



Joseph Ackerman, PET/CT technologist, begins a PET/CT test at Medical Imaging of Fredericksburg.

## Radiologists Interpret PET/CT Images To Detect Cancer, Bone Metastases, Alzheimer's

Radiologists have used PET/CT technology for more than a decade to help referring physicians diagnose and monitor many types of cancer. Recently, local PET/CT capabilities at Medical Imaging of Fredericksburg, a partnership between Mary Washington Healthcare and Radiologic Associates of Fredericksburg (RAF), expanded significantly to include testing for metastatic bone disease and additional cancers, noted Neil B. Green, MD, physician director of nuclear medicine and PET/CT imaging for RAF. More specific testing for Alzheimer's and other neurological conditions should begin within the next year, he added.

*Radiologists Interpret PET/CT Images continued page 2*

## Doctors Bring Hope and Healing to the Underserved

At Radiologic Associates of Fredericksburg (RAF), social responsibility is a core value. In 2010, the physician partners in RAF provided over \$1.7 million of charity care to patients in the greater Fredericksburg area. RAF along with other local healthcare providers also are reaching out worldwide. Two RAF physicians, John J. McLaughlin, MD, and George T. Sofis, MD, have journeyed to different parts of the world to provide consult to global colleagues



Dr. Sofis (left) performs a diagnostic ultrasound test on a patient in Peru.

*Doctors Bring Hope and Healing continued page 3*

## Interventional Care Is Life-Saving in Local Trauma Case



Dr. Gleason of VIVA

When even minor accidents can cause major injuries, the presence of fast, multi-specialty trauma care saves lives. Interventional radiologists play an important role in local trauma team care by performing rapid, minimally invasive procedures, 24/7, for critical injuries of vital organs, pelvic hemorrhages, and peripheral vascular injuries. They collaborate with diagnostic radiologists, trauma surgeons, and emergency medicine specialists to improve patient outcomes in emergency cases.

Case in point: the victim of a minor car accident who was brought in recently to Stafford Hospital. John D. Gleason, MD, interventional radiologist with Virginia Interventional & Vascular Associates (VIVA), received an urgent call about the case from his colleague, Thomas T. Medsker, MD, a diagnostic radiologist with VIVA's parent group, Radiologic Associates of Fredericksburg.

*Life-Saving Trauma Care continued page 3*

## Ultrasound-Guided Thyroid Nodule Biopsy Offers Rapid Results

Speed is essential for communicating critical results. At Virginia Interventional & Vascular Associates (VIVA) — [www.vivassociates.com](http://www.vivassociates.com) — ultrasound-guided thyroid nodule biopsy procedures are scheduled quickly, with results communicated rapidly to referring physicians. R. Donald Doherty Jr., MD, interventional radiologist with VIVA, noted that procedures are performed in office Monday through Friday, with pathology specialists on site to review biopsy samples.

VIVA's interventional radiologists have performed the procedures locally since 1997. They are board-certified, fellowship trained, CAQ-qualified specialists in providing minimally invasive, imaging-guided tests and treatments.

For more information contact VIVA at (540) 654-9118 or email [doherty@rafimaging.com](mailto:doherty@rafimaging.com) cc: [ldonofrio@rafadmin.com](mailto:ldonofrio@rafadmin.com).

## UFE Procedure Relieves Urinary Tract Problems

"In addition to shrinking fibroids, uterine fibroid embolization (UFE) can also improve several kinds of lower urinary tract problems in women that are specifically caused by those fibroids, said researchers at the Society of Interventional Radiology's recent scientific meeting," reported the May 2011 edition of *Radiology Today*.

The study by researchers at Georgetown University Medical Center in Washington, D.C., concluded that UFE can significantly improve a number of lower urinary tract problems related to uterine fibroids, including urinary frequency, urgency and/or retention. The story also noted that previous studies have shown UFE to be a safe and effective treatment for uterine fibroids.

For more information on UFE, contact Virginia Interventional & Vascular Associates at (540) 654-9118 or visit [www.vivassociates.com](http://www.vivassociates.com).

To make suggestions for future stories, contact Irene Valentino at (540) 361-1000 or [ivalentino@rafadmin.com](mailto:ivalentino@rafadmin.com).

## Radiologists Interpret PET/CT Images continued from page 1

Dr. Green is one of seven RAF radiologists who are specially trained in interpreting PET/CT images. They evaluate tests 24/7 that are produced daily by the PET/CT system at Medical Imaging of Fredericksburg, adjacent to Mary Washington Hospital. The PET/CT system serves patients referred by area medical oncologists, surgical oncologists, pulmonologists, general surgeons, gastroenterologists, neurologists, otolaryngologists, and other physicians.

PET, shorthand for positron emission tomography, maps the biochemical processes within the body. CT, or computed tomography, produces anatomical images. Combined, PET/CT delivers a detailed look inside the patient.

"For example, with conventional testing, such as a CT alone, you can assess the size and shape of a lymph node and try to determine if it is cancerous based on that," Dr. Green explained. "With PET, you can inject the patient with a radio-labeled sugar and, if the lymph node absorbs that sugar at a level distinctive in cancer, you can be pretty sure it is a malignant process." PET/CT also enables physicians to detect the spread of cancer and effectiveness of treatments.

Charles L. Maurer, MD, an oncologist with Hematology Oncology Associates of Fredericksburg, said, "I tell patients we use PET/CT like a night vision tool that looks for cancer. It shows areas of bright spots or hot spots where cancer may be. It can be a valuable tool when determining the correct therapy for particular cancers, and for staging of certain cancers. PET can also be used for interim staging when determining a patient's response to treatment."

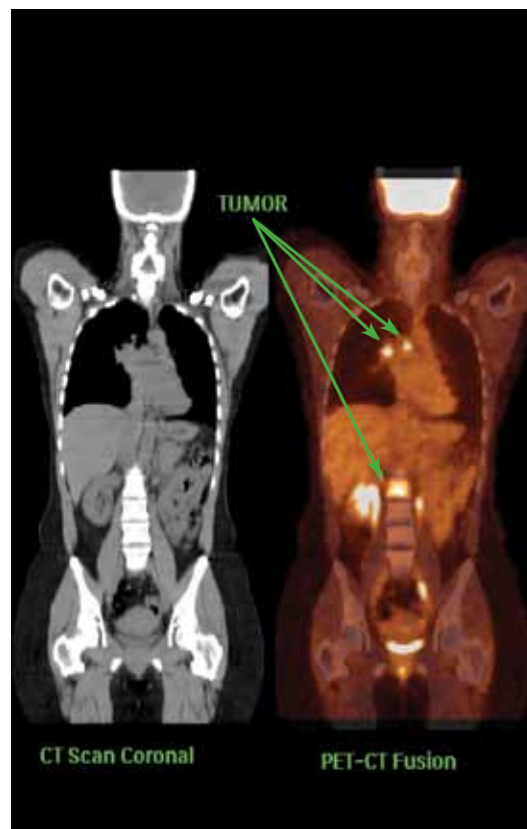
For example, Dr. Maurer finds PET/CT helpful during the initial staging of lung cancers and colorectal cancers, initial staging and restaging of lymphomas (both Hodgkin's and non-Hodgkin's) after treatment, and intermittently for staging of breast cancers.

Many cancers, including lung cancer, colorectal cancer, breast cancer, Hodgkin's lymphoma, non-Hodgkin's lymphoma, esophageal cancer, and melanoma, absorb radio-labeled sugar in a distinctive way. The most commonly used radio-labeled tracer is fluorodeoxyglucose, or 18-FDG. Dr. Green said RAF radiologists also plan to offer PET/CT testing with additional radio-labeled tracers besides 18-FDG within the next year specific for neurological applications, including a more specific detection of Alzheimer's disease than currently exists.

In February, sodium 18-fluoride (NaF) was approved for clinical applications in bone metabolism studies. Dr. Green said RAF radiologists are using NaF as an effective radio tracer for detecting metastatic disease to the bone and certain types of cancers that do not absorb sugar, such as prostate cancer and some breast cancers. PET/CT has advantages over conventional bone scans in appropriate cases.

"When evaluating metastatic disease to the bone, NaF PET is superior to plain nuclear medicine bone scans because the images are higher quality, which allows early and more thorough identification of bone metastases," Dr. Green said. ■

For more information about PET/CT medical imaging studies, contact Neil B. Green, MD, at [green@rafimaging.com](mailto:green@rafimaging.com), contact the PET center directly at (540) 741-4PET, or visit [www.rafimaging.com](http://www.rafimaging.com).



Images of the body of a patient with newly diagnosed breast cancer. PET/CT image on right shows spots in the chest and lumbar spine where the radio-labeled tracer has accumulated, indicating that cancer has spread to these structures.



## Life-Saving Trauma Care continued from page 1

The patient was complaining of intense abdominal pain. Stafford Hospital's emergency department had ordered CT scans, and an alert CT tech, suspecting an abnormality, contacted Dr. Medsker to make the case a high priority. Based on CT scans, Dr. Medsker diagnosed a large laceration in the right kidney and active bleeding in the abdomen—both life-threatening conditions. He immediately notified the patient's emergency department physician and Dr. Gleason so treatment could be coordinated swiftly.

The patient was quickly transferred to the Level II Trauma Center at Stafford's sister facility, Mary Washington Hospital. There, Dr. Gleason performed an embolization that stopped the bleeding. Continuous internal medical images of the patient's groin and abdomen, displayed on a nearby computer screen, helped Dr. Gleason guide the precise movements required for the interventional radiology procedure.

"In a procedure like this, you make a tiny incision in the skin, thread a small catheter from the patient's groin to the renal artery, and place a metal coil in the [affected] artery to block the blood flow. The procedure is similar to tying

off an artery, but without the major surgery or large incision," Dr. Gleason explained.

Interventional radiology treatments offer other advantages over major surgery in appropriate cases. First, they are usually faster procedures for stopping massive bleeding. Second, interventional radiology treatments can sometimes spare vital organs. In the recent trauma case, for example, surgeons would have had to remove the injured kidney, since the lower third was destroyed. Using the embolization procedure, however, the interventional radiologist could preserve two-thirds of the injured kidney.

Interventional radiology procedures also help patients avoid the longer recuperation required after major surgery. In the recent trauma case, the patient was discharged four days after the accident.

"It's not a daily occurrence, but our interventional radiologists perform embolizations and other procedures regularly for local trauma cases," Dr. Gleason said. "Mary Washington Healthcare has a dedicated trauma surgery team [led by Lawrence Roberts, MD, director of trauma services], that knows what services we can provide and



Dr. Gleason (right) discusses case with Stephanie Finley, certified medical assistant.

asks for our help in appropriate cases."

Dr. Roberts noted, "The interventional radiologists' commitment to performing procedures 24/7 for our trauma cases is remarkable, and we are fortunate to have the support of their team. Interventional Radiology responds identically to major Level I trauma centers in both capability and timing. It is truly a significant contribution in the care of the injured patient." ■

For more information, contact John D. Gleason, MD, at [gleason@rafimaging.com](mailto:gleason@rafimaging.com) or R. Donald Doherty Jr., MD, at [doherty@rafimaging.com](mailto:doherty@rafimaging.com), leave a message for them at (540) 654-9118, or visit [www.vivassociates.com](http://www.vivassociates.com).

## Doctors Bring Hope and Healing continued from page 1

and free medical care to those in need.

For the past four years, Dr. McLaughlin has traveled to Asia to train other physicians in interventional radiology. Interventional radiologists perform minimally invasive procedures to diagnose and treat a variety of medical conditions. Dr. McLaughlin's two-week trips are taken solo, using vacation time, and he pays for all expenses. "I fill a suitcase with basic equipment, such as stents and catheters," he notes. "It can be tricky going through customs with medical supplies, especially in a communist country, but so far, no mishaps."



Dr. McLaughlin (right) in a sweltering operating room in Vietnam.

While he was a college student, Dr. McLaughlin was introduced to community health in developing nations. "My father served on the board of a non-profit organization, Los Niños, based in Tijuana, Mexico," he explains. "One summer, at his suggestion, I worked at a clinic in Tijuana. That ignited my interest in medicine—and also in working with the underserved."

To date, Dr. McLaughlin has made four trips, two to Vietnam and one each to India and Sri Lanka. Most of his global connections and trip arrangements are made over the Internet. For example, he met his Indian colleagues by emailing the chairman of the Indian Society of Vascular and Interventional Radiology. He looks also for doctors who are working with the poor and indigent in government hospitals, typically understaffed, where perhaps the greatest contribution can be made.

One day, he hopes to engage his global connections on a larger scale by opening up an interventional radiology center in a developing country.

While Dr. McLaughlin has focused his efforts in Asia, South America has been the stage for Dr. Sofis' charity work. Every two years, he volunteers his expertise as a diagnostic radiologist with the Wilderness Community Church in Spotsylvania, using his vacation time for the trips and paying his own expenses. The church sponsors a mission in Ayacucho, Peru, a village 14,000 feet high in the Andes Mountains, where medical care is in short supply.

Dr. Sofis is part of a 20-member medical team that includes several emergency room physicians from Mary Washington Hospital. The team also has provided services in the Peruvian Amazon, based in the town of Pucallpa. In a 2010 trip, Dr. Sofis used a portable ultrasound and served as a "one-man radiology department." Villagers complaining of everything from back pain to kidney stones were diagnosed on the spot and given treatment.

Word of the team's presence traveled quickly. "We could see as many as 200 people a day," he notes. "Parasites are a huge issue. We do whatever we can to alleviate discomfort."

Along with his trips to Peru, Dr. Sofis has traveled also to South Africa. Recently, he visited Cape Town's Tygerberg Hospital, the country's largest teaching hospital, where he exchanged best practices with international colleagues. In October, he's planning a trip to Haiti.

Sometimes, consultations are life-saving. "Our first day in Pucallpa, a young man was brought to us on a stretcher," Dr. Sofis remembers. "Using the portable ultrasound, I could confirm that he had a ruptured appendix. He was transported to the nearest hospital. Had we not been there to evaluate his condition, he would likely have died of sepsis."

"It's why we became doctors," he concludes. "We want to help people. This is medicine at its best." ■

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Ed Swager, Chief Executive Officer

Radiologic Associates of Fredericksburg (RAF) is the largest provider of medical imaging services in the Fredericksburg, Stafford and Spotsylvania area. RAF's interventional radiology and vascular services group, Virginia Interventional & Vascular Associates (VIVA), performs minimally invasive procedures, vascular lab studies and vascular surgery.

RAF publishes *Imaging Advances* periodically for referring physicians and the greater medical community. For more information, please contact Irene Valentino, RAF Director of Administrative Operations, [ivalentino@rafadmin.com](mailto:ivalentino@rafadmin.com), (540) 361-1000.

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## Radiologist Spotlight: George D. Fish, MD



Dr. Fish exploring his favorite city, Paris.

Many children know exactly what they want to be when they grow up. But young George Fish had the opposite experience. "Everything was interesting to me," he explains. "If it were possible, I would have enjoyed working in a series of jobs, for example, pilot, lawyer, forest ranger, professor." He found instead a singular calling, serving since 1988 as a board-certified diagnostic radiologist with Radiologic Associates of Fredericksburg (RAF).

Dr. Fish grew up in Asheville, NC, attended a Jesuit prep school in Massachusetts, and graduated in 1976 from the University of North Carolina at Chapel Hill, where he majored in geography with a focus on urban geography. He briefly pursued several career paths, from urban planning to the airline industry to business consulting, before deciding on medicine. It was a career choice with family roots. His father was a cardiologist and his brother, an academic pulmonologist.

"I was bored and restless," Dr. Fish says of those early years. "To decide what I really wanted to do with my life, I finally made a list of all the things that were important to me. The equation for happiness was this: I wanted to serve humanity, to be intellectually challenged, to provide for my family, and to be free to live wherever I wanted. Being a physician fit all those criteria."

After graduating from the Medical College of Virginia in 1984, Dr. Fish completed his internship and radiology residency at the Medical University of South Carolina in Charleston. The "wherever" part of his happiness equation turned out to be Fredericksburg, VA, familiar territory for his wife, Kathleen, a registered nurse who is a graduate of the

University of Mary Washington. For 23 years, they have lived downtown in the same house, raising their daughter, Elizabeth, and building a lasting connection with the community.

The eighth physician to join the RAF group, which today numbers 35 physicians, Dr. Fish describes himself as a "generalist." Since 2000, he has focused on women's imaging. "I truly enjoy patient interaction," he says. "It's gratifying to explain imaging results, and the next steps, to those in my care."

He currently shares his position at RAF with Dr. Donald Allen. Both plan to retire in July 2012.

The first item on Dr. Fish's to-do list is travel. The couple own a second home in Sarasota, FL, and enjoy visiting their daughter, an aspiring sound designer, in California. They make frequent trips to Paris and currently are planning a stay in Australia and New Zealand.

Dr. Fish also plans to catch up on his non-medical reading, become involved in hands-on charity work, and spend more time biking and hiking with his wife. He may experiment with music lessons and devote greater attention to his oil painting. A wooden sailboat he built with friends will hopefully see more sailing time in the coming years.

Whatever the activity, he will pursue it with unbridled enthusiasm. "I am fortunate to have had such a rewarding career with the doctors and patients at RAF," he says. "I look forward now to many new adventures." ■