RSNA® 2021 REDEFINING RADIOLOGY

Daily Bulletin

INSIDE WEDNESDAY

EXCLUSIVE ONLINE CONTENT

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Excellence, Respect and Responsibility in Radiology: Challenging Barriers

By Lynn Antonopoulos

"Relying upon one's strength when confronted by adversity is important, especially when dealing with those barriers that are tangible, and difficult to overcome," said Michele H. Johnson, MD.

Dr. Johnson is professor of radiology and biomedical imaging and neurosurgery, and director of interventional neuroradiology at the Yale University School of Medicine. When she was appointed professor at Yale in 2014, she was the first Black, female, full professor there, a circumstance she said was a long time coming.

In her Tuesday Plenary Lecture, Dr. Johnson spoke through the language of images to analogize the barriers she encountered in interventional radiology practice to barriers faced in creating an inclusive workplace. She talked about a variety of tactics, like using strength, assistance and creativity for overcoming these challenges. She also shared stories of her career path and important figures who had an impact on her progress along the way.

Johnson

Persevering Despite Adversity

Dr. Johnson endured racism at an early age and acknowledged the difficulty of remaining strong in the face of difficult barriers. She recalled starting first grade in the first year of desegregation following

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Always try to make a difference, and then when those challenges and barriers come, you have the strength to persevere and to think and to find your way around it, under it, over it or through it — just like a catheter intervention.

Michele H. Johnson, MD

Civility in the Workplace Improves Performance, Health of Organization

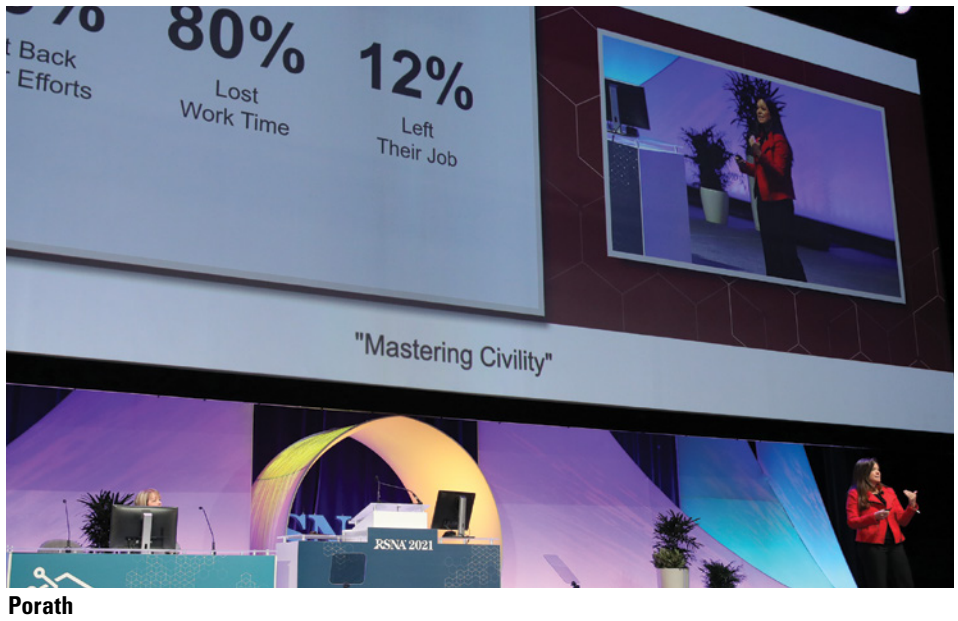
By Mary Henderson

Christine Porath, PhD, asked the audience in the Arie Crown Theater Tuesday afternoon this question: "Who do you want to be?"

The answer, she said, will dictate not only your personal and professional success, but also the success and culture of your team and your organization.

"Are we uplifting the people around us? Do they feel heard, appreciated and valued? Or are we holding people down by making them feel disregarded, unheard, insulted and disrespected?" continued Dr. Porath, associate professor of management at the McDonough School of Business at Georgetown University.

Her own experiences with incivility in the workplace drove Dr. Porath to leave work at the International Management Group, a leading sports management and marketing firm, to pursue an academic career that has received worldwide media



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Porath

Tuesday At a Glance

Special Session

11 a.m.-12 p.m. | Arie Crown Theater

Chong

Bernstein

Suzanne T. Chong, MD
Mark Bernstein, MD
Exciting Radiology Game Show: What's Your Emergency? Life in the STAT Lane
Using a game show format, two teams of emergency radiologists will tackle a spectrum of traumatic and non-traumatic cases, solve clinical workflow scenarios and address practice management issues.

Plenary Lecture

3 - 4 p.m. | Room E450A

Gibbs

Iris C. Gibbs, MD
Addressing the Continued Exclusion of Black Physicians in the US Radiation Oncology Workforce
Dr. Gibbs will discuss strategies to confront structural racism, provide access to early exposure to the field, improve leadership opportunities and remove barriers to diverse representation in radiology.

8 – 9 A.M.

Science and Education Sessions

10 A.M.

Discovery Theater Entertainment

9:30 – 10:30 A.M.

Science and Education Sessions

10 A.M.

Grand Concourse Entertainment

10 A.M.– 5 P.M.

Technical Exhibits
Industry Presentations

10 A.M.– 5 P.M.

Professional Portrait Studio
South Hall, Booth 1118

11 A.M. – 12 P.M.

Meet the RSNA Journal Editors:
Mariam Moshiri, MD
RSNA Case Collection™
South Hall, Booth 1000

11 A.M. – 12 P.M.

Science and Education Sessions

12:15 – 1:15 P.M.

Poster Discussions
Learning Center

1:30 – 2:30 P.M.

Science and Education Sessions

3 – 4 P.M.

Science and Education Sessions

4 – 5 P.M.

Poster Discussions
Learning Center

View the full program and add sessions to My Agenda at *Meeting.RSNA.org.*

Please note rooms will be cleared for 30 minutes between sessions for cleaning.

Wednesday's
Physics Tip

American Association of Physicists in Medicine

Image processing is a blackbox where algorithms are proprietary and vendor specific. Though it is time consuming, spending time with an expert adjusting the processing before clinical implementation can result in drastic image improvements.

Daily Bulletin

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Excellence, Respect and Responsibility

Johnson

the landmark Brown vs. Board of Education ruling that established racial segregation in schools as unconstitutional.

Born the only girl and oldest of three children in her family, she said her parents encouraged her to pursue education because it was a strength that could not be taken away. "You can always use your education and experience both to achieve your goals and to navigate when things get tough," Dr. Johnson said.

Dr. Johnson said another approach when challenges are particularly problematic, is to look to friends, colleagues and mentors for help. She acknowledged several of her early mentors, among them women and men, some of whom were Black professionals who helped her as she pursued her medical education. "A successful academic career seemed achievable for someone like me because they each came before. They set an example for how it could be done," she said.

In 1983, when Dr. Johnson considered her medical career path, she steered away from private practice because of pregnancy, complications in rotation schedules and other challenges that made the work more difficult for women. Instead she pursued a career in academia where she excelled even as she faced issues as the only woman in the room.

She revisited several experiences in which she witnessed or endured microaggressions from patients, their families and her own colleagues who were disrespectful and, at times, plainly rude. "In this real world, day-to-day, beyond conferences and cutting-edge science and innovation, we're not always successful in challenging the barrier. We're not always successful overcoming the barriers," she said. "Sometimes you can't fix it. Sometimes you walk away."

Finding the Path to a Good Outcome

Dr. Johnson emphasized the importance of staying true to yourself and striving for excellence despite adversity. She said disappointment can change your trajectory, but can also set you on the course for success. "Even an imperfect attempt at a maneuver can result in a good outcome."

Returning to the value of mentoring, Dr. Johnson said the experiences of mentoring, whether as mentor or mentee, can be very valuable. "Always try to make a difference, and then when those challenges and barriers come, you have the strength to persevere and to think and to find your way around it, under it, over it or through it — just like a catheter intervention."

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Civility in the Workplace

coverage as well as consulting engagements with leading international organizations including Google, the United Nations and the Cleveland Clinic.

Negative Effects of Incivility Are Far-Reaching

In her science-backed talk, Dr. Porath recounted research study after research study that demonstrates the consequences of the many different forms of incivility including mocking, teasing, rudeness or texting while in meetings. She cited numerous controlled studies that demonstrate the effects of incivility in workplaces, from reduced effort to poorer performance.

Incivility is like a virus, she said. It spreads quickly and widely, and it affects both our emotions and our attention.

"Even employees who witness rudeness perform far worse," Dr. Porath said. "They are also less likely to be helpful. Rudeness and disrespect affect the mind in profoundly negative ways."

Stress and a fear of 'being too nice' are the top explanations leaders give for rude behavior.

"Despite outliers who do get ahead while being uncivil, civility pays. Nice guys do get ahead in the long term," Dr. Porath said. "We know that people desperately want to feel respected and when they are, they are healthier, more focused and engaged, and more likely to stay."

Through her work with health care organizations and hospital administrators, Dr. Porath has seen examples of rudeness in the hospital setting leading to medical errors.

"We know that health care workers exposed to incivility shut down and become less likely to share information with their team members," she said.

To improve the culture of health care workplaces, Dr. Porath suggested focusing on recruitment and selection.

"We know that one toxic employee wipes out the gains of two or more superstars," she said. "You really want to do your homework."

Creating norms, setting expectations for new hires and providing ongoing training and feedback to all employees will help create a culture of civility, said Dr. Porath, who is the author of *Mastering Civility: A Manifesto for the Workplace*.

"An excellent example of civility training is the empathy training done with physicians at the Cleveland Clinic," she said. "It not only helped in terms of patient satisfaction scores, but it reduced physician burnout as well."

For individuals, Dr. Porath suggested taking time to reflect on experiences and caring for one's wellbeing. She also said taking the time to say thank you and to listen attentively are ways professionals can contribute to a more civil culture.

"We know civility lifts people up and that incivility hurts people," Dr. Porath said. "By being more respectful, we can improve performance, creativity and helpfulness. By keeping in mind who we want to be on a daily basis, we can lead the world to a better place."

Unique Session Demonstrates Value of Resonant Leadership

By Lynn Antonopoulos

"We are surrounded by microaggressions and macroaggressions, and if we are lax in our vigilance where such events are concerned, we cannot hope to effectively address them," said Alexander Norbash, MD.


Omary


Norbash


Heilbrun


Pandharipande

Dr. Norbash is professor and chair of radiology at the University of California, San Diego School of Medicine, UC San Diego Health and co-creator of a powerful Tuesday education session that used a narrative format to explore the negative impact of bias in the workplace.

Resonant leadership is a term coined by author Daniel Goleman and described as a method of leading by designing and nurturing an environment where people work because they believe in the mission and feel united behind a common goal.

"Resonant leadership is important because the days of traditional, military-style command-and-control leadership are over. Nowadays, no one wants orders barked at them. Instead, they want to be inspired by leaders with high emotional intelligence who can guide their organizations and teams to success," said session co-creator Reed A. Omary, MD, chair of radiology at Vanderbilt University Medical Center.

Harnessing the Power of the Narrative

Dr. Norbash and Dr. Omary participated remotely in the session that included on-site presenters Pari Vijay Pandharipande, MD, an associate professor of radiology at Harvard Medical School and a radiologist specializing in abdominal imaging at Massachusetts General Hospital, and Marta E. Heilbrun, MD, vice chair for quality and associate professor in the Department of Radiology and Imaging Sciences at Emory University School of Medicine.

In the vignette designed to demonstrate problematic leadership, the chair of a radiology department, uses a hiring committee to select a new vice chair to replace an outbound vice chair. The presenters play four characters: a strong female candidate, a senior, male member of the department, a more junior female member and the chair.

The initial set of videos shows the attempts of the senior male member, played by Dr. Norbash, and junior female member, played by Dr. Heilbrun, to influence the candidate selection through back door conversations with the chair, played by Dr. Omary.

The videos sparked a lively discussion among audience members who were quick to share their own experiences as well as criticisms about the way the fictional characters conducted themselves. Many commented on the responsibility of the chair. "As a chair, if you care about your people, you listen, but you always tuck it away," said RSNA Past President Valerie P. Jackson, MD.

After the discussion, Drs. Pandharipande and Heilbrun showed two additional videos with alternative outcomes. In one, the established male was selected as a means of maintaining the status quo. In the other, the accomplished female candidate was selected after the chair consulted with many outside his department to validate the choice.

Audience members were again critical of the chair and his leadership approach. One audience member said he disenfranchised the search committee completely with his actions.

Dr. Heilbrun wrapped up the session by leaving the audience to reflect on the impact of leadership style. "What is resonant leadership? That ability to listen, to engage, to create an environment that lets people know they have a seat at the table," said Dr. Heilbrun.

Because resonant leadership is rooted in emotional intelligence, Dr. Pandharipande said some leaders may be uncomfortable adapting to this approach. "A major barrier is a leader's concern about being perceived as weak — for some, resonant leadership may require rethinking what defines 'strength' in a leader," she said.

Patient Perspective Key to Effective Education in Health Professions

By Mary Henderson

The role of patients in the education of health professionals, including both diagnostic and therapeutic radiologic technologists, deserves consideration. One RSNA 2021 course offered relevant research and toolkits to help educators put the patient at the heart of training.

Janice St. John-Matthews MSc, clinical fellow to the chief allied health professions officer (CAHPO) at NHS England and Improvement, discussed the importance of involving patients in training for the health professions.

"Actively involving patients in health professions education has not always been common practice in the U.K.," St. John-Matthews said. "It wasn't until the early 2000s that patient involvement became a core aspect of England's health professions training."

She said social work and mental health nursing were instrumental in driving patient-centered education forward to the point that the National Health Service (NHS) and the College of Radiographers both now emphasize patient-practitioner partnerships as integral to delivering personalized patient care.

"The radiologic technologist must strike a balance between the technical side of the profession and patient care," she said. "We must ensure we are focused and patient-centric."


St. John-Matthews

Patients as Partners in Curriculum Design

St. John-Matthews offered concrete ways educators can capture patient voices and enlist the public as co-creators in the training of radiologic technologists. She also highlighted several tools organizations can use to benchmark and track their progress on public/patient involvement.

"There are several ways patients can be engaged in the training process, from curriculum design and the recruitment and selection of students to practice-based activities and trainee assessments," she said.

St. John-Matthews stressed the importance of engaging patients of all ages, ethnicities and religious backgrounds when enlisting the public involvement. She provided a checklist of 'Five Ws' to ask when considering patient involvement in health profession education:

- Why should we include patients and the public in curriculum design?
- When should we include patients and public in our curriculums?
- Who are we including, how inclusive is our patient and public group?
- Where do we include them (if at all)?
- What can we do to further include them?

"There is no group we don't meet in our day-to-day work as radiologic technologists," she said. "Radiographers must feel comfortable interacting with and caring for patients from different backgrounds and cultures, so they can support the individual needs of every patient they encounter in their professional role."

Access the presentation, "Patient Voice: The Power of Patient Engagement on Education and Service Development," (T1-CAS07) on demand at *Meeting.RSNA.org*.

Special Recognition for In-Kind Support

RSNA would like to recognize Philips for contributing equipment to the Educational Courses at RSNA 2021.

American Association of Physicists in Medicine

Wednesday's

Physics Quiz

Q **An adult CT head protocol with CTDIvol 60 mGy for an average adult is accidentally used on a 1yo child. The machine reports the same CTDIvol number 15 mGy. The dose to the child is:**

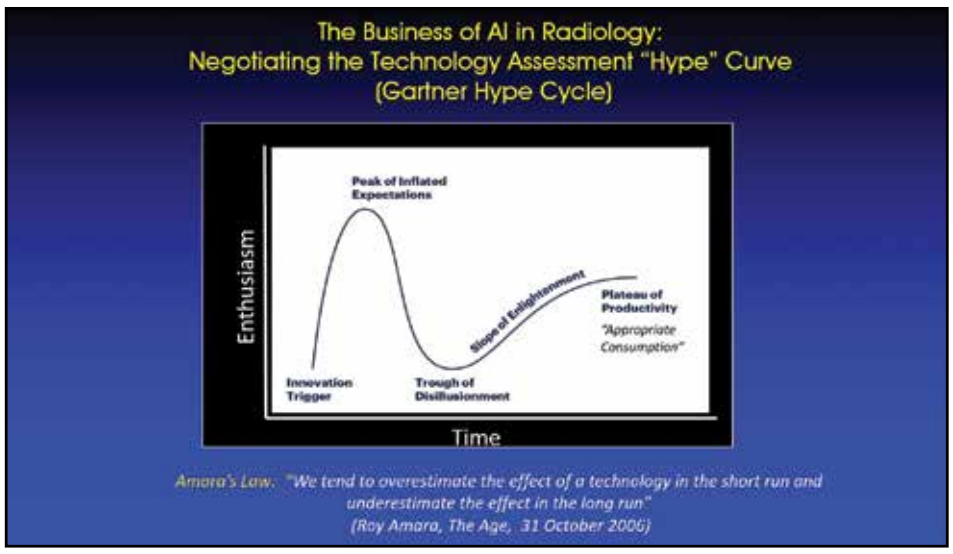
A. Higher than the adult
B. Same as the adult
C. Lower than the adult

[Answer on page 10A.]

AI in Radiology: After the Hype, New Opportunities

By Richard Dargan

Welcome to the Trough of Disillusionment



(Left to right) **Luciano Prevedello, MD, Nina Kottler, MD, Harvi Trivedi, MD, Paul J. Chang, MD**

That's where we are when it comes to artificial intelligence (AI) in radiology, according to Paul J. Chang, MD, professor of radiology and vice chairman of Radiology Informatics at the University of Chicago.

Dr. Chang kicked off a Tuesday session on AI at RSNA 2021 by citing the Gartner Hype Cycle (see image), a widely used construct that describes the adoption of disruptive technologies. In the Gartner model, an escalating hype cycle is followed by a trough of disillusionment. For radiology, that means lots of companies and venture capital money but suboptimal adoption.

"We're right in the middle of this phase where people are throwing millions of dollars at companies and yet when you look at the numbers there's not a lot of great adoption going on," Dr. Chang said. "People are still kind of dipping their toes in the water, just testing a few algorithms here and there."

To get out of the trough and speed the adoption of AI, radiology leaders and other health care stakeholders must convince the people in the C suite that the technology makes financial sense, an area with which the three panelists at the session have experience.

> ***"We're right in the middle of this phase where people are throwing millions of dollars at companies and yet when you look at the numbers there's not a lot of great adoption going on."***
>
> **Paul J. Chang, MD**

Nina Kottler, MD, radiologist and associate chief medical officer at Radiology Partners, the largest physician-owned and physician-led radiology practice in the country, described how she and her colleagues developed AI-based algorithms for initiating workflow that offered a far greater return on investment than algorithms related to image interpretation.

"We wanted to create something to help the radiologist as they work in their systems," she recalled. "And when we created that case and proved that it worked, the organization got very excited."

Organizations also get excited by applications that differentiate them from their peers, according to Luciano Prevedello, MD, associate chief clinical information officer at Ohio State University Wexner Medical Center. Dr. Prevedello, who has helped implement four FDA-approved AI-based applications at his facility, said that the expected financial return is central to pitching AI-based solutions.

"You have to ask, 'will the quality that this application is bringing to the table be a business advantage of your organization?'" he said. "If we are one of the few organizations that can do that, then it's something we can advertise and get more patients as a result."

The Right Application Can Improve Bottom Line

Panelist Harvi Trivedi, MD, emergency radiologist at Emory University in Atlanta and a leading researcher in AI, interviewed more than two dozen stakeholders in preparation for the session. His conversations revealed a surprising finding: Applications that improve radiologist efficiency were not nearly as likely to attract investment as those that help organizations capture more patients. An AI application that helps bring more patients back for follow-up imaging, for instance, has the potential to add tens of thousands of dollars to an organization's bottom line.

Dr. Trivedi also said that single-solution applications, like an algorithm for lung nodule detection, are increasingly less attractive to health care organizations.

"We've got to think bigger, we've got to think about integration," he said.

The stakes are high, Dr. Chang said, as the profession faces burnout and staffing shortages amid increasing complexity and demands from clinical colleagues for precision radiology.

"We barely get through the worklist as it is, and now there is this extra requirement to add more characterization of image datasets," Dr. Chang said. "We can't handle all this alone. We need some help right now because what we're doing is not sustainable."

In a video presentation taped before the session, Mona Flores, MD, the global head of medical AI for NVIDIA, offered a sanguine outlook, noting that the AI market is expanding and investment is increasing. Adoption remains low, however, with only one-third of organizations currently using AI in their practices.

"The time for AI is not now, it's yesterday," Dr. Flores said.

Access the presentation, "The Business of Artificial Intelligence in Radiology: A Cost, a Long-Term Investment or an Immediate Business Opportunity?" (T4-CIN12) on demand at *Meeting.RSNA.org*.

Study Shows Many TIA Patients are Lost to Follow-Up

By Richard Dargan

More than two-thirds of patients who are discharged from the emergency department after suffering transient ischemic attacks (TIAs) do not complete recommended imaging within 30 days post-discharge, according to a study presented at RSNA 2021.

TIAs, often referred to as mini strokes, are brief episodes that occur when parts of the brain are temporarily starved of blood. Symptoms are similar to those of a stroke, but they don't last as long. TIAs are considered a warning sign for future strokes.

Guidelines recommend brain imaging with MRI or CT, preferably within 48 hours of symptom onset. Additionally, it's recommended that all patients should have screening of the blood vessels in their head and neck with either CTA, MRA or carotid ultrasound within a similar time frame.

Researchers led by Vincent Timpone, MD, assistant professor at University of Colorado School of Medicine in Aurora, previously demonstrated that a majority of TIA patients discharged from the emergency department without hospital admission do not complete a recommended TIA imaging workup during their emergency department encounter. For the new study, they went a step further.

"The old database we used was based only on emergency department information, so there was no way of knowing what happened to those patients when they were discharged," Dr. Timpone said. "The purpose of this study was to see what happened to those patients after they were discharged."

> ***"This study shows that if you discharge a patient with incomplete workup, there's a high likelihood they're not going to get that workup as an outpatient."***
>
> **Vincent Timpone, MD**

The researchers analyzed more than 6,300 TIA encounters from a Medicare database. Of those, 3,804 (60%) had a complete TIA imaging workup during their emergency department encounter.

Of the 2,542 patients discharged from EDs with incomplete imaging, only 761 (30%) had completed imaging during the subsequent 30-days post-emergency department discharge.

"This study shows that if you discharge a patient with incomplete workup, there's a high likelihood they're not going to get that workup as an outpatient," Dr. Timpone said. "Seventy percent of patients in our study were lost to follow-up."

It is unknown how many of these incompletely imaged patients may have had a stroke or face a significant risk of one in the future.

"Theoretically, if you don't do a complete imaging workup you might miss a stroke that's occurred, and if you don't screen the blood vessels you might not recognize vascular risk factors that can lead to future strokes," Dr. Timpone said. "It's important to complete the imaging work-up, so that potentially modifiable risk factors for stroke will be recognized and treated appropriately."

Timpone

Barriers to Follow Up

There are likely a variety of reasons for the lack of imaging follow-up, Dr. Timpone said. Access to outpatient imaging might be limited in some areas. In addition, clinicians and patients may gain a false sense of security based solely on brain imaging results, unaware that vascular imaging is needed to identify those lesions that place them at an increased risk for future strokes.

The study found that the odds of incomplete TIA imaging workup at 30-days post-emergency department discharge were increased in Black patients and older patients. Previous research has shown that these groups are adversely affected by various health care disparities. The reasons for such disparities are uncertain, but may result from personal or facility barriers to accessing care, living in proximity to lower-performing hospitals, implicit biases in the system, and general distrust of the health care system.

"It's important for health care providers to be aware of these deficiencies in the workup of TIA and to recognize which patients are most likely not to receive the standard of care," Dr. Timpone said. "Providers should develop systems to better follow up on these patients when discharged and facilitate timely imaging."

The researchers plan to follow up the study by comparing patients who were incompletely imaged with those that were and see if the incomplete imaging is a risk factor for future stroke.

Access the presentation, "Lost to Follow Up: A Nationwide Analysis of Transient Ischemic Attack Patients Discharged From ED With Incomplete Imaging Workup," (SSNR06) on demand at *Meeting.RSNA.org*.

Two Longtime RSNA Employees Set to Retire

Steve Drew and Marijo Millette will retire in December bringing an end to two long and successful careers at RSNA.

The departure will be a bittersweet farewell for friends and colleagues of the two who will remember them both for their communication, leadership, support and unfailing dedication to RSNA.

The Face of the Annual Meeting

Steve Drew graduated from Loras College in Dubuque, IA, where he earned a Bachelor of Arts in Communications and a minor in business. He initially worked as a management trainee for Osco Drug Stores in Illinois before taking a job with the Chicago Dental Society where he served as associate director, Dialogue in Dentistry, providing dental benefits analysis services to employers.

Drew joined RSNA in 1989 as director of computer services. He was later named director of informatics in 1992, and in 1994 he was promoted to the position of assistant executive director, informatics and scientific assembly. Drew's title changed again to assistant executive director of meetings and convention services, informatics, a role he filled for the remainder of his time at RSNA.

For many, Drew has been the face of the RSNA annual meeting. Well known in the industry, he has always been energetic and positive with a strong sense of humor and a passion for the information technology side of health care.

After more than 30 years at RSNA, Drew said he is looking forward to spending more time with his wife, children and grandchildren and working on home improvement projects.

A Leader in Communications

Marijo Millette received her journalism degree from Columbia College in Chicago where she also worked in public relations. She earned her master's in organizational leadership from Lewis University in Romeoville, IL. In 2001, Millette was hired as manager of public information at RSNA, and in her early days she was largely involved in the development of *RadiologyInfo.org*, a new initiative for RSNA at the time.

Millette was later promoted to senior manager, and in 2007 she was again promoted to director of public information and communications where she has served ever since.

Throughout her 20+ years at RSNA, Millette was a leader in communications. She was involved with several RSNA committees, fostered strong relationships with volunteers and played an important role in shaping RSNA, most recently helping drive diversity, equity and inclusion efforts across the organization.

In retirement Millette said she plans to travel, garden, volunteer for animal rescue and social justice organizations, do some freelance writing and begin creating art again. She also plans to spend more time with her son Lee, a paramedic in Dublin, Ireland.

Heller Named At-Large Director

Richard E. Heller III, MD, MBA, a renowned leader in health policy and expert in value-based radiology, was elected as an at-large director on the RSNA Board of Directors on Tuesday. He will serve a term of three years.

"I am both honored and humbled to join the board of RSNA, an organization so important to me that my wedding in Chicago was timed to coincide with its annual meeting," said Dr. Heller. "RSNA is the center of the radiological sciences global community. The annual meeting is a place to learn and share, as well as re-connect with old friends and meet new ones. And year-round, RSNA is a place where I learn from and engage with others who share a passion for the mission to improve patient care through education, research and technology. I look forward to helping build on the RSNA's legacy of excellence."


Heller

Dr. Heller is associate chief medical officer: Communications & Health Policy and national director of pediatric radiology at Radiology Partners, a national radiology practice based in the US. He also serves as clinical associate at University of Chicago Medicine, Comer Children's Hospital in Chicago.

Dr. Heller received his undergraduate degree from Colgate University in Hamilton, New York and his medical degree from the Feinberg School of Medicine at Northwestern University in Chicago. He continued at Northwestern Hospital for his medical internship and moved to Barnes-Jewish Hospital, Mallinckrodt Institute of Radiology in St. Louis, Missouri, for his residency in diagnostic radiology. He did a fellowship in Pediatric Radiology at Boston Children's Hospital in 2004-2005.

Dr. Heller began as an attending radiologist at Advocate Christ Medical Center and Hope Children's Hospital in Chicago in 2005-2007. He became chief of pediatric radiology at Advocate Children's Hospital in Oak Lawn, Illinois, in 2007-2013, and then chair of radiology for the children's hospital system in 2014-2016. Dr. Heller moved to his current positions at Radiology Partners in 2016 and at Comer Children's Hospital in 2017.

Both in his role at Radiology Partners and for the field of radiology overall, Dr. Heller is a strong advocate for responsible health policies that protect patients and the physician practices that serve them. He has been recognized for his dedication to radiology policy and practice improvements, including with the Practice Values Award for Teamwork at Radiology Partners Practice Leadership Summit in 2019.

Dr. Heller served on the RSNA Policy & Practice subcommittee of the Education Exhibits Committee. He has given many lectures and presentations at the RSNA Annual Meeting, been a session leader and moderator, acted as moderator and presenter in the popular Fast Five session, and was appointed as the RSNA representative to the International Society for Strategic Studies in Radiology (IS3R) working group on value-based care. He serves on the editorial board and as a peer reviewer for *Pediatric Radiology* and has been a peer reviewer and editorial board member for the *Journal of the American College of Radiology* (JACR). Dr. Heller also serves on and helps lead several Society for Pediatric Radiology and American College of Radiology (ACR) committees.

Dr. Heller has authored or co-authored many papers and articles on topics as varied as suprarenal masses in children to criteria for defining metrics in value-based care. He has been an invited lecturer, panelist, moderator and podcast guest for nearly 100 events and webinars on a wide variety of topics including pediatric radiology, health policy, diversity in healthcare, legislation affecting radiology practices and more.

Dr. Heller received his MBA in 2012 from the Kellogg Graduate School of Management at Northwestern University in Chicago. He won an RSNA 2017 Quality Storyboard Award for his work "Improving Clinical Value through Reducing Variability by Establishing and Monitoring Best Practice Recommendations: How We Do It."

"RSNA is the center of the radiological sciences global community. The annual meeting is a place to learn and share, as well as re-connect with old friends and meet new ones. And year-round, RSNA is a place where I learn from and engage with others who share a passion for the mission to improve patient care through education, research and technology. I look forward to helping build on the RSNA's legacy of excellence."

Richard E. Heller III, MD, MBA

Scott Elected as At-Large Director

Jinel A. Scott, MD, MBA, a dedicated advocate for quality improvement, patient safety and health equity for patients and for diversity, equity and inclusion in the radiology profession, was elected as an at-large director on the RSNA Board of Directors on Tuesday. She will serve a three-year term.

"This is a really exciting and dynamic time for radiology as the field seeks to extend its impact beyond the reading room to meet the challenges of delivering care in a safe and equitable manner," Dr. Scott said. "RSNA has always been at the forefront of radiology technology and education, and it is an honor to serve RSNA and the radiology community in this capacity and at this time. The future is bright for our profession, and I am pleased to be a part of it in my new role with the Society."

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Jinel A. Scott, MD, MBA

Dr. Scott is an associate professor of clinical radiology in the Department of Radiology at State University of New York (SUNY) Downstate Health Sciences University, and director of emergency radiology, quality improvement and patient safety in the Department of Radiology at New York Health and Hospitals/Kings County, both in New York City.

After receiving her undergraduate degree from Howard University in Washington, D.C., Dr. Scott earned her medical degree from Howard University College of Medicine in 2001, and did her internship in internal medicine at Washington Hospital Center also in Washington, D.C. She completed her residency at SUNY Downstate Medical Center in Brooklyn, NY, including as chief resident in 2005-2006. Dr. Scott was a musculoskeletal radiology fellow at Maimonides Medical Center in Brooklyn in 2006-2007.

Following her residency and fellowship, Dr. Scott was a teleradiologist for Radisphere, headquartered in Beachwood, OH, from 2007 until 2011. She joined the faculty of SUNY Downstate in 2011, first at Long Island College Hospital in Brooklyn, then in 2014 she moved to Kings County Hospital, also in Brooklyn, where she is today.


Scott

Highly regarded for her dedication to improving medical care for underserved patients, Dr. Scott is committed to providing high quality and safe care for all patients and focuses much of her time to making change happen in the health equity space.

Dr. Scott is a member of RSNA's Committee on Diversity, Equity and Inclusion and is the RSNA representative to the Radiology Health Equity Coalition. She serves on the American College of Radiology (ACR) Appropriateness Criteria Expert Panel on Musculoskeletal Imaging and the General Radiology Improvement Database Committee. She is a member of the NYC Health and Hospitals System High Value Council. Dr. Scott is also chair of the Lung Cancer Screening Multidisciplinary Steering Committee of Kings County Hospital Center Department of Radiology which coordinated the implementation of the Kings Healthy Lungs Program launched June 2021.

Dr. Scott has authored or co-authored papers in peer-reviewed publications on a wide range of topics including narrowing the gap in imaging disparities, communication errors in radiology, pediatric trauma imaging, strategies to improve employee retention and more. She has conducted IRB approved research on topics as varied as "Factors Associated with Career Success among Black Radiologists" to "Radiology and the Assessment of Elder Abuse" to "CT Imaging in the Evaluation of Acute Pancreatitis in the Emergency Department."

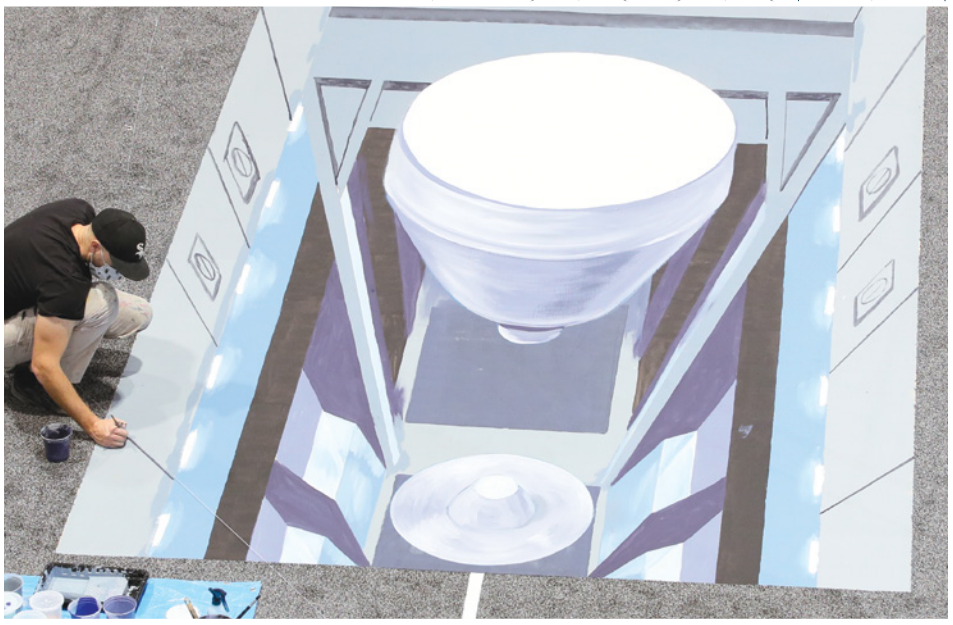
In 2019, Dr. Scott received her MBA in Healthcare Leadership from the University of Tennessee Haslam School of Business. She received her Lean Healthcare Green Belt Certification in 2020 and that same year participated in the Greater New York Hospital Association and United Hospital Fund Clinical Quality Fellowship Program. Dr. Scott has received additional certifications, most notably focused on quality and safety including as a Certified Professional in Healthcare Quality (CPHQ).

Erik England, MD, co-moderator of the RSNA 2021 Resident Competition welcomed the teams and kicked off the lively competition in the Discovery Theater. This head-to-head contest has residency program representatives matching wits by answering questions and identifying challenging diagnoses.

Ultimate bragging rights were earned Tuesday by residents from the University of Maryland Medical Center (UMMC) who are the RSNA 2021 Resident Competition winners. The winning team is pictured here with Omer A. Awan, MD (far right), who co-moderated the competition.

Tuesday morning, 396 participants signed up to brave the chill along Chicago's lakefront and participate in RSNA's 5k Fun Run benefiting the R&E Foundation. The funds will help improve patient care by supporting research and education in radiology through grants and awards to individuals and institutions that advance radiologic research, education and practice. In the women's division, top finishers were (left to right) Graciella Garrido Manso (Silver), Jeannette Mathieu (Gold) and Clara Weber (Bronze). In the men's division, top finishers were (left to right) Pablo Gonzalez (Bronze), Hakon Hjemly (Gold) and Romain Labas (Silver).

The Residents Lounge, provides a place to relax, network or watch live-streamed scientific sessions for RSNA members-in-training and non-member residents.



Attendees were invited to "step into" the 3D mural being painted in the Technical Exhibits Hall.

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INDUSTRY FOCUS

One-Third of Radiology Patients Termed Self-Pay at Registration Actually Have Billable Coverage

By Richard Dargan

Redefining Radiology, the theme of RSNA 2021, centers around reducing inequities in patient care and inefficiencies in radiology practices.


Smith

Those initiatives have particular relevance to the billing process, where errors and miscommunication often leave both providers and patients frustrated.

Billing problems have been exacerbated in recent years by two pressure points: government regulations and payer tactics that place more responsibility for out-of-pocket expenses on the patient. In this environment, identifying possible coverage for self-pay patients and capturing maximum reimbursement for all services rendered can be a challenging, labor-intensive process.

"When providers like radiologists are ancillary to a hospital, they have a real struggle getting good information surrounding the patient," said Juli Smith, Director of ZOLL® Data Systems, a Broomfield, Colorado-based healthcare software solutions company. "They often don't have the very information that is required to get a clean claim out the door and for reimbursement."

Challenges frequently arise early in the patient encounter. Information that the patient provides at the time of registration to the hospital has errors more than 60% of the time, according to Smith. Something as simple as a transposition of a date of birth can lead to the denial of a claim.

Additionally, patients who forget their insurance card are often incorrectly checked in as self-paying. Almost a third of patients who are noted as self-pay at the time of registration actually have active billable coverage, according to Smith. The struggle is that the coverage is hidden to the provider leaving the provider in a difficult position.

These and other billing challenges make data management software products like ZOLL AR Boost®, ZOLL Data Systems' real-time accounts receivable (AR) optimization solution, essential for today's radiology providers. By correcting patient information on the front-end and revealing previously hidden coverage, ZOLL AR Boost helps ensure that no payments are left on the table. It delivers self-pay analytics, demographic verification, insurance discovery and verification in a matter of seconds, freeing staff from having to enter or search for data manually.

"In our studies, we've seen that utilizing tools like these reduces the administrative burden for the billing component by about 30%," Smith said.

ZOLL AR Boost automatically brings the provider financial characteristics of the patient, like how they handle medical bills, how much available credit they have and where they are on the federal poverty line. Providers can then use this information to tailor a financial offer to the patient, whether a discount or a payment plan.

"By having these tools at the ready, the biller's time is optimized, the patient is given an offer that meets their needs, and you end up with improved patient satisfaction on top of an increase in bottom line revenue," Smith said.

AR Boost can be deployed through a web portal, an application programming interface (API), or via a batch submittal process.

Together with the ZOLL Data Systems Medicare Beneficiary Lookup and Converter Tool, ZOLL AR Boost saves considerable amounts of time for providers, allowing them to shift resources to where they're really needed, like helping patients with a payment plan.

"These tools allow you to be very surgical in your approach to each claim and put the effort into what's going to optimize that claim and do it without an increase in labor costs," Smith said. "It really is a game changer."

Experience the World's Largest Medical Imaging Exhibition

Visit the RSNA 2021 Technical Exhibits Halls, featuring more than 500 leading manufacturers, suppliers and medical information and technology developers, to explore the latest medical imaging products and services all in one place

Step into the AI Showcase, featuring nearly 100 companies, to discover the latest artificial intelligence (AI) software and solutions and connect with industry experts. The AI Showcase is also home to the RSNA AI Theater where you can immerse yourself in the hottest topics in AI, machine learning and deep learning and get training and networking opportunities.

While visiting the AI Showcase, don't miss the chance to experience the Imaging AI in Practice Demonstration and see the most current AI tools and enhancements in use in real-world clinical scenarios. This series of multi-vendor interoperability demonstrations features 22 vendors and highlights new technology and communication standards needed to integrate AI into diagnostic radiology workflow.

Beyond the AI Showcase, you can find a variety of other focused exhibit areas including the 3D Printing and Mixed Reality Showcase, Recruiters Row and Educators Row. Stop by the 3D Printing and Mixed Reality Showcase to connect with exhibitors and attendees engaged in 3D medical printing research and interact with, the latest products in 3D printing, 3D software and augmented and virtual reality.

Recruiters Row is the place to go to explore available career opportunities and connect with prospective employers who are on-hand to meet with candidates. Log on to RSNA's Career Connect at RSNA.org/Careers to search for participating employers. While you're visiting Recruiters Row, update your headshot at the RSNA Portrait Studio.

If you are interested in connecting with representatives from educational institutions and leading medical associations from around the world, be sure to visit Educators Row. There you can also meet with RSNA publications staff who are available to answer questions about any of RSNA's peer-reviewed journals.

Looking for the newest RSNA 2021 exhibitors? Visit the First-Time Exhibitor Pavilion and connect with more than 90 annual meeting newcomers. Our first-time exhibitors are identified throughout the Exhibits Halls with a First-Time Exhibitor logo.

The RSNA annual meeting is well known for the wealth of science and education available, and the Technical Exhibits Halls feature demonstrations and learning opportunities throughout the day. Learn about radiology's latest innovations in the Innovation Theater. Participate in Corporate Symposiums, attend Vendor Workshops or enjoy Lunch & Learns that include panel discussions, demonstrations and lectures.

With everything happening with the Technical Exhibits Halls, you'll want to remember to explore our Virtual Exhibition to connect with exhibitors who were unable to travel to Chicago. All RSNA attendees have access to industry programming and the complete Virtual Exhibition through April 30, 2022.

Take some time to watch the 60-minute, educational Virtual Industry Presentations presented by sponsors and the 30-minute Virtual Product Theater Presentations featuring specific exhibitor solutions.

Visit the Virtual Exhibitor Lounge to learn more about our virtual only exhibitors. This unique space includes QR codes that will quickly take you to a virtual exhibitor's online exhibit. Explore the virtual exhibits from comfortable lounge seating with built-in chargers.

Learn more about the RSNA 2021 Technical Exhibits at *Meeting.RSNA.org*.

Technical Exhibits At-A-Glance

Technical Exhibits Hours
Sunday – Wednesday
10 a.m. – 5 p.m.
South Hall A, Level 3
North Hall B, Level 3

AI Showcase
South Hall A, Level 3 (starting at Booth 4129)

3D Printing & Mixed Reality Showcase
North Hall, Level 3 (starting at Booth 8100)

Imaging AI in Practice Demonstration
South Hall, within the AI Showcase
Booth 4529

Virtual Exhibitor Lounge
South Hall A, Level 3, Booth 4112

RSNA AI Theater Presentations
South Hall, Booth 5147
Sunday – Wednesday
10:30 a.m. – 3:45 p.m.

Innovation Theater Presentations
South Hall, Level 3, Booth 4108
Monday and Tuesday
10:30 a.m. – 3:45 p.m.

Vendor Workshops, Lunch and Learns and Corporate Symposiums
See Meeting Program for schedules

Virtual Exhibition and Virtual Industry Presentations
See Meeting Program for schedules

Bistro RSNA

Dining:
RSNA Bistro
South Hall and North Hall
Sunday – Wednesday
Buffet lunch served 11 a.m. – 2:30 p.m.

Virtual Waiting Rooms Benefit Patients, Staff

By Cindy Zinkovich

Radiology exams that begin on time or early, and less overall time spent by patients in the imaging center are among the benefits of a virtual waiting room (VWR) and digital forms.

Digital health care accelerated rapidly in 2020, as COVID-19 cases were skyrocketing and health care facilities increased protocols to keep patients and staff safe.


Desai

"We had to have gaps in our schedule to prevent crowding in the waiting rooms and to allow time for enhanced cleaning," said Vishal Desai, MD, assistant professor of radiology, Thomas Jefferson University, Philadelphia. "How do we maintain appointment slots while ensuring safety? The key is to optimize the non-imaging portion of appointments — the pre-procedure forms, the check-in process and the waiting rooms."

Technology Transformed Appointment Process

Thomas Jefferson University radiologists and IT Innovation team members transformed their longstanding, traditional health care appointment process into a digital one.

They streamlined and digitized steps that had previously led to patient confusion, delays and social crowding, such as writing down directions, navigating to the center and completing three to five forms by hand in the waiting room.

The new process was piloted in July 2020 with MRI patients at Thomas Jefferson University's busiest outpatient imaging center and gradually expanded thereafter.

Patients were invited when they booked an appointment to opt in to receive text messages. A text confirmation included appointment details and a link for directions.

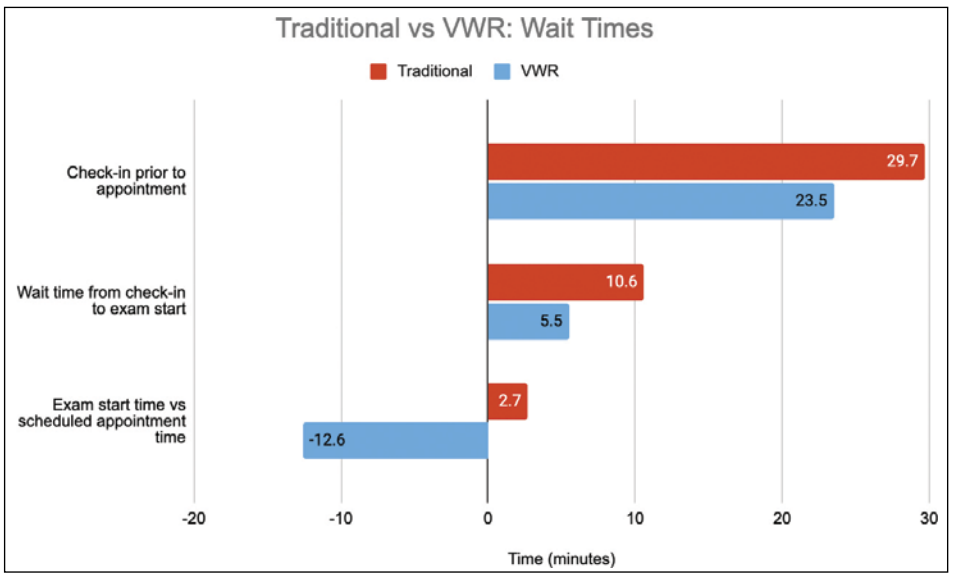
The day before their appointment, patients electronically completed pre-procedure forms, which were linked to their electronic health record. Staff no longer had to manually scan the forms during check-in and content was available to the front desk and MRI tech.

Patients checked in by clicking a text link and waited outside the center until they were notified to enter. Inside, they only needed to complete a COVID-19 screening and electronically sign their previously submitted forms before changing for the imaging study.

"Patients bypass the crowded waiting room and there's no scrambling to fill out forms," Dr. Desai said. "It's overall a smoother, more efficient and less confusing process."

Appointments Began Nearly 13 Minutes Early with VWR

Of the 1,749 MRI patients who used the VWR for text confirmations and reminders from October 2020 through April 2021, 226 opted for virtual check-in.



The Virtual Waiting Room platform allowed patients to arrive closer to their appointment time, significantly reduced wait time, and on average led to exams starting earlier than the scheduled time when compared to the traditional waiting room experience.

Wait times were cut in half (10.6 minutes for the traditional waiting room and 5.5 minutes VWR). On average, the exam began 12.6 minutes before the scheduled appointment time with the VWR versus 2.7 minutes after the appointment time with the traditional waiting room.

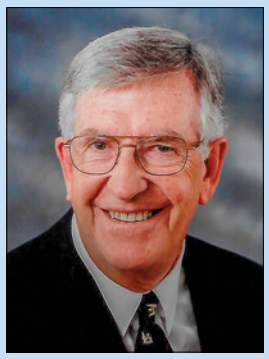
Pre-procedure forms were compared for a subset of 41 knee MRI patients.

More than 1 in 4 patients who completed the forms in the waiting room didn't answer all questions, and 1 in 10 handwritten responses were illegible. The electronic forms were 100% complete and legible because all responses were typed and required for submission.

More than 90% of the VWR users who completed a voluntary, anonymous survey said they would use the VWR again. There were no significant differences among age groups.

Access the presentation, "Personalized Virtual Waiting Room: Digitized Pre-procedure Forms: Radiology Workflow Innovations Driven by the COVID-19 Pandemic,"(SSNI02) on demand at *Meeting.RSNA.org*.

First Tuesday Plenary Lecture Dedicated to Fraser

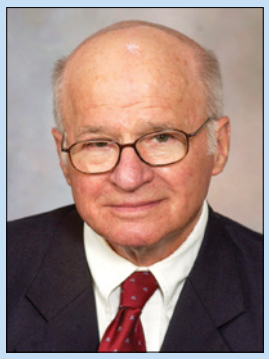

Fraser

The first Plenary Lecture delivered on Tuesday was dedicated to the memory of David B. Fraser, MD.

Dr. Fraser was a former RSNA president and international leader in cardiovascular imaging. For more than 50 years, Dr. Fraser was a mentor, teacher, researcher and leader in Canadian radiology, retiring as chair of the Department of Diagnostic Radiology at Dalhousie University and Victoria General Hospital in Halifax in 1998.

Following his RSNA presidency, Dr. Fraser served as chair of the R&E Foundation Board of Trustees. Dr. Fraser received the RSNA Gold Medal in 2003. Dr. Fraser also served as president of the Canadian Association of Radiologists (CAR) and was recognized with its gold medal.

First Tuesday Plenary Lecture Dedicated to Fraser


Houser

The second Plenary Lecture delivered on Tuesday was dedicated to the memory of O. Wayne Houser, MD.

Dr. Houser was a former RSNA president and internationally acclaimed neuroradiologist. He was a professor emeritus at Mayo Clinic, Rochester.

Following his RSNA presidency, Dr. Houser joined the R&E Foundation Board of Trustees, eventually serving as chair. Dr. Houser was awarded the RSNA Gold Medal in 1999. He was a former president of the American Society of Neuroradiology and received its gold medal in 2001. He was named an honorary member of the French Society of Radiology in 1996.

Wednesday's Answer

[Question on page 3A.]

ACTDIvol reported in the machine is specific to a 16cm phantom for head scans. Since a 1yr old head is much smaller than 16cm the number does not apply. Size Specific Dose estimate was created to help improve that dose estimate. When the size of the patient is smaller than the size of the phantom, then their dose will be higher than reported on the machine.

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