

# NEWS AND NOTES

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## f-MRI: MAPPING THE BRAIN FOR BETTER OUTCOMES

One of the most recently developed forms of neuroimaging, Functional Magnetic Resonance Imaging (f-MRI) is a specialized MRI scan that evaluates brain physiology and function and overlays the information on structural MR brain imaging. f-MRI maps the increase in blood flow to the local vasculature that accompanies neural activity in the brain.

to check the contrast between the activation and rest periods,” says Dr. Gaurang Shah, who runs the f-MRI Lab in the Radiology department at the University of Michigan. The sequences then give a significant change of about 4 percent in the oxy-hemoglobin molecule for the activity period, which is called hemodynamic response function.



Gaurang V. Shah, M.D. and Suresh Mukherji, M.D., F.A.C.R.

To create that change, a patient is typically given an activity to perform during the scan. The movement in the motor part of the brain is followed by a rest period. “We take a minimum of 5 to 6 sequences

The Radiology department is now using f-MRI in several clinical cases. “While the research has been going on for a long time, f-MRI is now being used in clinical care and is having a lot of impact. We are one of the very few hospitals and health systems in the region using f-MRI,” says Dr. Suresh Mukherji, division director for neuroradiology.

Some recent studies have examined the effects of f-MRI on surgical planning and postoperative outcome. According to Dr. Shah, the studies show that use of functional magnetic resonance imaging has resulted in reduced surgical time, more aggressive resections, and smaller craniotomies. The main advantages of using f-MRI to image brain activity, adds Dr. Shah, are that the signal does not require injections of radioactive isotopes, the total scan time and the time for processing the results can be very short compared with other tests, and the in-plane resolution of the functional images is quite good.

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# LETTER FROM THE CHAIR

Dear Friends and Colleagues:



We hope you were able to join us at our first alumni reunion of the Hodges Society, which was held from October 14 to 16, 2010. It was wonderful to see old friends. We heard great feedback on the social events as well as the CME program organized by Bill Weadock.

Construction continues on the medical campus. The new Children's and Women's

Hospital is now expected to be ready for occupancy in November 2011, less than a year from now. Imaging equipment has been purchased, and we are anxious to occupy the new space. The new facility will include three MRIs and an interventional suite with a new biplane system dedicated to pediatric patients. The new hospital will also include a pediatric emergency room and Radiology will provide service at this new location while continuing our presence in the adult emergency room.

Following the relocation of the laboratories from the Kresge site to the BSRB and Med Sci I buildings, demolition of the 260,000 square foot facility began. (I am pleased to report that faculty in our ultrasound, optical imaging, instrumentation, DIPL, and PET imaging laboratories are delighted with their new space.) The Kresge buildings are now down and landscaping has turned the site into a park-like setting.

New imaging equipment acquisitions continue to expand our services and keep us at the leading edge of imaging technology. We have completed the renovations on floor B1 of University Hospital and installed our second PET/CT scanner to complement our five SPECT/CT units. We are replacing and upgrading each of our visceral angiography suites in a sequential manner in order to maintain our clinical capacity during the installations. Tom Chenevert is busy watching over the upgrade of our two 3 Tesla magnets. The research unit is being installed

now and the clinical scanner will be upgraded after the research scanner is up and running. In CT, the emphasis is on dose reduction. Improvements in imaging technology allow us to acquire superb images at a much lower dose than was previously possible.

Our reading rooms in the hospital are undergoing a dramatic change. Not only have we rolled out a new McKesson Picture and Archiving Communication System (PACS), but we are also making the reading stations more ergonomic. Harold Carlson, Steve Ramsey, and Jim Ellis worked hard to make sure the transition to the new PACS went smoothly. The speed with which we can now handle the complex imaging studies has improved dramatically and other changes are helping us work more efficiently. Bill Weadock has taken the lead in helping us avoid workplace injuries due to repetitive motion, bad positioning, and/or poor posture. We can now raise or lower our chairs, monitors, and workstation tables to fit our individual needs. Customized lighting is also available at each workstation.

Within the department, we have just completed remodeling the library. We have removed all of the book shelves, thereby enlarging the room, and we have installed a "display case" just in time to accommodate our trophy for winning the image interpretation contest at the Association of University Radiologists annual meeting. This was the third time we have won this competition and I am acutely aware of the importance of the resident contributions to our final answer sheet.

I look forward to seeing you at next year's RSNA and other specialty meeting receptions around the country.

Have a happy and prosperous 2011 and GO BLUE!!!

Regards,

*N. Reed Dunnick, M.D.*

N. Reed Dunnick, M.D.

# f-MRI: MAPPING THE BRAIN FOR BETTER OUTCOMES

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## f-MRI For Neurosurgical Planning

According to Dr. Shah, most patient referrals for f-MRI come from the neurosurgery and neurology departments. “With surgery patients, the brain is mapped to determine the deficits that could arise from the operation,” says Dr. Mukherji. The scans help the neurosurgeon determine how aggressive they can be during the tumor operation without causing any undue morbidity. Dr. Mukherji explains that f-MRI may help minimize the loss of function in patients, therefore potentially providing them with a better outcome following surgery. The following example, given by Dr. Shah, illustrates the f-MRI process in a brain tumor patient: “If we get a patient with a brain tumor and the surgeon wants to identify eloquent brain tissue involved in leg and toe movement, the patient moves leg and toes during the activity period. The beginning and end of this activity period is cued by a visual signal and is repeated a few times. The brain images obtained illustrate the observed location of the brain activity during this

task in relation to the tumor and help the surgeon determine the best outcome for the patient. Language, sensory, visual, auditory, and other targeted functions can also be imaged in a similar manner.”

## f-MRI for Epilepsy Patients

The other major area where f-MRI has been proven helpful is with epilepsy patients. “Neurological disorders can have a profound impact on the language areas of the brain,” says Dr. Shah. “Important parts of the brain involved in language function include Wernicke’s area [area involved in comprehension of language] and Broca’s area [area linked to language expression] and Meyer’s loop, which aids in information transfer between these two areas. To understand the impact of f-MRI in identifying the language areas in epilepsy patients, it is important to understand the [areas’] position and laterality in the brain,” adds Dr. Shah. f-MRI and fiber tracking help locate those areas prior to surgery without the use of invasive methods.

Before the introduction of f-MRI scans, doctors would usually order a Wada test for epilepsy patients to determine which side of their brain controlled language function. This minimally invasive test requires an endovascular procedure with a neuroradiologist and a neuropsychologist. f-MRI is increasingly being performed in place of the Wada test at many centers. Dr. Shah quotes a study in which f-MRI was performed on 60 patients in Miami Children’s Hospital prior to surgery with great results. In 38 patients, f-MRI helped to avoid the use of additional procedures, such as the Wada test. In 25 patients, f-MRI results led to altered surgical planning and in 31 patients, intraoperative mapping was conducted with the f-MRI.

To determine the location of the brain tissue for various language skills with

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Suresh Mukherji, M.D., F.A.C.R.,  
Angela McPherson, R.T. (R) (MR),  
Gaurang Shah, M.D.,  
Nancy Dudek, R.T. (R) (MR),  
Leslie Adams, R.T. (R) (MR),  
and Matt Helfen, R.T. (R) (MR)

## RESEARCH SPOTLIGHT

**THE FUNCTIONAL NEUROIMAGING, COGNITIVE AND MOBILITY LAB:  
ADVANCING SCREENING FOR ALZHEIMER'S AND PARKINSON'S DISEASE**

Nicolaas Bohnen, Ph.D., Director of the Functional Neuroimaging, Cognitive and Mobility Lab

An estimated 500,000 people in the United States live with Parkinson's disease (PD), and 5.3 million with Alzheimer's disease (AD)—making them the two most common neurodegenerative disorders. At present, there is no cure for these devastating disorders, which rob people of their ability to control their own movements (PD) and their ability to think and remember (AD). In addition, these diseases are typically diagnosed when already in an advanced state, thereby compromising the effectiveness of therapy.

Several new studies offer hope that in the future physicians will be able to detect these diseases at an early stage and slow down their progression or delay their onset. At the U-M, a team of scientists in the Functional Neuroimaging, Cognitive and Mobility Lab is conducting research that suggests olfactory tests could offer a promising method for the early diagnosis of both PD and AD and help with more effective treatment for these diseases. "Often several years before the classic motor and mental impairment symptoms of PD and AD become apparent, the ability to identify and detect odors shows dysfunction," says lab director Nicolaas Bohnen, Ph.D. "In other words, problems with smell can be an early, early sign of both diseases."

Lab researchers are using smell tests, as well cognitive functioning tests and PET scans, to gain a better understanding of the pathophysiology of olfactory dysfunction in people with PD and AD. "This new insight," says Bohnen, "will enable us not only to diagnose these diseases earlier on, but eventually to develop new and better treatment options."

**Two Promising Studies**

One of the lab's current studies, sponsored by the National Institutes of Health (NIH), is investigating whether smell tests can be used not only for early detection of PD, but also for identifying PD patients at high risk for cognitive decline. The subjects are 60 patients who suffer from Parkinson's disease without dementia. Over the next two to four years, they will undergo odor identification and cognitive tests and PET scans to determine (1) whether the severity of their olfactory dysfunction is linked to their risk for developing cognitive impairment, and (2) whether worsening olfactory functioning parallels progressive acetylcholine abnormalities in the limbic system and neocortex.

At the start of the study, participants underwent a cognitive functioning assessment, a PET scan that measures the amount of the brain chemical acetylcholine, and olfactory testing. The findings from this initial evaluation indicate that low odor identification test scores are linked with both lower scores on cognitive tests, and with acetylcholine deficits in the hippocampal formation, amygdala, and neocortex.

The researchers speculate that acetylcholine deficits may contribute to odor identification problems in PD because such deficits compromise the functioning of parts of the brain involved in cognitive or memory processing, such as the hippocampal formation. "If our investigation can verify this connection, we may eventually see the use of olfactory testing to identify PD patients with acetylcholine abnormalities and of cholinergic drug therapies to treat these patients," explains Dr. Bohnen.

Another NIH-funded study in the lab, led by Dr. Kirk Frey, is exploring the role that the neurotransmitters acetylcholine, serotonin, and norepinephrine play in the non-motor

symptoms of Parkinson's disease, such as memory impairment, mood and sleep disturbances, and malfunctions of the autonomic nerves. In explaining the study's purpose, Dr. Bohnen says: "Most people associate Parkinson's disease with motor-related symptoms—such as tremor, slowness, and/or rigidity of movement—which often improve with dopamine replacement therapy. But the non-motor symptoms of the disease typically don't improve. By determining the relationship between these symptoms and various neurotransmitters, we can hopefully discover better treatment options for this disease." As part of the study, participants will complete olfactory tests, PET scans, and clinical evaluations.

"We don't yet have a cure for these diseases or a vaccine to prevent people from getting them, but in the future I believe we will. At that time, the ability to diagnose Parkinson's and Alzheimer's at an early stage will be critical."

### Conclusion

Dr. Bohnen hopes that eventually smell tests will routinely be given during annual physicals to people at high risk for PD and AD—people, for example, with a family history of these diseases and/or over the age of 60 years. "We don't yet have a cure for these diseases or a vaccine to prevent people from getting them, but in the future I believe we will. At that time, the ability to diagnose Parkinson's and Alzheimer's at an early stage will be critical."

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f-MRI, doctors use three different paradigms or tasks. The patient may be asked to do a picture-naming task during which he or she has to think of the name of each picture as it is displayed. The patient may also be asked to take a word generation task to determine the expressive language area of his or her brain. The third test is a language comprehension task used to verify the location of Wernicke's area.

### Tractography

Often, doctors use f-MRI as a clinical tool along with tractography, also known as fiber tracking, a procedure to demonstrate the neural tracts of white matter in the brain. Tractography uses computer-based image analysis and merges them with the results of f-MRI. The results are presented in two- and three-dimensional images. "Tractography is now being used in PTSD patients and patients with closed head injuries," says Dr. Shah, who adds that a great amount of research is now going into this field.

### Bench to Bedside

According to Dr. Shah, it is the bench to bedside care offered by U-M's Radiology department that makes the patient care exceptional. "We are always looking for ways to bring new research findings into clinical care. It is the availability of the best scientists, a great surgical team, and advanced equipment at the University of Michigan that defines the Michigan Difference."

At present, U-M researchers are conducting several research projects using f-MRI that they hope will revolutionize the care of patients. One promising study involves the use of f-MRI for pain management. Researchers are using f-MRI to investigate cortical representations of specific pain types, which could lead to new therapy options.

When asked what gives him the most satisfaction, Dr. Shah says, "I am really proud to be a member of the team that saves lives. I may not wield the scalpel, but I certainly guide the hand that moves the scalpel."

## FACULTY PROFILES

## AFTER 30 YEARS AT THE HEART OF IT ALL, U-M RADIOLOGY'S FIRST FEMALE PROFESSOR RETIRES



**Caroline E. Blane,  
M.D., C.M.**

*Professor, Department  
of Radiology*

Initially, Montreal native Dr. Caroline E. Blane intended on becoming a pediatrician. Radiology had not been an interest until her first clinical elective at McGill University in a pediatric surgery clinic.

There, she noticed that X-rays needed to be ordered regularly and made a mental note that she needed to learn more about them. So the next summer she took her clinical elective in pediatric radiology at The Children's Hospital Medical Center in Boston. She not only learned about X-rays but also discovered that radiology was the right field for her. "I realized that it was at the heart of it all. Just about all patients and all doctors came through radiology. You could see the most interesting cases. That's where I wanted to be. That's when I changed my focus from pediatrics to pediatric radiology."

Dr. Blane not only found her true calling in medical school, but she also met her husband of 36 years, Dr. Andrew Vine, a U-M professor emeritus of ophthalmology and visual sciences. After completing a rotating internship at Toronto Western Hospital, University of Toronto (1973–1974); a diagnostic radiology residency at Royal Victoria Hospital, McGill University (1974–1977); a senior residency at The Children's Hospital Medical Center, Harvard University (1978); and a clinical and research fellowship in neuroradiology at Montreal Neurological Hospital, McGill University (1978), Dr. Blane hoped to find work as a pediatric radiologist.

At that time, she faced the challenge of not only being female, but also being part of a dual-career, medical couple. "Private practice in the U.S. was not open to hiring female radiologists. Only academic institutions were providing opportunities for women. Being from Canada, both Andrew and I considered academic jobs as more prestigious and as providing better opportunities. So thankfully, that wasn't an issue for us," she explains. Her first two positions were in California as a clinical instructor at the University of California in San Francisco (1979) and an acting assistant professor at Stanford University (1979–1980).

In 1980, both Dr. Blane and her husband joined the University of Michigan faculty—she as an instructor of radiology and he as an assistant professor of ophthalmology—where they have both enjoyed successful careers ever since. She became an assistant professor in 1981, an associate professor in 1987, and the Department of Radiology's first female full professor in 1994.

For half of her tenure, Dr. Blane focused on pediatric radiology and worked with the C.S. Mott Children's Hospital team. Then after noticing an increased need in breast imaging about 15 years ago, she shifted her focus to mammography and working with the U-M Breast Imaging Clinic.

Dr. Blane was appointed to the position of associate chair of the Department of Radiology in 2002. As one of her first goals, she was assigned the task of cultivating a relationship with U-M's Emergency Medicine Department. As a result of this effort, the Division of Emergency Radiology was established. Working closely with the hospital administration, Dr. Blane also initiated many of the Department of Radiology's initial Quality Improvement projects. She explains, "During my tenure in this position, I was able to successfully implement many new initiatives due to the

## LEADING THE FIELD IN RESEARCH AND PATIENT CARE

wonderful support and help of Dr. Dunnick.”

After a career of numerous accomplishments and honors including publishing 97 peer-reviewed clinical papers, being named a fellow of the American College of Radiology, and one of the Best Doctors in America nine years in a row (2001–2010), Dr. Blane says she feels most fortunate about the people she’s been able to work with at U-M.

“There were so few women in radiology and no senior women when I started. Drs. Donita Sullivan, the associate chair of pediatrics, and Robert Hensinger, professor of orthopaedic surgery, provided me with wonderful guidance and mentorship at the start of my career,” she explains. “All of the clinicians that I’ve worked with in both pediatric radiology and now in breast imaging conducting research and taking care of patients have been amazing. That is what appealed to me about this field. That’s why I wanted to be at the heart of it all.”

*Dr. Blane became an active emeritus professor of radiology on September 30, 2010. She and her husband have a condominium in Ann Arbor and a country home in France with a huge garden and many projects to keep them busy. Their son, Adrian, a U-M College of Engineering alumnus (B.S., M.S.), currently works as an engineer in Ann Arbor.*



### **Hero K. Hussain, M.B., Ch.B.**

*Associate Professor, Department of Radiology*

An associate professor in Radiology, Hero K. Hussain has demonstrated excellence in research and teaching during her decade-long stay at U-M. Among her many accomplishments, she has conducted research that has led to significant improvements in patient care.

Dr. Hussain entered radiology because she was intrigued with the idea of “knowing a little bit of everything.” “Since we help doctors in all fields, it is important for us to know about almost all of the specialties,” she adds. Arriving at U-M 11 years ago when the radiology department was looking for a specialist in body MRI, Dr. Hussain has expanded her research interests over the years, becoming a leading investigator in the areas of liver and pancreatic MRI.

Talking at length about her research, Dr. Hussain explains that the number of liver cancer cases is increasing, making the need for comprehensive care for patients greater than ever before. “At U-M, we provide specialized care to patients suffering from liver cancer. The team also meets every week to discuss patient cases. It is fulfilling and satisfying to know the patients intimately and be involved in their care,” she adds.

According to Dr. Hussain, people often forget that the liver is the largest organ in the abdomen and end up abusing it. She believes that MR techniques for identifying liver lesions are improving, thereby enabling the detection of smaller cancers. “The modality is good for small lesions. We have a new contrast agent that we use which may help us improve the detection of small cancers in the liver.” Another research topic that interests her is quantification of liver fat. “[Unlike liver biopsies], this is a non-invasive procedure that is used as an indicator of several diseases.”

“Working to diagnose liver cancers early is important,” says Dr. Hussain. “If the cancer is detected earlier, the therapy works better. I’m motivated by the excitement of getting new research results and using them in daily practice,” she adds. “If a patient can live two to three years cancer free, I feel that my research is helping improve patient management.”

Even though she has been at U-M for 11 years, Dr. Hussain feels that her work is ever-evolving. “Every year my practice changes and patient care standards are higher. It pushes people to give their best.” She also believes that surgeons are depending on the MRIs more than ever before to make educated choices. “The demands have increased and this happens if you are at the forefront of your field.”

In addition to her research, Dr. Hussain is also invested in educating the younger generation. “After all, that is what people remember you for long after you’re gone.”

## RESIDENCY PROGRAM NEWS

## REFINING U-M'S SELECTION PROCESS



**Barry Gross, M.D.**  
Professor, Department of  
Radiology

The residency selection process is an amazingly fulfilling experience, says Dr. Barry Gross. “The residency process starts out with a group of candidates, whom we try to evaluate on the one hand and recruit on the other.”

Dr. Gross should know. He led the residency selection process for more than 20 years. He first became chair of the Resident Selection Committee in 1984 and continued in that role until 1987. After a brief hiatus, Dr. Gross returned to U-M and to his position as committee chair in 1993. Dr. Gross feels the program has grown with the years and is enthusiastic about the changes. “We started with 6 to 7 people per year and are now up to 11 residents.”

To make sure the process is just, Dr. Gross developed a statistical formula that accounts for evaluators’ personal biases. “Over the years we’ve done a few things. Fairness is important to me and I’ve tried to make the process more fair.” He introduced mathematical corrections to ensure the candidate’s accomplishments in medical school and other achievements take precedence over evaluators’ feelings about a candidate.

Dr. Gross also stresses that a personal element is crucial to the selection process. He asks the candidates to fill out a questionnaire stating their place of origin, interests, research focus, and so forth, and then spends time with each application in order to match each candidate with the right person in the department. Andrew Trout, a current chief resident, says of the selection process, “The person interviewing me was from the Mayo Clinic,

the same hospital I was coming from and I connected right away.”

Dr. Gross never fails to add a personal touch to his work. He used to look, for example, at the pictures of incoming residents and memorize their names. Ella Kazerooni, currently the associate chair for clinical affairs and a former U-M radiology resident recalls, “On resident interview days, Dr. Gross would go around the room of nervous medical students and welcome each of us by name. It made us feel welcome, and of course we all marveled at this feat!”

Dr. Gross feels the focus of the selection process has shifted over the past two decades. Early on, it was the candidates telling him why they would be a good fit, what they could offer. “Now it’s us, as much or more saying this is what is good about coming to U-M.”

“It is fulfilling to evaluate candidates, see them through four years of residency and then have contact with some of them, particularly from the earlier years, seeing how they are doing in their careers. Some are running programs. It’s tremendously fulfilling,” Dr. Gross notes.

For Dr. Gross, life has come full circle. “Now it’s the second generation coming back whose parents were faculty or residents in this program.” He mentions that the son of a former faculty member, who is the chairman of Radiology at Stanford University, entered the residency program in July 2010, causing much excitement in the department. “The staff remembers the ‘little boy’ who is now coming back as a resident.”

Dr. Gross recently passed the baton to Dr. David Fessell, the new Resident Selection Committee chair. Dr. Gross feels the selection process can improve even more and is excited to see where the program will be in five years. “Dr. Fessell is young and innovative and will take the selection process to places I have never dreamed of.”

## SERVING THE COMMUNITY AT HOME AND ABROAD



**Andrew T. Trout, M.D.**  
*Chief Resident,  
Department of Radiology*

A radiology chief resident since January 2010, Andrew T. Trout, M.D., has demonstrated not only excellence in academic achievements during his residency at the University of Michigan, but also a commitment to improving the lives of others. He has conducted research that

could improve the ER call system for radiology residents and the use of imaging to evaluate physical abuse in children. He has also devoted his time and talents to improving the health and well-being of people living in rural Guatemala.

Dr. Trout was motivated to specialize in radiology after working with Dr. David Kallmes, an inspirational mentor and neuroradiologist at the Mayo Medical School College of Medicine in Minnesota. “Dr. Kallmes was a strong researcher and clinician, who really seemed to enjoy his life and career,” he explains. “I also gravitated toward radiology because it covers the full breadth of medicine, giving me the opportunity to be involved in all of the different fields.”

Dr. Trout chose U-M for his residency because he wanted to continue his medical training at an academically oriented teaching hospital, where residents play an integral role in the day-to-day operation of the hospital. “I also really liked a lot of the faculty I interviewed with,” declares Dr. Trout, “and felt I could work well

with them.” At U-M, he has conducted important research on anxiety and confidence levels in residents beginning their first week of independent emergency room call. By comparing residents’ feelings both prior to, and following, the introduction of a modified system where residents take two partial shifts with an experienced resident, Trout hopes the study will demonstrate the need for modifications to the standard system.

As a resident, Dr. Trout has also taken the unusual step of volunteering in rural Guatemala. “I was inspired by the numerous medical mission trips my parents made to the country over the years, and I knew Spanish quite well from working in an orphanage in Guatemala after college,” he explains. Utilizing an ultrasound system borrowed from the SonoSite company, he performed, in 2009, more than 100 ultrasound examinations in a health clinic set up in a local school. Greatly impressed by the improvements to patient care the ultrasound system enabled, Dr. Trout petitioned the company to sell the unit at a reduced price to Faith In Practice, the organization sponsoring the mission. Representatives from SonoSite responded to Trout’s application with such enthusiasm, they sold the system to Faith In Practice at far less than the normal price. “When I returned to Guatemala in April of 2010, everyone on my team was incredibly pleased and just raved about the new system,” he says. “Seeing the impact it made on patient care was incredibly gratifying to me.”

Following his residency, Dr. Trout will pursue a fellowship in pediatric radiology at Cincinnati Children’s Hospital, followed by a fellowship in nuclear medicine. Dr. Trout then expects to begin a career in academic medicine, with a specialty in pediatric nuclear medicine. He believes that the training he is receiving at U-M will be excellent preparation for his career ambitions.

## ALUMNI PROFILES

## GIVING BACK IN GRATITUDE



**Roger A. Berg, M.D.,  
F.A.C.R.**

Dr. Roger A. Berg believes that “the true measure of a man is what he has done that inures to the benefit of others, even after his lifetime. When I was growing up,” he says, “my father passed on to me a sense of gratitude for all he had received, and he stressed the importance of giving back.”

The Department of Radiology has reaped the benefits of that early instruction. In 1984, with Dr. William Martel (now professor emeritus in the Department of Radiology), Dr. Berg established the Roger A. Berg Prize in Radiology, an award given each year to a fourth-year medical student for outstanding performance in radiology. In 1986, he expanded the prize to include an annual lectureship, establishing the Roger A. Berg Endowment. “Having an annual lecture given by world-renowned radiologists is a big boost to the department and to the medical school,” he says, “and is especially important to a teaching hospital like U-M’s.” In 1991, for his thirtieth medical class reunion, Dr. Berg, as class chair, conceived and then solicited funds from his classmates to establish the Med ’61 Woodburne Scholarship in honor of their anatomy professor, Russell T. Woodburne.

Establishing the endowment had another motivation as well: it was a way to give back to the institution that had given so much to his family. Dr. Berg recounts the story: “During the Great Depression, my grandfather owned a hardware store, where my dad worked. One day a customer told my dad that instead of spending his life stocking shelves, he should become a doctor or a lawyer. That comment made a big impression on my father, eventually inspiring him to apply to college and then medical

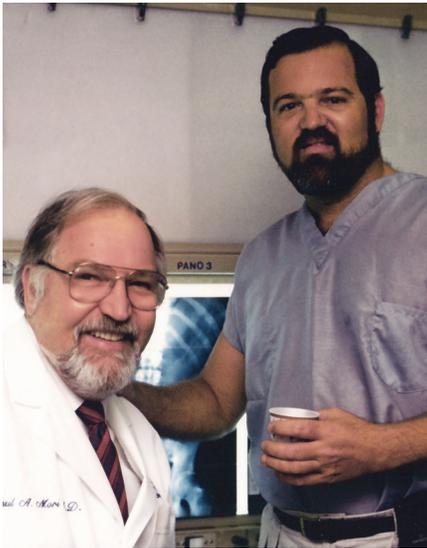
school. U-M was the only place my father could afford and he felt eternally grateful to the school for enabling him to become a doctor.”

Dr. Berg and his two brothers followed their father to Michigan, each earning undergraduate and medical degrees from the University. (Two of Dr. Berg’s four children are also alumni.) “I enjoy giving back to the University—but I wouldn’t have gone to Michigan if my dad hadn’t been able to attend,” he says. “Giving back started in my junior year in medical school when, as a Galen, I stood on a freezing corner in downtown Ann Arbor, collecting money for the Mott Children’s Hospital Christmas Fund.” In 1986, following the death of their parents, Dr. Berg and his two brothers established the Eve and Albert Berg Memorial Loan Fund (now a scholarship) for medical students.

Another reason for his loyalty and affection for U-M is the outstanding training he received there, particularly from “an aggressive and talented” assistant professor of radiology, Dr. Bill Martel. “His enthusiasm and that of his father (who was a general practitioner and self-trained radiologist) for radiology solidified my desire to pursue that specialty,” he says.

Dr. Berg’s experiences at U-M laid the foundation for a highly productive career in medicine. Following an internship and residency in radiology at Montefiore Medical Center in the Bronx, he served his country as a captain in the U.S. Army Medical Corps during the Vietnam War, overseeing the X-ray department of a field hospital in Saigon. Following his discharge, Dr. Berg joined the staff of the Morristown (NJ) Memorial Hospital, where he continues to work part time in the Radiology department. Dr. Berg also regularly serves as an expert witness in personal injury litigation and gives lectures to radiology residents on issues related to medical malpractice in radiology. He has been a NIOSH Certified B-reader for the past 24 years as well.

## RADIOLOGY'S FATHER-SON TEAM



### Paul Mori, M.D. and Kurt Mori, M.D.

Dr. Paul Mori and his son Dr. Kurt Mori have the distinction of being a father-son doctor team who not only have worked together but who have served their residency at the same place. Both graduates of U-M's radiology residency program (in 1955 and 1981, respectively), they are now

making a difference in the lives of countless patients in the Jacksonville, Florida area, where they oversee radiology activities for several hospitals.

In explaining why he came to U-M, Paul says, "When I was an intern at a hospital in Grand Rapids, all I heard about was the University of Michigan. So when I was looking for a residency program in radiology, my mentor gave me only two choices—either the U-M or the University of Pennsylvania. I applied to only one school and that was the University of Michigan." For Kurt, his lifelong connection to U-M, and a visit to campus that left him impressed while he was an intern at the Medical College of Ohio in Toledo, made his decision easy.

Both stress that U-M's radiology residency program set them up for successful careers in radiology. Paul states, "There was a lot of emphasis on top quality work and keeping up with the latest technological developments in the field. "They set a high standard for a successful academic and clinical career," Kurt adds.

After completing his residency, Paul embarked on his career in radiology at Baptist Medical Center in Jacksonville. With his leadership, insight, and expertise, he quickly made an impression on his peers and

administrators. In discussing his career, Paul mentions that he regularly participated in training sessions and sabbaticals to keep up his skills. "When I first started, we were developing X-rays by hand. I have seen the emergence of the CT scan and the MRI and have had to keep up with the technology."

Paul founded Drs. Mori, Bean and Brooks, P.A. in 1964, and Kurt joined his father's practice in 1982. Soon after it was established, the practice began to play a critical role in Jacksonville's hospital system. Today, the practice consists of more than 47 radiologists and serves six area hospitals. Similar to his father, Kurt also joined the staff of the Baptist Medical Center and is now a member of the Board of Directors at the Baptist Health Foundation.

After a long and illustrious career, Paul retired in 2003, though he continues to practice part-time. To honor his 47 years of service and his many contributions to the field, the Department of Radiology at Baptist Health Center was renamed the Mori Department of Radiology. Kurt Mori is still going strong and recently celebrated 25 years of service to the Jacksonville community.

Despite living far from Michigan, both father and son have kept in touch with friends from U-M and recently attended the October reunion. "We couldn't wait to come and meet our friends," Kurt says. "I hadn't seen some of them since I graduated and loved connecting the dots and finding out about their careers," Paul adds.

The enthusiasm and support both father and son have displayed toward U-M has been unwavering. Several U-M radiology alumni have trained and enjoyed long careers in their group. But that loyalty is most evident in Kurt's hope for his son's future. "I have a 9-year-old son. My hope is that in the class of 2035 or somewhere close to that, when he is looking for a residency program, there is a place for him at the University of Michigan."

# HODGES SOCIETY ALUMNI REUNION 2010

Robert A. Rapp, M.D. '53, Arthur S. Shufro, M.D. '57, Paul A. Mori, M.D. '56, John R. Yoder, M.D. '58, and Ralph W. Theobald, M.D. '57



Norman N. Komar, M.D. '67, Paul E. Berger, M.D. '74, N. Reed Dunnick, M.D., Charles E. Mueller, M.D. '71, Michael A. Sandler, M.D. '75, and Terry M. Silver, M.D. '74



Anne Weitz, Maurie Peltó, M.D. '63, Patricia Gunn, James Gunn, M.D. '52, Mary Peltó, and Charles Weitz, M.D. '08





N. Reed Dunnick, M.D., presents Robert Rapp, M.D. '53 a gift of appreciation



Front row: Robert Rapp, M.D. '53, Marilyn Roubidoux, M.D., Gordon Stoney, M.D. '64, Beverly Berger, and Charles Mueller, M.D. '71  
Back row: Anne Rapp, N. Reed Dunnick, M.D., Joanne Stoney, Paul Berger, M.D. '74, and Susan Mueller



James Ellis, M.D., flashes his Michigan pride with N. Reed Dunnick, M.D.

## SAVE THE DATE

The Department of Radiology's 100th anniversary and next reunion will take place during Homecoming 2013.

# FACULTY AWARDS + RECOGNITION

**Nicholaas I. Bohnen, M.D.**, was appointed president of the Society of Nuclear Medicine Brain Imaging Council.

**Richard K. J. Brown, M.D.**, received the American Board of Radiology Distinguished Service Award.

**Ronald O. Bude, M.D.**, received the Distinguished Alumni Award for 2010 from the University of Illinois College of Medicine at Peoria.

**Ruth C. Carlos, M.D.**, was elected vice president of the Association of University Radiologists. She was also named a fellow in the American College of Radiology, and was appointed to the Executive Council of the American Roentgen Ray Society.

**Qian Dong, M.D.**, received a 2010 Radiological Society of North America Research Scholar Award.

**N. Reed Dunnick, M.D.**, became an honorary member of the American Society for Radiation Oncology.

**Lorraine Fig, M.D.**, was appointed a member of the board of the American College of Nuclear Medicine.

**Brian Fowlkes, Ph.D.**, will receive the 2011 Joseph H. Holmes Pioneer Award from the American Institute of Ultrasound in Medicine. He was also elected secretary of the American Institute of Ultrasound in Medicine.

**Kirk A. Frey, M.D., Ph.D.**, received the Kuhl-Lassen Award, and was elected secretary/treasurer of the American Board of Nuclear Medicine.

**Milton D. Gross, M.D.**, was named a fellow by the American College of Nuclear Medicine.

**Maryam Ghadimi Mahani, M.D.**, along with co-authors, J. R. Dillman, D. Pai, J. M. Park, M.A. DiPietro, and M. Ladino-Torres, received the Caffey Award for the best Case Report Poster at the Society of Pediatric Radiology annual meeting in 2010.

**Robert A. Koeppe, Ph.D.**, was elected to the Board of Directors of the International Society of Cerebral Blood Flow and Metabolism.

**David E. Kuhl, M.D.**, received the Gold Medal for Distinguished Service to Radiology from the American Roentgen Ray Society, and was named a fellow by the American College of Nuclear Medicine.

**Gary Luker, M.D.**, was elected to membership in the American Society for Clinical Investigation, and was appointed a council member of the Society for Molecular Imaging.

**Suresh Mukherji, M.D.**, is president-elect of the American Society of Head and Neck Radiology and vice president of the Michigan Radiology Society. He also

serves on the Executive Committee for the American Society of Neuroradiology.

**Stephanie Patterson, M.D.**, was named an American College of Radiology Fellow.

**Leslie Quint, M.D.**, advanced to the position of vice president for the Society of Computed Tomography and Magnetic Resonance.

**Jonathan Rubin, M.D., Ph.D.**, will serve as the 2011 RSNA International Visiting Professor to Mexico. He was also named an American College of Radiology Fellow.

**James J. Shields, M.D.**, was named a fellow in the American College of Radiology.

**Ashok Srinivasan, M.D.**, received the Cum Laude Award at the 2010 meeting of the American Society of Neuroradiology.

**Peter Strouse, M.D.**, was named a fellow by the American College of Radiology.

**Pia Maly Sundgren, M.D., Ph.D.**, was appointed professor of diagnostic radiology and head of the Department of Diagnostic Radiology, Clinical Sciences Lund, Lund University, Sweden.

**David M. Williams, M.D.**, was named a fellow by the American College of Radiology.



# INAUGURATION OF THE DAVID E. KUHL COLLEGIATE PROFESSORSHIP IN RADIOLOGY



N. Reed Dunnick, M.D., Abass Alavi, M.D., David E. Kuhl, M.D., Kirk A. Frey, M.D., Ph.D., James O. Wooliscroft, M.D., Dean of the U-M Medical School

In February of 2010, Kirk A. Frey, M.D., Ph.D., was inaugurated as the first Kuhl Professor. A 1984 graduate of the University of Michigan Medical School, Dr. Frey joined the faculty in 1989. Dr. Frey's research interests include movement disorders, Parkinson's disease, tremor, brain imaging, brain metabolism, blood flow, receptors, and neuropharmacology.

## HOW YOU CAN HELP

There are many opportunities to help ensure we can continue our successful educational, research, and clinical missions so that future trainees have the same opportunity for success as yourself. Here is how you can help advance radiology education and research through your tax deductible contribution.

You can establish an endowment, educational award, research fund, or professorship in honor of a family member, friend, or faculty.

You can also help by contributing to an already established endowment:

- Saroja Adusumilli, M.D., Collegiate Professorship in Radiology
- David E. Kuhl Collegiate Professorship of Radiology
- Basic Radiological Sciences Endowment
- Walter M. Whitehouse Memorial Endowment
- William Martel Professorship
- John F. Holt Collegiate Professorship
- Roger A. Berg Endowment
- Fred Jenner Hodges Professorship

For more information, contact Alisha Faciane at 734.232.3248 or [affenty@umich.edu](mailto:affenty@umich.edu)



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## WAYS OF GIVING: TURNING ASSETS INTO INCOME

### *Count on us...and receive an income you can count on*

Finding ways to put assets to their best possible use is a top priority, especially during times of economic change. If you are interested in a sound way to turn assets into income and want to support the U-M Department of Radiology, it may be time to explore a charitable gift annuity — a gift to U-M that provides an up-front income tax deduction and allows you to receive fixed income for life at an attractive payment rate (see chart).

### *Here's How it Works*

Suzanne, age 75, wanted to leave a legacy to Radiology but was also concerned about the income she was receiving from some of her retirement sources. She decided to use \$20,000 in cash to set up a gift annuity. Her payment rate is 6.3%, which means she receives annual payments of \$1,260 for the rest of her life — part of which is tax-free. In addition, Suzanne benefits from a significant federal income tax charitable deduction in the year of her gift.

### *It's Easy to Get Started*

If you're looking for a way to turn assets into an income stream and want to support the University's mission of education, research and service, a charitable gift annuity may be right for you. It's easy to set up, the minimum gift amount is \$10,000, and payments can begin this

year or be deferred to a later time. (If you defer payments, you increase your charitable deduction and receive larger payments compared to starting payments now.)

### CURRENT GIFT ANNUITY RATES\*

AGE	RATE
65	5.3%
70	5.7%
75	6.3%
80	7.1%
85	8.1%
90	9.5%

*\*Rates subject to change. Please contact us to verify current rates.*

To learn more about how you can help yourself while supporting U-M, contact us directly by phone or e-mail. It will be our privilege to help you explore the benefits of a charitable gift annuity.

Alisha Faciane at 734.232.3248 or [affenty@umich.edu](mailto:affenty@umich.edu)

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