

A large, dark silhouette of a person's head and shoulders is centered on the page. The silhouette is filled with a dark color, and the background behind it is a light, textured grey. The text is overlaid on the silhouette.

RT image's

25

Most
Influential

Recognizing the movers and shakers in the radiology industry

We read the studies. We scoured the Net. We interviewed. We thought and we debated. Then we debated some more. A few heated arguments (and a few thumb wars) later, RT Image is proud to present the 2004 roster of radiology's most powerful

people, institutions and organizations. Whether their influence comes in numbers or from the dedication of one, all those on our list demonstrate the drive, character and integrity that deserve the title, "Most Influential."

1

David J. Brailer, MD, PhD

A framework for health information technology

Although the Centers for Medicare and Medicaid reports national healthcare spending at \$1.7 trillion, healthcare spending and health insurance premiums are rising at higher rates than inflation. Physicians and hospitals continue to lament preventable errors, uneven healthcare quality and poor communication.

The Institute of Medicine estimates that between 44,000 and 98,000 Americans die each year from inpatient medical errors. These problems – high costs, medical errors, variable quality, administrative inefficiencies and lack of coordination – are closely connected to inadequate use of health information technology (HIT) as an integral part of medical care.

On April 27, President George W. Bush issued Executive Order 13335 calling for widespread adoption of interoperable electronic health records (EHR) within 10 years. As a result of this act, David J. Brailer, MD, PhD, was named as the first National Coordinator for Health Information Technology and assigned the monumental task of unifying the multiple segments of the healthcare sector and health-related agencies of the federal government.

In this new role, Brailer is charged with developing, maintaining and overseeing a strategic plan to guide nationwide adoption of health information technology (HIT) in both the public and private sectors. The executive order also calls for the national coordinator to deliver a report on progress toward a strategic plan within 90 days of appointment.

By all accounts, Brailer has all of the right tools to get the job done: doctoral degrees in medicine and economics, experience as a consultant to the federal government in health information technology and a proven track record as a CEO.

Brailer recently finished a 10-year term as chairman and CEO of Philadelphia-based CareScience, the nation's leading registry of medical errors and physician and hospital performance. He also designed and oversaw development

of the first peer-to-peer health information exchange technology and led its first implementation in Santa Barbara County, Calif. Under Brailer's leadership, CareScience raised more than \$100 million in private and IPO financing and sold more than \$200 million in technology and services to hospitals and integrated delivery systems across the United States.

In July, Brailer, along with U.S. Health and Human Services Secretary Tommy Thompson, unveiled a framework for strategic action titled "The Decade of Health Information Technology: Delivering Consumer-Centric and Information-Rich Health Care."

"This framework outlines 12 strategies that will achieve four goals critical to the president's vision," Brailer says. "These goals include an introduction of information tools into clinical practice, electronically connecting clinicians to other clinicians, using information tools to personalize care delivery and advancing surveillance and reporting for population health improvement."

The strategic framework identifies four major goals and a series of eight strategic actions to promulgate widespread adoption of electronic health records to achieve patient-centric improvements to healthcare delivery.

Outlining his four major goals, Brailer calls for incentivizing EHR adoption and creating tools that ensure 100 percent success in EHR implementation and use. He also urges facilities to interconnect with clinicians by identifying interoperability as a major milestone for achieving improved healthcare delivery, encouraging regional healthcare information exchanges and setting up a national health information network.



In order to personalize healthcare, Brailer wants to foster patient-centric care delivery and more informed healthcare consumers. His last major goal is to improve population health by encouraging the collection, analysis and dissemination of timely and accurate information that affect public health.

Brailer says the framework represents the foundation for rapid adoption of health information technology across the nation. "Implementing health information technology across America is about [the] transformation of healthcare," he says. Brailer hopes the report will promote a more effective marketplace, greater competition and increased choice for consumers through wider availability of information on healthcare costs, quality and safety.

The first steps Brailer has planned will help establish an HIT leadership panel to evaluate the urgency of investments and recommend immediate actions and create a Medicare beneficiary portal to improve consumer access for personal and customized health information.

Other steps in the action plan include sharing clinical research data through a secure infrastructure and developing technically sound and specified standards and policies.

Brailer wants local and regional health centers to build their own infrastructure to support interoperability, as well as a national effort to provide links between regions and national entities.

"We're not creating [a] new movement," Brailer says. "Paper documents have always been shared. We just want to make the movement electronic."

By focusing on the clinician and the consumer, Brailer hopes his approach will drive industry-wide change. "Our goal is to bring about improvement in healthcare from the inside out," he says. "This transformation will require the collabora-

“Implementing health information technology across America is about [the] transformation of healthcare.”

► David J. Brailer, MD, PhD

tive efforts and leadership of clinicians, consumers, hospitals, purchasers, payers, technology companies and informatic thought leaders to make this groundwork for change a reality.”

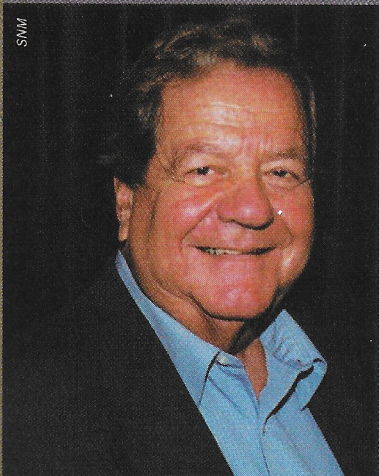
For fiscal year 2005, President Bush has pledged \$100 million in funding toward Brailer's framework with hopes that the estimated \$140 billion per year savings that a national health information network is expected to bring can become a reality.

The framework report concludes that HIT has the potential to transform healthcare delivery, bringing information where it is needed and refocusing healthcare around the consumer, all carried out without substantial regulation or industry upheaval.

"The changes that will accompany the full use of information technology in the healthcare industry will pose challenges to longstanding assumptions and practices," according to the framework report. "However, these changes are needed, beneficial and inevitable. Action should be taken now to achieve the benefits of HIT. A well-planned and coordinated effort, sustained over a number of years, can deliver results that will better support America's healthcare professionals and better serve the public."

Henry N. Wagner Jr., MD

Nuclear medicine trailblazer



Without Henry N. Wagner Jr., MD, you can't help but wonder where the field of nuclear medicine would be. Perhaps still in the dark ages. But because of his accomplishments, a new world of molecular imaging was uncovered.

"When I began my medical career, I felt like a man standing in two rowboats," Wagner says. "In 1958, I was beginning

my residency in internal medicine, but I'd also become fascinated by the new field of nuclear medicine. I wanted to explore them both and I did, but I worried that the two fields might gradually start floating off in two different directions."

In the 1960s, his curiosity peaked. Wagner wanted to track biochemical events as they occurred in the body; however, the day's isotope of choice was too weak to escape the body. So he sparked a revival in cyclotron-produced short-lived isotopes whose high energy allowed them to escape from the body while permitting researchers to measure their activity.

In 1963, Wagner's lab was the first to track clots in the lung. In 1968, he studied the use of radiolabeled albumin

for imaging pulmonary embolisms. In 1983, he was the first to image neuroreceptors in the brain, and the following year, he located the opiate receptors.

Wagner is regarded as the "father of the VQ scan," or ventilation-perfusion, which studies airflow and blood flow in the lungs. This test is used to see if a blood clot has blocked blood flow through a part of the lungs to confirm or exclude a pulmonary embolism diagnosis.

During the past five decades, Wagner's groundbreaking work has ranged from applications in nuclear medicine, pulmonary and coronary artery disease, brain chemistry and radiolabeled isotopes. And most of his time has been spent researching, training and teaching new talent at Johns Hopkins University in Baltimore.

These accomplishments have led to three honorary degrees and numerous awards, including the Georg Von Hevesy Award in 1985 and the 1991 American Medical Association's Scientific Achievement Award. He was decorated with the first annual SNM President's Award for outstanding contributions to nuclear medicine in 1993 and with the Cassen Award in 1998 for lifetime achievement.

Wagner says his most important work has been in the study of brain chemistry. "Until recently, philosophers and psychologists had to rely on introspection to fathom the workings of the mind," he says. "Nuclear medicine has made it possible to explore the chemistry of the living brain and its relationship to thinking, behavior and emotions."

Now, as an internationally known and respected expert in nuclear medicine, when Wagner talks, the world listens. He was an advisory expert for the Network of World Health Organization Collaborating Centres, a member of the National Institutes of Health (NIH) Ad

Hoc Advisory Board on PET and a member of the FDA Panel for Radiology Devices. Wagner was elected to the Institute of Medicine of the National Academies and serves as a national consultant in nuclear medicine to the Surgeon General of the United States and as a consultant in nuclear medicine to Walter Reed Army Medical Center in Washington, D.C.

Currently a professor of radiological science and environmental health sciences at Johns Hopkins, Wagner also serves on research committees for the NIH, the National Research Council and the Nuclear Regulatory Commission.

His recent focus has been on the need for application of telecommunications to improve the delivery and practice of diagnostic imaging and medicine. "The volume of medical information that already exists is far too great for us to continue to rely on the information that physicians can carry in their minds or find using a literature search," says Wagner. "We have to use the technological tools available to manage this wealth of information and make it accessible."

He envisions an international health manifestation database (IHMD) where everyone has a periodically updated portable electronic record that contains lifetime manifestations of his or her state of health. "Rather than trying to give a name to a patient's disease, the person's electronic health record will reveal all the 'manifestations' of the patient's health and illness," Wagner says. "The manifestations on a patient's 'health chip' can be automatically compared to the IHMD to characterize illness, predict what is likely to happen and suggest possible treatment."

25
Most
Influential

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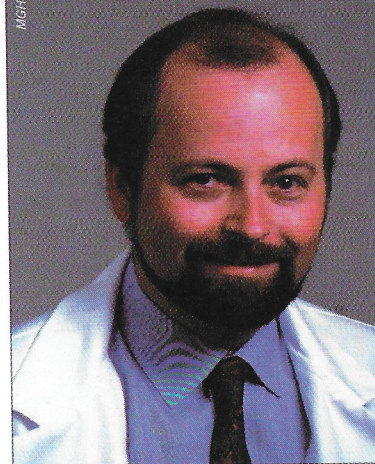
Ralph Weissleder, MD, PhD

Leading the imaging revolution – one cell at a time

From time to time, the world of science stands on the edge of a monumental discovery, precariously positioned on the cusp of a brave new world. Whether it's an Augustinian monk laying the groundwork for modern genetics while toiling in his pea garden or a German-born radiology professor transforming medical imaging in his Harvard laboratory 150 years later, it's during these revolutionary episodes that we gain further insights into the secrets that shroud the mystery of life. The future is a matter of conjecture. The only certainty is that a new world awaits.

Today we stand at that threshold yet again as researchers across the country continue to explore the

vast uses of molecular imaging – what many believe to be the future of medicine. At the forefront of this cutting-edge research is Ralph Weissleder, MD, PhD. As the director of the Center for Molecular Imaging Research (CMIR) at Massachusetts General Hospital (MGH) in Boston, Weissleder continues to lead the investigations of combining genetic information



and new chemistries into new imaging probes, detectable by sophisticated imaging technologies. The result: diagnostic imaging techniques so detailed physicians are able to visualize the disease process at the cellular level – the precise moment when normally functioning cells conspire to become malignant.

“Dr. Weissleder is considered one of the most influential people in radiology because of his passion and drive to translate molecular imaging into the clinical arena, where it will be useful to patients with clinical disease. His work at CMIR has revolutionized how people view diagnostic imaging,” says colleague Farouc A. Jaffer, MD, PhD, attending interventional cardiologist at MGH. “His efforts have created advances in clinical imaging, drug discovery and safety profiling and are helping physicians understand a myriad of biological pathways and processes. In the future, more of his work should translate into the clinical arena, where it could be used to better image patients with cancer, coronary artery disease and rheumatoid arthritis.”

The scope of his research is inspiring, but not surprising, continues Jaffer. “He is one of the most driven and talented scientists I have ever known. He has a broad vision of the future of molecular imaging and is able to convey his insights with great enthusiasm and precision. He demonstrates a high level of scientific creativity while remaining incredibly disciplined and organized.”

Weissleder’s achievements include imaging gene delivery and gene expression during gene therapy. “Since such methods did not exist until very recently, a major focus of my research has been the development, testing and application of different strategies using nuclear, magnetic resonance and optical imaging,” says

Weissleder. “Specific examples of engineered proteins and reporters include mutant tyrosinases, GFP fusion proteins, the development of technetium binding proteins, enzyme systems and internalizing receptors such as mutants of the transferrin receptor. In collaboration with colleagues from other departments and institutions, many of these reporter systems are now undergoing pre-clinical testing.”

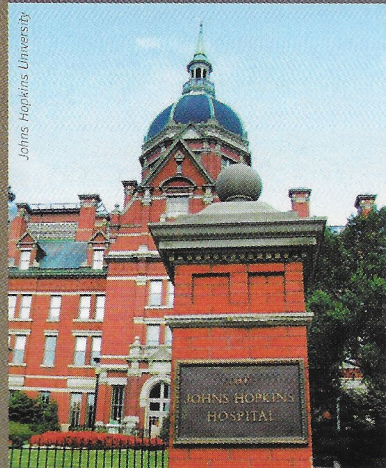
Another long-standing research interest has been the imaging and tracking of individual cell populations in vivo including stem and progenitor cells. While the CMIR developed methods of superparamagnetic cell labeling more than 10 years ago, it has not been until very recently that the use of membrane translocation signals has afforded the much-required higher loading capacity of cells. “Having the necessary tools at hand, we are now interested in exploring how the localization and retrieval of cell populations in vivo will enable detailed analysis of specific stem cell and organ interactions critical for advancing the therapeutic use of stem cells,” Weissleder says.

“Advancements arising from this research can enhance our knowledge of disease, lead to earlier disease detection and accelerate drug discovery,” he continues. “The research field has had a significant impact on biomedical research and the clinical practice of imaging.”

Well-equipped with a unique combination of first-class laboratories for chemistry, biochemistry, molecular biology, cell culture and animal studies, together with a wide range of dedicated, state-of-the-art imaging equipment, the CMIR at MGH is certainly leading the way in the most influential evolution of medicine – molecular imaging.

Johns Hopkins University

Research pushes the envelope



By any yardstick, this is a time of significant breakthroughs in medicine for Johns Hopkins University in Baltimore. A 2003 Nobel Prize, a new \$140 million research tower, an academic division in Singapore, the world’s first triple-swap kidney transplant, a top honor roll ranking as one of

the best hospitals in the country for the 14th consecutive year ... and that’s just the beginning.

In March, researchers announced they had used a chemical marker detected by proton MR spectroscopic imaging to successfully diagnose breast cancer, finding that choline signals analyzed by MRI were elevated in malignant tumors. While this method may not prove to be cost effective in everyday diagnosis, it may prove to be a viable, non-invasive alternative to biopsy in cases with positive mammograms or clinical breast exam results.

Several individual Johns Hopkins pioneers garnered top honors this year. The American Association for Cancer Research presented two of its top awards to David Sidransky, MD, for his discoveries that led to developing broad-based, non-invasive screening tests that detect genetic biomarkers for cancer in body fluids, and to Paul Talalay, MD, for his discovery that sulforaphane, a compound in broccoli and other cruciferous veggies, enhances the effects of enzymes that defend against cancer. Gene hunter Bert Vogelstein, MD, was chosen for the 2004 Prince of Asturias Award for Scientific and Technical Research, which recognizes his lifetime achievements in science, specifically for his investigations to unravel the mysteries of cancer genetics and pursuits for novel therapies.

Johns Hopkins researchers also found: MRI to be a useful tool in diagnosing children with inflammatory bowel disease; atrasentan drug reduces a man's risk that cancer will progress in advanced hormone-resistant prostate cancer; docetaxel drug decreases the chance of dying by 24 percent in advanced-stage prostate cancer patients resistant to hormone therapy; and a gene-expression "signature" is common to distinct types of cancer, renewing hope that a universal treatment might be found.

Most recently, the National Human Genome Research Institute awarded a grant to Johns Hopkins to establish a Center of Excellence in Genomic Science. Hopkins will assemble interdisciplinary teams of scientists to make critical advances in genome science.

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Toshiba America
Medical Systems

Aquilion sets the pace

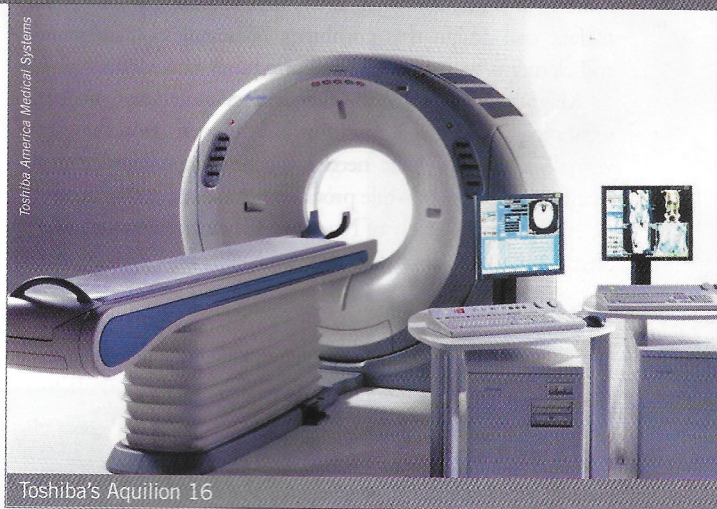
Tustin, Calif.-based Toshiba America Medical Systems is synonymous with CT, arming its latest scanner with 64-slice capability and the speed to back it up.

The 64-slice system has its roots in the award-winning Aquilion 16 multislice CT scanner. Last November, business consulting firm Frost & Sullivan honored Toshiba's 16 multislice scanner with the Medical Imaging Product of the Year Award.

"While other 16-slice CT scanners may have been quicker to market, the Aquilion 16 comes to the market with a greater number of features designed to suit customer needs and to provide a competitive advantage to Toshiba Medical in the CT market," says Monali Patel, industry manager with Frost & Sullivan.

Upon its release last year, the Aquilion 16 captured 16 0.5 mm slices with a 400-millisecond gantry rotation, while competing 16 slice CT scanners which produced slices 25 percent to 50 percent thicker and required a slightly longer gantry rotation time. The scanner's ability to capture 16 simultaneous 1 mm or 2 mm slices allows it to cover a larger area in a short time. A 32 mm detector along the patient axis enables the Aquilion to cover a large anatomical area in a single scan, ideal for injured patients or those unable to lie still for long periods.

The advances in the Aquilion 16 have allowed for new types of procedures using CT, such as CT



Toshiba's Aquilion 16

angiography (CTA) to replace traditional invasive procedures.

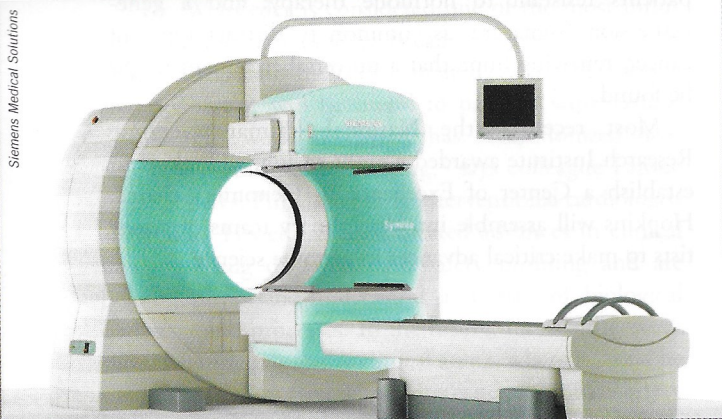
An important alliance in May between Toshiba, Plymouth, Minn.-based Vital Images and top cardiologists at Johns Hopkins University School of Medicine, Baltimore, has brought about the development of applications for high-resolution, multislice coronary CT angiography. The new applications have enabled cardiologists to quickly obtain higher quality images of the heart and cross-examine the coronary arteries for abnormalities and blockage. The applications also allow cardiologists to better explore the viability of using coronary CTA as a diagnostic alternative to conventional angiography.

Siemens Medical Solutions

Imaging's double impact



Siemens Medical Solutions



Siemens' Symbia TruePoint SPECT/CT

At last year's annual meeting of the Radiological Society of North America in Chicago, Siemens Medical Solutions, Malvern, Pa, introduced a technology they boasted would dramatically change and improve MRI. Total imaging matrix technology – Tim™, as it is now more commonly known – is the first seamless, whole body surface coil design that combines 76 seamlessly integrated coil elements with up to 32 radiofrequency channels.

Magnetom® Avanto, the first MR system based on Tim technology, provides significantly improved workflow by virtually eliminating the need for patient repositioning and manual coil changes, while providing enhanced image quality.

At this year's Society of Nuclear Medicine annual meeting, Siemens once again made everyone take notice with their

introduction of single-photon emission computed tomography (SPECT)/CT hybrid imaging technology. It is one of the first systems to combine the functional sensitivity of SPECT with the rich, anatomical detail of diagnostic multislice CT, providing clinicians with better imaging clarity and diagnostic confidence.

“The introduction of TruePoint™ SPECT/CT technology and the Symbia family again demonstrates the commitment Siemens has made to developing leading-edge technology that is responsive to the needs of our clinical partners,” says Michael Reitermann, president of Siemens Medical Solutions' Nuclear Medicine Group. “TruePoint SPECT/CT delivers on the current and future promise of nuclear medicine by maximizing molecular information in combination with precise anatomical detail,” says Michael Reitermann, president of the Siemens Medical Solutions nuclear medicine group. “This new technology will enable our customers to further pinpoint the exact location, size, nature and extent of disease – anywhere in the body.”

TruePoint SPECT/CT has the potential to revolutionize diagnosis and treatment for cancer, cardiac and neurological diseases. With a single scan, this imaging technology quickly captures accurate, comprehensive diagnostic information both on the molecular and anatomical levels and will enable physicians to detect changes in molecular activity even before structural changes become visible.



Helen Barr, MD

Ensuring quality mammograms for all women



After 12 years on the front lines of diagnostic radiology – with a focus on mammography – Helen Barr, MD, is redirecting her clinical skills and leadership strengths as the director of the FDA's Division of Mammography Quality and Radiation Programs.

“After years of focusing on individual patient needs, I thought I could find professional growth in looking at mammography from a public health standpoint,” says Barr.

A graduate of George Washington University School of Medicine and Health Sciences in Washington, D.C., Barr remained at the university for her post-graduate training. After completing her internship in internal medicine, she completed her residency in diagnostic radiology.

In her 10 years with Kaiser Permanente in Kensington, Md., Barr served as lead radiologist for eight years. For six

years, she also functioned as the mammography modality manager, overseeing nine mammography centers that performed more than a total 60,000 mammograms each year. Barr has been with the FDA for five years, serving as the deputy director before taking the helm as the director three months ago. She also currently serves as a federal member on the Center for Disease Control and Prevention's Breast and Cervical Cancer Early Detection and Control Committee.

Having been on the "other side" of MQSA at the facility level, Barr believes she has brought a different perspective to MQSA decisions. Although she will not continue in private practice, Barr plans to continue reviewing mammograms to keep current with MQSA requirements for interpreting physicians. Maintaining this involvement will allow her to integrate the experiences of mammography facilities with the mandates of MQSA, she notes.

Barr wants mammography facilities to know "they are not alone out there." A big focus at the FDA is to support the facilities, as evidenced by the Facility Hotline and web site www.fda.gov/cdrh/mammography. She envisions facilities and the FDA as partners in ensuring high-quality mammography for American women. In noting that MQSA has "leveled the playing field" for mammography services, Barr points to MQSA's role in narrowing quality gaps between facilities so that any woman, anywhere, can know that she has received a good mammogram from a top-notch professional.

With a clear understanding of women's mammography needs and rights and the perspective of mammography facilities garnered through hands-on experience, Barr brings a fresh perspective to the oversight of MQSA implementation and influences the ability for all women to have access to quality mammograms.



ASRT Government Relations

Strong voice on Capitol Hill

Filling the eighth spot on our most influential list is the American Society of Radiologic Technologists (ASRT) Government Relations team. Through their tireless efforts, Christine Lung, Dave Goch, JD, and Bill Finerfrock – a trio well-known by Washington, D.C., insiders – have led the fight for better patient care in support of the CARE bill – legislation that, if passed, will set federal minimum standards of education and certification for professionals who deliver radiation therapy and perform many types of diagnostic imaging exams.

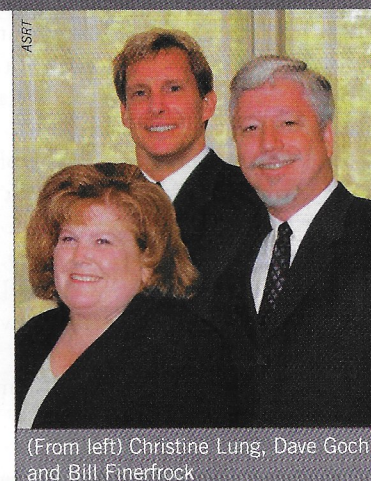
With almost 5,000 bills currently before the House and another 2,700 before the Senate, getting the message out on the Hill is easier said than done. Yet, the CARE bill boasts 109 co-sponsors in the House and 18 in the Senate. It's an amazing feat, says Gary Duehring, PhD, CRA, RT(R), who credits their success to persistence. Duehring, who has worked closely with the ASRT team on promoting the CARE bill, knows firsthand that determination is an essential asset inside the beltway.

"In dealing with legislation, I have learned that it's the squeaky wheel that gets the grease. Christine, Bill and Dave do not let up on those ears on the Hill. When the RTs show up for the RT in DC grassroots effort, everyone, and I do mean everyone, that I spoke with knew about the CARE bill and why we were there," says Duehring. "This effort has been no easy task but through the guidance of these three, our professional efforts have broken down staunch state rights individuals in both chambers, and the people we serve are seen as

individuals who deserve competent, quality care no matter where it is provided. I am proud to be counted among those who are associated with these three 'non-RTs' who know and feel our desire to truly advocate for the patients who assume that their caregivers are deserving of their trust."

Another key to their success is that they truly enjoy their work, says Sharon Wartenbee, RT(R)(BD). As the chair of the ASRT task force on RT advocacy, Wartenbee has the privilege of working very closely with all three. "Christine, Bill and Dave work as a team and have fun doing it," she says. "They have become close friends over the past six years and I think that is one of the reasons they are so effective."

The government relations department is more than just a job, Wartenbee continues. "Christine is available around the clock to all of the state affiliates working to promote federal minimum standards. She is our driving force. And Bill and Dave also have a deep commitment and are on Capitol Hill doing all of the essential follow-up work. They know our representatives on a personal basis and work diligently to gain support for the CARE bill. We could not do this without their expertise."



(From left) Christine Lung, Dave Goch and Bill Finerfrock

Philips Medical Systems

Combining technology and leadership



Philips' Integris Allura

Philips Medical Systems

Brilliance, Achieva, Allura, Gemini, Sonos ... Bothell, Wash.-based Philips Medical Systems seems to have effortlessly added these product names to the modern-day radiologic dic-

tionary. And the company's new Precedence system, a hybrid SPECT with multi-slice diagnostic CT, stands to follow suit as the Netherlands-based company continues to bring technologies to market that address current and future needs.

Philips' product line includes best-in-class technologies in X-ray, ultrasound, MR, CT, nuclear medicine, PET, radiation oncology systems, patient monitoring, information management and resuscitation products, as well as asset management, training and education, business consultancy, financial services and e-care business services.

Working with some of the most prestigious facilities in the country is not new territory for Philips. Physicians at Montefiore Medical Center in New York City are enjoying speedy MR capabilities for the head, neck and spine with the Intera 3.0T. "Montefiore is the only hospital in the New York region with a compact, whole-body Philips 3.0T MR system and we're delivering leading-edge MR imaging services to New York metro area residents," says Michael Lipton, MD,

director of MR services at the facility. And the University of Michigan Medical Center, Ann Arbor, recently installed four of the MR machines for the radiology department.

"Philips is committed to advancing patient care through medical research using the latest scientific knowledge and state-of-the-art diagnostic and therapeutic techniques," says Jacques Coumans, PhD, Philips' vice president of global marketing MR.

The University of Chicago Hospitals stockpiled six CT scanners, several MR scanners, diagnostic X-ray systems, nuclear medicine equipment and patient monitoring systems, as well as medical information processing and technology in a recent long-term research agreement with Philips focusing on CAD for CT, with special focus on lung cancer. "This brings some exciting new technology to Chicago," says Richard Baron, MD, professor and chairman of radiology at the University of Chicago. "It provides a recognized and respected center for clinical testing of new medical imaging products."

Through about \$6 trillion in acquisitions between 2000 and 2003, Philips doubled the size and scope of its medical systems business. In 1998, Philips Electronics acquired ATL Ultrasound. In November 2000, Philips acquired ADAC Laboratories and Agilent Technologies' Healthcare Solutions Group and in October 2001, it acquired Marconi Medical Systems.

University of Michigan Health System

Advancing a cure for prostate cancer



Ranked 11th overall in the nation on *U.S. News & World Report's* "Best Hospitals" list, the University of Michigan (U-M) Health System, Ann Arbor, was recognized in nearly all specialties this year. U-M's highest position came in cancer research, breaking the top 10 with a seventh overall ranking in the United States. In particular, U-M has excelled in prostate cancer research, both in finding a cure and examining patients' quality of life (QoL).

In June, a U-M research team received a \$7.4 million grant from the National Cancer Institute's Prostate Cancer Progress Review Group to tackle four different research projects, each intended to define the cellular and molecular mechanisms that lead to prostate cancer skeletal metastases. Principal investigator Evan T. Keller, MPVM, DVM, PhD, hopes this program will yield understanding of the interaction between prostate cancer cells and the skeletal structure and eventually the team's findings will translate into the clinical setting to help patients suffering from advanced prostate cancer.

Another recent study from the health system tracked the quality of life (QoL) for men four to eight years after they had undergone treatment for prostate cancer. Researchers recorded both positive and negative changes

in the patients. What separates this study from other QoL studies on prostate patients is the timeline. Where previous research documented the effects of prostate cancer treatment on QoL two years after treatment occurs, this is the first study to look at these issues beyond five years after treatment.

"Over the long term, some men who are treated for prostate cancer may continue to have varying degrees of urinary, sexual or bowel dysfunction when compared to men without prostate cancer," says the study's lead author David Miller, MD, a fellow in urology at the U-M Medical School. "When we looked beyond two years of follow-up, we saw quality of life outcomes continue to change for men treated with either type of radiation – some for the better and some for the worse."

11

Carole South-Winter,
MEd, CNMT, RT(R)

A matter of ethics

Sure, everybody says they have their own steadfast set of morals and beliefs, but when it really matters are you willing to stand up for what you believe in? Carole South-Winter, MEd, CNMT, RT(R), president of the Association of Educators in Radiological Sciences (AERS), is proving that ethics are something to live by every day – even when it means making life-changing decisions.

South-Winter has a long list of distinguished service in her profession – but perhaps her greatest achievement is building one of the largest nuclear medicine schools in the country. After 20 years of hard work, she developed a reputable program that churned out stellar students who were actively sought by hospitals across the country, as well as overseas. "I was extremely proud of my students," says South-Winter. "Graduates passed the registration exams with exceptionally high rates and they consistently posted employer satisfaction surveys that were off the charts."

But the mutually rewarding career as program director came to a sudden halt one spring afternoon when South-Winter took a stand and made a considerable sacrifice – she left the job she loved.

The decision stemmed from a relatively common incident that eventually snowballed into the ultimate test of her moral fortitude. "It began," she says, "when I caught a group of students cheating on a class project and decided to fail the students for the project."

Although not an easy decision, the situation escalated when the school's board of directors stepped in and overturned her decision.

"It was appalling," says South-Winter of the board's decision to pass the group. "One of the goals I emphasized

was that were trying to reach the status of professional, not vocational or technical. We wanted to provide a well-rounded education to sharpen students' oral and written communication skills. How can you do that if you're passing students who are cheating? As my college said, how can teachers go back to teaching a class on medical ethics when I played a role in passing students who were clearly not capable of meeting the standards?"

Her decision sent a message across the country – a message that Richard Lewis, CRA, manager of hospital radiology services at DeKalb Medical Center, Decatur, Ga., says has influenced many in the field.

"Carole is deserving of the title 'most influential' because she was willing to make a life-changing decision that could have affected her family and her professional standing, yet she did so because it was the right thing to do. Period," says Lewis. "Her principled decision shows not only her students, but also her peers what kind of ethical standards we should embody, as well as how seriously we should stand by them. When we think of the trust that our patients and community demonstrate toward us, it is critical that we lead the way in making proper ethical choices."

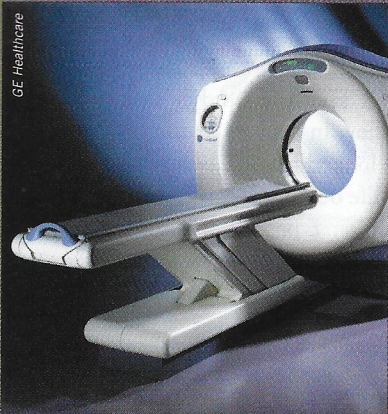
"Ethics are important in any profession, but especially in a profession that's looking for a professional status," says South-Winter. "When you start lowering the bar and letting things slide, you begin to dilute your own field. Sometimes you just have to stand up for what you believe in."



GE Healthcare

New name, same vigor

12



GE Healthcare's Discovery ST

Through the acquisition of Amersham plc, General Electric Medical Systems not only gained a new name – GE Healthcare – but an expanded global influence. Now with broad expertise in imaging, diagnostic pharmaceuticals and drug discovery, molecular imaging and personal health-care are sure follow.

This year, a giant stride was recognized in the ultrasound market, with GE seeing its ninth year of double-digit growth (18 percent) and revenues surpassing \$1 billion.

Important milestones were also met in nuclear medicine, with the 100th Discovery ST PET/CT system installed just months after its induction. The system combines PET and CT in a single, non-invasive exam that provides both functional and anatomical images for

detecting, diagnosing and treating cancer and heart disease. And GE's new PETtrace cyclotron technology, announced in June, enables isotope and radiotracer production for PET imaging.

The country got a sneak peak of GE's Innova® 3100 in February when it debuted on the popular NBC drama "ER." The technology diagnoses and treats heart and vascular diseases by allowing physicians to see the vessels and anatomy inside the heart, as well as the finest vessels all the way to the fingertips. In addition to emergency room settings as portrayed in the show, the Innova 3100 will play a role in treating chronic heart and vascular conditions.

CT was also an area of excitement, with GE Healthcare completing the first patient scans using the LightSpeed VCT at Froedtert Hospital in Milwaukee. The CT system can capture any organ in one second, scan the entire body in less than 10 seconds and capture images of the heart and coronaries in fewer than five heartbeats. The 64 credit card-thin images acquired during the scans are combined to form a 3-D view of the patient's anatomy.

M. D. Anderson Cancer Center

Breast cancer research

13



M. D. Anderson Cancer Center

One area where the University of Texas M. D. Anderson Cancer Center in Houston continues to excel is in breast cancer research. A study in June found that two proteins that normally help cells move from place to place and are made in large quanti-

ties in breast cancer cells work together to promote the survival and spread of breast cancer. The finding links, for the first time, two proteins known to influence cell shape and survival of cancer cells. When the scientists created a single change in a small 19-amino acid portion of one of the proteins, it stopped tumor formation. The results may lead to new strategies to trigger cell death in cancer cells, the scientists say.

"We can now target these 19 amino acids," says Rakesh Kumar, PhD, professor of cellular and molecular oncology at M. D. Anderson and the study's lead investigator. "We might be able to develop a small molecule, a drug that could target the business end of this protein to interfere with the transformation process."

In another study earlier this year, a gene known to promote longevity in animals – Forkhead box

class O3 (FOXO3) – was discovered to encode a tumor suppressor. The new gene, which was inactivated in two-thirds of patients studied, presents a potent new target for breast cancer therapy, the researchers say.

Scientists describe how the presence of FOXO3 is associated with better outcomes for breast cancer

patients. Conversely, if FOXO3 was inactivated, patients had worse outcomes.

“This is a very good prognostic marker for breast cancer patient outcome,” says Mien-Chie Hung, PhD, the co-principal investigator of the study. “In addition, these proteins provide new targets for cancer therapy and prevention.”

14

The DICOM Standard

Guardian of digital imaging

Although not a person or institution, the Digital Imaging and Communications in Medicine (DICOM) Standard continues to have a substantial influence over radiology.

Numerous and diverse medical specialties create biomedical images. The DICOM Standards Committee exists to create and maintain international standards for the communication of biomedical, diagnostic and therapeutic information in those medical disciplines that use digital images and associated data.

The goal of the DICOM Standard is to achieve compatibility and improve workflow efficiency between

imaging systems and other information systems in health-care environments worldwide.

DICOM is a cooperative standard. Connectivity works because vendors cooperate in testing via scheduled public demonstrations, over the Internet and during private test sessions. Every major diagnostic medical imaging vendor in the world has incorporated the standard into its product design and most are actively participating in the enhancement of the standard. Most biomedical professional societies throughout the world support and participate in the enhancement of this standard as well.

15

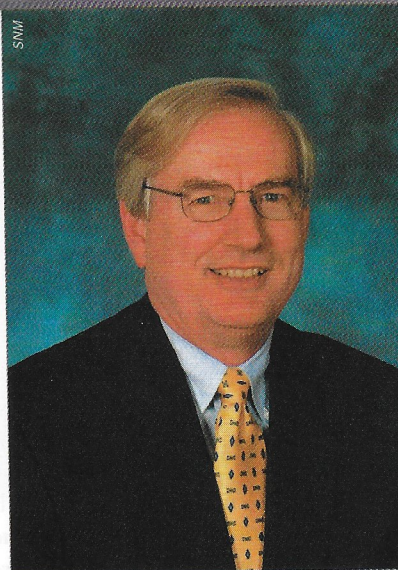
Henry D. Royal, MD

Serving through service

During his reign as president of the Society of Nuclear Medicine (SNM), Henry D. Royal, MD, made it a point to reach out – “to other specialties, to patient groups, to the federal regulatory structure, to pharmacists and scientists and to [SNM] members.” But while he may have stepped off the presidential throne just a few months ago, there’s no sign that he’s slowing down. Not only does he serve as professor of radiology at the Washington University School of Medicine in St. Louis, associate director of nuclear medicine at the Mallinckrodt Institute of Radiology and on the board of directors for the National Council on Radiation Protection, he has just taken on the challenge of executive director of the American Board of Nuclear

Medicine. And he couldn’t be happier, saying, “This is a very exciting time for nuclear medicine.”

In addition, he is an investigator for the Prospective Investigation of Pulmonary Embolism Diagnosis II study, a member of the board of directors and has been named one of the “Best Doctors in America” for more than 10 consecutive years.



Massachusetts General Hospital

All in the genes

16



Once again, Boston's Massachusetts General Hospital (MGH) has gained a spot on our most influential list for their extensive breast cancer research. MGH conducts the largest hospital-based

research program in the United States, with an annual research budget of more than \$400 million.

In June, MGH researchers announced that a simple measurement of the expression levels of two genes in breast cancer tissue appears to identify tumors that are more likely to recur in women treated with tamoxifen for early-stage disease. Determining patients for whom tamoxifen treatment is likely to fail would allow earlier use of other therapies that could be more effective for those women.

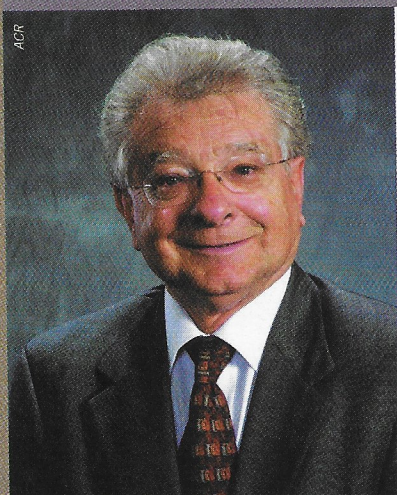
Earlier in the year, researchers discovered a molecular marker that identifies lung cancer patients whose tumors will respond to treatment with the drug Iressa (gefitinib).

"This discovery will help us significantly improve the treatment of many lung cancer patients and is also an important next step in the molecular targeting of cancer drugs," says Daniel Haber, MD, PhD, director of the MGH Cancer Center and senior author of the study.

Charles Williams, MD

Winning radiologist support for the RA

17



How do you create a new career in an industry full of vigilant professionals defending their turf? With hard work, unwavering dedication and a little bit of Southern charm.

Establishing the radiologist assistant (RA) – the new advanced practice career for radiologic technologists – was no easy task, says Charles Williams, MD, chairman of the American College of Radiology (ACR) human resources commission – the man many consider to be the primary catalyst behind the RA. One of the most difficult parts, he says was gaining support from all parties involved –

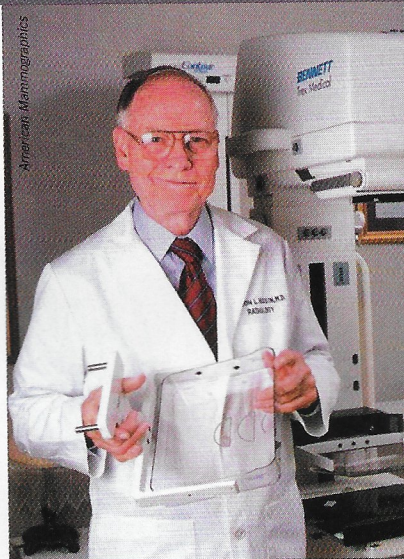
especially from radiologists who originally perceived the new position as competition. Without their support, the RA concept would be just that – a concept.

It was Williams' hard work – numerous weekends spent on the road meeting with stakeholders, speaking with legislators and persuading ACR members – that helped turn an idea into reality, says Stephen Amis Jr., MD, president of the ACR. "I give Dr. Williams a tremendous amount of credit for the success of the RA. For the past three years, he's been instrumental to its success," says Amis, who points to Williams' ability to develop a remarkable rapport with the technologist community. "It gave him a great deal of credibility in their eyes and added an awful lot to the way we worked collegially as groups so we could sit down and get this new position off the ground. He's truly one in a million."

18

Gordon Hixson, MD

Making mammo better



American Mammographics

It's no secret mammography has taken a beating during the past few years. The screening tool has been chastised mainly for its lackluster ability to detect hard-to-find breast cancers. A study published in the October 2002 issue of *Radiology* found that mammography missed an alarming 56 percent of cancers in extremely dense breasts.

And while others have urged exploring the use of alternative screening techniques, one radiologist is simply working to make mammography better. By creating a unique spot cone incorporated into the top of a platform, technologists can easily get focal compression of both sides of the breast. Inventor of the MammoSpot® and S.O.F.T. Paddle®, Gordon Hixson, MD, has, in effect, created a simple tool that saves lives – not to mention a modality at the end of its rope.

"I have never experienced image details visualized with such sharpness as those obtained with Dr. Hixson's new plate [S.O.F.T. Paddle]," says renowned breast cancer expert

László Tabár, MD. "This product can be considered one of the most important, simple tools in improving image quality that we have seen in the past decade."

His inventions have been quickly adopted in clinical practice because they are convenient and ingenious, explains Tabár. "They help radiologic technologists produce better images, resulting in more accurate film interpretation and diagnosis. The secret of their magnitude lies in their honest, down to earth nature. He is a truly good physician, a caring person who always looks for a possibility of improving patient care."

MSVILLI

19

Mayo Clinic

Living up to reputation

Nestled comfortably in the new 20-story Leslie and Susan Gonda Building in downtown Rochester, Minn., Mayo Clinic researchers have been very busy. By manipulating a human antibody to induce anti-tumor response in living mice, malignant melanoma was curbed and often cured. Using this antibody, immune response can be trained to strike a new target.

A clinical study conducted by Mayo researchers indicates that FOLFOX 4 treatment helps patients with advanced colorectal cancer live significantly longer with fewer side effects than with standard chemotherapy treatment. This new chemo drug combination could affect thousands of patients. Mayo Clinic oncologists identified a drug combination to treat metastatic breast cancer, and a clinical study performed at the Scottsdale,



Mayo Clinic

Ariz., facility showed that laparoscopy is as effective at removing cancerous kidney tumors as open surgery.

Sectra Medical Systems

Perception is everything



Princess Christina, Mrs. Magnusson at the opening ceremony of the Center for Diagnostic Imaging at Södersjukhuset, Stockholm, which is equipped with Sectra PACS and RIS.

It's almost as if Sweden-based Sectra Medical Systems is using a crystal ball to plan its next move. They have been able to identify new market segments to rake in the customers by perceiving their needs.

"Sectra has proven business methodologies well in line with its corporate objectives of establishing a strong global brand and a high market rate," says Siddharth Saha, a healthcare analyst at Frost & Sullivan, which honored Sectra with a business development strategy leadership award and the Medical Imaging Company of the Year 2004 award.

Sectra's rapid ascent is apparent with its 18 percent revenue increase during the last year. An aggressive PACS portfolio, a demonstrated full-field digital mammography system and niche alliances in 3-D imaging, HIS/RIS integration and CAD has strengthened the company's global market presence.

"By associating with technology partners," says Saha, "Sectra has demonstrated that it is quick to respond to industry challenges and that it has wasted no time in developing its product portfolio with new applications in line with market need."



Frost & Sullivan

Just the facts



Growth consulting, market consulting, research, training, special events – for the last 40 years, Frost & Sullivan has been a ubiquitous source of information for vendors, hospitals and imaging centers.

On the research side, Frost & Sullivan interacts with customers on a number of levels. Customers can buy growth consulting reports to create strategic programs, market consulting for tailored research, annual interactive subscriptions services or individual research reports. The training division offers tailored development solutions, as well as public courses and a series of international events and conferences.

Expanding on the success of their analyst briefings and executive summits, Frost & Sullivan's eBroadcast division delivers one-hour, topic-specific seminars packed with the information and insights needed to address real-world business needs to get your facility back on track.

And above all, Frost & Sullivan's market reports let hungry executives know the status of everything from PET to PACS. Their predictions and business strategies can set the stage for the next big thing.

22

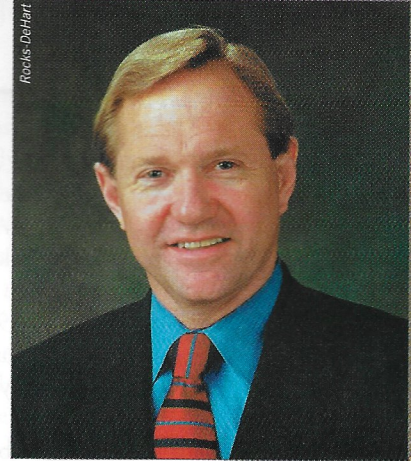
Quint Studer

Leading the leaders

When hospital CEOs need advice, to whom do they turn? One of the most influential healthcare leaders in the country, Quint Studer is devoted to teaching organizations how to achieve sustained focus on service and operational excellence. As founder and CEO of Studer Group, headquartered in Gulf Breeze, Fla., Studer comes equipped with 20 years of healthcare experience – a wealth of knowledge that has helped more than 300 radiology departments turn recruitment and retention from something to worry about into something to brag about.

Studer knows that high staff retention is one of the major keys to service and operational excellence. Happy employees are part and parcel of an excellent hospital and that's why reducing turnover must be a top priority.

"High employee turnover is a symptom of a larger problem," says Studer. "The most satisfied employees work in organizations that have systems and processes in place that are designed to sustain service and operational excellence. Employees are satisfied when patients are satisfied and vice versa. When you consider the fact that most radiology professionals receive calls from professional recruiters at least once a week, you begin to grasp the reality that employee satisfaction is a bottom-line issue. Now, more than ever, we must all make it a priority."



Rocks DeHart

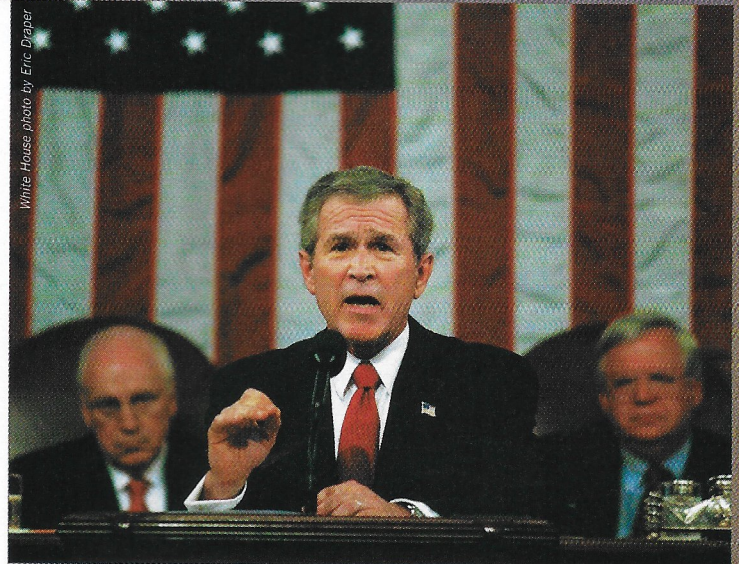
23

President George W. Bush

On the road to an EHR

Dub-ya. Love him or hate him, he still has a major impact on radiology, especially since his State of the Union Address in January focused on the need for an electronic health record (EHR). During the speech, the 43rd president drew national attention to what many radiology professionals have been striving for during the past decade: a connected enterprise.

"Our nation's healthcare system, like our economy, is also in a time of change," said Bush. "Amazing medical technologies are improving and saving lives. This dramatic progress has brought its own challenge in the rising costs of medical care and health insurance. Members of Congress, we must work together to help control those costs and extend the benefits of modern medicine throughout our country. ... By computerizing health records, we can avoid dangerous medical mistakes, reduce costs and improve care."



White House photo by Eric Draper

With a solid foundation of information standards already established, the rest of healthcare will surely turn to the imaging suite for guidance on how to progress to an EHR.

Helene Pavlov, MD, FACR

24



Hospital for Special Surgery

The Hospital for Special Surgery in New York City has found a true gem. Helene Pavlov, MD, FACR, is a board certified radiologist who has been specializing in orthopedic radiology since 1989. In that short time, she has turned heads as one of radiology's up-and-coming.

Already crowned one of the "best doctors in New York" by *New York Magazine* and the Consumer's Research Council

of America's *Guide to America's Top Radiologists*, Pavlov is a fellow of the American College of Radiology (ACR), an allied specialty member of the American Academy of Orthopedic Surgeons, a member of the Expert Panel Task Force on Appropriateness Criterion for Musculoskeletal Outcome Research Forum and a past delegate to the New York State Chapter of the ACR.

"Helene Pavlov is an exemplary department director who has created an extraordinary environment that fosters basic, translational and clinical imaging research," says Hollis Potter, MD, attending radiologist at the Hospital for Special Surgery. "She encourages striving for excellence in the clinical assessment of soft tissue and osseous pathology, providing support for new applications of advanced imaging techniques."

JRCERT

Creating a standard

25

In a profession constantly striving to establish consistency among its peers, perhaps nobody has more influence making sure a first-class education remains top priority than the Joint Review Committee on Education in the Radiologic Sciences (JRCERT). As the only organization solely dedicated to improving educational standards in radiologic technology, the JRCERT has fueled the growth and professional status of a career often obscured by larger healthcare professions.

"The JRCERT is deserving of the title 'most influential' because it ensures the quality of an educational program in terms of both the depth and breadth," says Kevin Rush, RT(R)(T), chief radiation therapist for the Cancer Centers of the Carolinas, Greenville, S.C., and site visitor for the JRCERT. "Simply having regional accreditation does not verify a program's ability to produce quality graduates."

As a site visitor, Rush can attest to the rigorous standards set by the JRCERT. In fact, he says many program directors realize the influence of how important receiving accreditation can be.

"Most, if not all, program directors are quite nervous when site visitors are on their campus. They have ultimate responsibility for the content of the program and have to answer to all the stakeholders – students, faculty, college or hospital administration – for any shortcomings that may be found," he explains. "That would make anyone in that situation – no matter how well prepared – a bit nervous."

Aside from a bad case of the jitters, the JRCERT wields yet another influence over program directors across the country. Starting in 2009, the new requisite for directors will be elevated from a bachelor's degree to a master's degree – a significant change considering 52 percent of radiography program directors and 51 percent of radiation therapy directors fall short of the new mark.

"Many program directors will have to return to college to work on the degree in order to maintain their position. When the deadline is upon us, I believe we will see many of the program directors retire, as they will not want to return to college," says Rush. "The requirement will be beneficial to the radiologic sciences but there will be a 'shake out' period where the number of program directors may drop."