraduate degree at Denison University, in Granville, Ohio. She received her medical degree and completed her residency in general and plastic surgery at Ohio State.

In 1996, following her residency training, she entered private plastic surgery practice in Columbus.

A fellow of the American College of Surgeons and a board-certified plastic surgeon, Taylor serves on the boards of directors of the National Endowment for Plastic Surgery, the Ohio Valley Society of Plastic Surgeons, and the Columbus Medical Association. She also serves on the board of trustees of Denison University. Taylor is an active member of the American Society of Plastic Surgeons, the Ohio State Medical Association, and the Plastic Surgery Education Foundation. She has served as a guest examiner for the American Board of Plastic Surgery. ❖



Mark Dickman, director of Surgery Information Systems, was recognized in March for receiving more Bravo Awards than any other staff member at The Ohio State University Medical Center. Above, Dickman (center) poses with Jerry Johnson, Ph.D., administrator of the Department of Surgery, and Amy Hurley, program manager of Faculty and Staff Recognition, who presented a tray of cookies to Dickman during a recognition ceremony in the Department of Surgery. See story below.

RECOGNITIONS

Surgery staff receive Bravo Awards

During the 2007–08 academic year, several staff members in the Department of Surgery at The Ohio State University Medical Center earned multiple awards and gained places on a Medical Center honor roll through the Medical Center’s faculty and staff recognition program.

Mark Dickman, director of Surgery Information Systems, received more Bravo On the Spot Awards than any other staff member at the Medical Center since the program began. At press time, Dickman had received 225 awards.

Kimberly Moorehead, office staff coordinator in the Division of Critical Care, Trauma, and Burn, had received 50 awards. **Maggie Mikesell**, office associ-

ate in the Division of Surgical Oncology, and **Melinda Willis**, office associate in the Division of Cardiothoracic Surgery, each had received 25 awards.

“This is the department’s first recognition of our colleagues who have reached this milestone, and we hope to see many more,” says Maxine Vargas, Surgery human resources administrator.

Bravo On the Spot Awards recognize efforts that contribute to the Medical Center’s six key result areas: (1) status as a workplace of choice, (2) quality, (3) productivity and efficiency, (4) financial performance, (5) service and reputation, and (6) innovation and strategic growth. ❖

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Falcone RE, Satiani B. Physician as hospital chief executive. *Vasc Endovasc Surg* 2008; 42(1):88–94.

Hazey JW, Narula VK, Renton DB, Reavis KM, Paul CM, Hinshaw KE, Muscarella P, Ellison EC, Melvin WS. Natural-orifice transgastric endoscopic peritoneoscopy in humans: initial clinical trial. *Surg Endosc* 2008; 22(1):16–20.

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Zenebe WJ, Nazarewicz RR, Parihar MS, Ghafourifar P. Hypoxia/reoxygenation of isolated rat heart mitochondria causes cytochrome *c* release and oxidative stress; evidence for involvement of mitochondrial nitric oxide synthase. *J Mol Cell Cardiol* 2007; 43:411–419. ❖

PRESENTATIONS

Caniano DA (The M. James Warden – Karl Storz Visiting Professor). Ethical

considerations in prenatal surgical consultation. University of California, Irvine Medical Center, Pediatrics Grand Rounds, Irvine, Calif., Jan. 31, 2008.

Caniano DA (The M. James Warden – Karl Storz Visiting Professor). Surgical ethics: progress and challenge. University of California, Irvine Medical Center, Surgery Grand Rounds, Irvine, Calif., Jan. 31, 2008.

Caniano DA (The M. James Warden – Karl Storz Visiting Professor). Surgical neonatology: the quest for quality. Children’s Hospital of Orange County, Pediatric Grand Rounds, Orange, Calif., Jan. 30, 2008.

Caniano DA (the M. James Warden – Karl Storz Visiting Professor). Surgical neonatology: the quest for quality. Miller Children’s Hospital, Pediatrics Grand Rounds, Long Beach, Calif., Feb. 1, 2008.

El-Assal O, Besner GE. HB-EGF knockout mice have decreased angiogenesis. American Academy of Pediatrics, 2007 National Conference and Exhibition, San Francisco, Calif., Oct. 27–30, 2007.

Henry ML. Fistula first: a surgeon’s perspective. Vascular Access Society of the Americas, VEITH (Vascular and Endovascular Issues, Techniques, and Horizons) Symposium, New York, N.Y., Nov. 14, 2007.

Henry ML. Update on diabetes research: who should be considered for pancreas and islet cell transplantation. The Ohio State University medical Center, Global diabetes Summit, Columbus, Ohio, Dec. 1, 2007.

Henry ML. The use of PTFE: grafts in the fistula first era. Vascular Access Society of the Americas, VEITH (Vascular and Endovascular Issues, Techniques, and Horizons) Symposium, New York, N.Y., Nov. 14, 2007.

Mehta V, Besner GE. HB-EGF promotes eNOS dependent angiogenesis in endothelial cells. Keystone Symposium, Keystone, Colo., Jan. 18, 2008.

Melvin WS (the 19th Annual Ronald

H. Fegelman Memorial Lecturer). New techniques for the treatment of Barrett’s esophagus. Jewish Hospital, Cincinnati, Ohio, Jan. 12, 2008.

Pleister I, Evans J, Vaccaro PS, Satiani B. Natural history of the great saphenous vein stump following endovenous laser therapy. Columbus Surgical Society, 19th Annual Presidential Symposium, Columbus, Ohio, Feb. 16, 2008.

Sandquist MK, Way DP, Patterson AF, Caniano DA, Arnold MW, Nwomeh BC. General surgery versus specialty rotations: a new paradigm in surgery clerkships. Academic Surgical Congress, Third Annual Meeting, Huntington Beach, Calif., Feb. 13–15, 2008.

Satiani B. “After all, tomorrow is another day”: an optimistic view for physicians. Clark County Medical Society, Springfield, Ohio, Jan. 21, 2008.

Zhou Y, Besner GE. Heparin-binding EGF-like growth factor is a potent vasodilator of terminal mesenteric arterioles. Society of University Surgeons, 69th Annual Meeting, Huntington Beach, Calif., Feb. 13, 2008.

Zorko N, Radulescu A, Besner G. Production of a murine model of necrotizing enterocolitis. American Medical Association, Medical Student Section Research Poster Symposium, Honolulu, Hawaii, Nov. 9–10, 2007. ❖

RECOGNITIONS

Dr. Juan A. Crestanello, assistant professor of surgery in the Division of Cardiothoracic Surgery, **Dr. Bradley J. Needleman**, assistant professor of surgery in the Division of General and Gastrointestinal Surgery, **Sashwati Roy, Ph.D.**, assistant professor of surgery in the Division of General and Gastrointestinal Surgery, and **Dr. Patrick S. Vaccaro**, professor of clinical surgery and chief of the Division of General Vascular Surgery,

presented papers at The Ohio State University Medical Center's Global Diabetes Summit, which was held Nov. 29–30, 2007. **Dr. Charles H. Cook**, assistant professor of surgery in the Division of Critical Care, Trauma, and Burn, and **Dr. W. Scott Melvin**, professor of surgery and chief of Division of General and Gastrointestinal Surgery, served as moderators at the event.

Dr. Mitchell L. Henry, professor of surgery, chief of the Division of Transplantation, and deputy director of surgical services of the Comprehensive Transplant Center, last year was elected to a two-year term as secretary of the United Network for Organ Sharing. Also, last year he served as associate examiner of the American Board of Surgery.

Dr. Benedict C. Nwomeh, assistant professor of clinical surgery in the Division of Pediatric Surgery, last year completed the Association for Surgical Education's surgical education research fellowship, a one-year program designed to equip investigators with the skills and knowledge needed to plan, implement, and report research studies in the field of surgical education.

Chandan K. Sen, Ph.D., professor of

surgery and vice chairman for research in the Department of Surgery, served as a delegate on Mayor Michael B. Coleman's business mission to Israel in April. The mission was made to generate business relationships between innovative Israeli and Central Ohio life sciences companies. ❖

ON EXHIBIT

A set of surgical instruments that belonged to **Dr. Robert M. Zollinger**, chairman of the Department of Surgery

from 1946 to 1974, was recently placed on exhibit in Surgery's display case on the third floor of Means Hall. The instruments, a pair of Metzenbaum surgical scissors, were presented to Zollinger in 1970 by the then chief residents in general surgery, **Dr. Michael F. Kaplan**, **Dr. Avram R. Kraft**, **Dr. Paul C. Redmond**, **Dr. Gary M. Richardson**, and **Dr. Thomas T. Vogel**. Dr. Zollinger's son, Dr. Robert M. Zollinger, emeritus professor of surgery at Case Western Reserve University, in Cleveland, Ohio, donated the instruments to the Department of Surgery. ❖

SURGERY TODAY

May 2008 • Vol. 17 • No. 2

Surgery Today is a quarterly electronic publication of the Department of Surgery at The Ohio State University Medical Center. © 2008 Department of Surgery, The Ohio State University Medical Center.

Editor

Darrell Peters
Department of Surgery
341 Means Hall
1654 Upham Drive
Columbus, OH 43210-1250
Telephone: (614) 293-8852
Fax: (614) 293-4063
E-mail: darrell.peters@osumc.edu

MMSP CORNER

Guenterberg, Pleister receive research awards

Two general surgery residents in the Master of Medical Science Program (MMSP) have received awards supporting their research projects.

Dr. Kristan D. Guenterberg was selected by the Division of Hematology and Oncology of the Department of Internal Medicine to receive a T32 fellowship award. The fellowship will support two years of research in the lab of Dr. William E. Carson, III, associate professor of surgery in the Department of Surgery's Division of Surgical Oncology. Guenterberg will examine microRNA as a prognostic marker of cancer progression.

"I would strongly encourage other residents who are interested in research to consider applying for a T32 fellowship," Guenterberg says.

Dr. Irina S. Pleister was selected by the Department of Surgery to receive the James D. King Award, an endowed surgical research grant, for the 2007–2008 academic year. Pleister was selected for her research presentation, "Spinal Cord Ischemia after TAAA Repair: Mechanism of Injury." The award includes \$2,500 for travel to a scientific meeting to present research results.

The James D. King Award honors the memory of Dr. James D. King, a surgeon-scientist who trained at Ohio State and received the first doctoral degree in surgical research ever presented by the University. A gift from King's son, Dr. Richard King, established the endowed fund. ❖



Guenterberg



Pleister

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