

INSIDE MONDAY

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Nurse navigators help to optimize patient care. #4A

► **Study: MRI after Mammogram Benefits Women with Dense Breasts**

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Incorporating small habits can lead to higher job satisfaction. #13A

EXCLUSIVE ONLINE CONTENT

► **Comparative Effectiveness Research Guides Better Medical Decisions**

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30 YEAR ANNIVERSARY Daily Bulletin

Perspective Change is Key to Reaching New Levels of Patient Connection

By Lynn Antonopoulos

The health care environment around us is changing rapidly, and the time is truly ripe for increased interaction between radiologists and patients, according to RSNA President, Valerie P. Jackson, MD.

"We have both the opportunity and capacity to forge a new level of connection with our patients, and it will be a huge benefit to do so. But to get there, we need to look at patient interaction in new ways — from a variety of perspectives," she said during her President's Address in the Arie Crown Theater Sunday morning.

The importance and value of increased patient interaction were key points in a lecture centered on changing perspectives. Dr. Jackson shared her love of photography and some of her own photographs while encouraging radiologists to see patients through a new lens to better understand health care from the patient's point of view.

She called on her colleagues to step out of the secluded reading room noting that direct contact with radiologists is something patients desire and appreciate.

"For time-pressed radiologists, human connection reminds us of how critical our work is to real people and gets us back to our Hippocratic roots as physicians," Dr. Jackson said.



Jackson

Dr. Jackson refuted concerns of physician burnout resulting from added patient contact noting that breast and interventional radiologists demonstrate an alternative view, reporting generally high degrees of work satisfaction and a better connection to their patients and teams.

Additionally, the increased drive toward value-based care has led to rigorous assessment of patient experiences with patient needs, expectations and satisfaction receiving more weight across specialties than ever before.

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Physicians Care Through Contemplation, Attentiveness

By Jennifer Allyn

Finding the care in caring for patients is one way that physicians can find meaning in their roles in a professional environment that is rapidly becoming inundated with technology.

That was the message in the Sunday Opening Plenary lecture delivered by Abraham Verghese, MD, a *New York Times* bestselling author and the Linda R. Meier and Joan F. Lane Provostial Professor and vice chair for the Theory and Practice of Medicine at the Stanford University School of Medicine in California.

Referencing his own experience with patients, Dr. Verghese reminded attendees



Verghese

that when physicians shortcut the physical exam or order tests too quickly and too often, instead of spending time talking to and examining the patient, simple diagnoses can be missed.

"By not performing a physical examination of the patient, physicians are losing a ritual, one that is transformative, transcendent and is at the heart of the patient-physician relationship," Dr. Verghese said.

Historically, physical examination and touch was the physician's only tool. In the modern era, Dr. Verghese believes that the patient in the bed has almost become an icon, often replaced by, what he calls, the "iPatient," or the patient records that reside in the physician's computer.

"The iPatient is getting wonderful care all across America. The real patient often wonders 'Where is everyone?' and 'When are they going to come by and explain things to me?'," Dr. Verghese said. "There is a real disjunction between the patient's perception, and our own perceptions as physicians, of the best medical care."

Using the example of how rounds have changed in the hospital, he said physicians

used to gather around the patient to discuss their diagnosis and treatment. Now, rounds often take place in a conference room, where physicians are gathered around a table, reviewing images and data. The most critical piece missing is the patient.

Four Consequences of Remote Model of Care

The consequences of this remote model of medicine are four-fold, Dr. Verghese said.

First, patients are dissatisfied when physicians spend more time inputting information on their computer than paying attention to them personally. Referencing several patient memoirs about illness, he noted that we all want to be recognized and have our illnesses witnessed.

"Each man or woman is ill in his or her own way and wants to be recognized as special," Dr. Verghese said. "We all have this need."

Secondly, studies have shown that physician wellness can be greatly improved when they step away from technology. Particularly for radiologists, Dr. Verghese

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AI Hands-on Workshop
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Monday At a Glance

New Horizons Lectures

1:30-2:45 p.m. | Arie Crown Theater



Saykin

Andrew J. Saykin, PsyD
The War on Alzheimer's Disease: Neuroimaging, Biomarkers and Genetics on the Front Lines

Dr. Saykin will discuss the potential of precision medicine to improve early detection and treatment of AD and provide an update on national and global collaborative research initiatives.

Dr. Saykin is the Raymond C. Beeler Professor of Radiology and Imaging Services and a professor of Medical and Molecular Genetics at Indiana University (IU) School of Medicine. He directs the IU Center for Neuroimaging and the Indiana Alzheimer Disease Research Center designated by the National Institute on Aging (NIA).



Pascuzzi

Robert M. Pascuzzi, MD
Charcot, The Iron Horse, and Creeping Paralysis: Good Science in the Treatment of ALS

Dr. Pascuzzi will discuss the scientific challenges of ALS and describe promising treatments beyond clinical management of symptoms.

He contends that good science will lead to meaningful treatment and provide hope for patients. Dr. Pascuzzi is a professor and chair of the Department of Neurology at Indiana University School of Medicine,

RSNA Honorary Membership Presented Today

7:15 - 8:15 a.m.

RSNA Diagnosis Live™ Case-based Competition

Radiology Stranger Things: A Journey into the Upside Down (E451B)

Controversy Session

Are We Over Diagnosing Pulmonary Emboli? (E450A)

Hot Topic Session

Radiomics in Thoracic Imaging (E350)

8:30 - 10 a.m.

Educational Courses

BOOST: Head and Neck – Anatomy and Treatment Planning (S402AB)

BOOST: Breast Case-based Multidisciplinary Review (S103CD)

8:30 a.m. - Noon

Series Courses

8:30 a.m. - 5 p.m.

Molecular Imaging Symposium (S405AB)

10:30 a.m. - Noon

India Presents

Indian Radiology—Serving a Billion Population (E351)

Scientific Paper Sessions

BOOST

CNS (S103AB)

Gynecologic (S103CD)

11 a.m. - 2:20 p.m.

AI Theater Presentations

(AI Showcase, North Building, Level 2)

12:15-1:15

Scientific Poster Discussions

(Learning Center)

1 - 3 p.m.

Interventional Oncology Series: (E450B)

1:30 - 2:30 p.m.

BOOST

Head & Neck/CNS (S103AB)

Gynecologic/Breast (S103CD)

2:30-4 p.m.

RSNA Diagnosis Live™

Tips, Tricks, and How to Get Started (Hands-on) (S401AB)

3-4 p.m.

Scientific Paper Sessions

3-4:15 p.m.

BOOST

Head and Neck (S103AB)

Gynecologic (S103CD)

4:30-5:30 p.m.

BOOST

Head and Neck e-Contouring (S104B)

4:30-6 p.m.

RSNA Diagnosis Live™ Case-based Competition

Chest and Abdomen (E451B)

4:30 - 5:30 p.m.

Hot Topic Session

E-cigarette/Vaping-associated Lung Injury (EVALI) (N228)

4:30-6 p.m.

Special Interest Sessions

View the full program and add sessions to My Agenda on the RSNA 2019 App or at Meeting.RSNA.org.

Daily Bulletin

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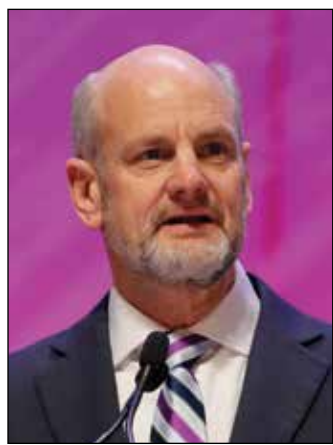
By Shelley Taylor

As radiology professionals convene for this annual meeting, RSNA R&E Foundation Chair Thomas M. Grist, MD, reminded the audience how far imaging has come in terms of innovation, and of the opportunity they have to ensure that innovation continues.

“The R&E Foundation provides an opportunity to invest in this innovation and strengthen our leadership position in medical imaging specifically and in the health care landscape overall,” Dr. Grist said. In fact, he noted, in 2019 the Foundation funded 17 grants in the area of artificial intelligence and machine learning.

Dr. Grist stressed the particular importance of supporting new entrants to the field of radiology because they will provide fresh perspectives. The R&E Foundation, he said, serves as a conduit for all radiologists to provide that support.

By way of example, Dr. Grist talked about Peter Chang, MD, at the University of California in Irvine, who received a 2019



Grist

Research Scholar Grant. Dr. Chang's research into improving CT interpretation time for patients with suspected acute ischemic strokes using deep learning methods could provide a way to triage patients with the condition.

“Medical imaging also holds tremendous potential to improve patient care in the future,” Dr. Grist said, “and we as a community bear a responsibility to sow the seeds of future innovation by supporting our Foundation.”

He said the Foundation has measured a 50:1 return on investment for its donors. Every dollar spent by the Foundation yields an additional \$50 in future grants from other sources, including the National Institutes of Health.



In addition, the Foundation continues to develop new grant solutions designed to meet today's needs. This year the Foundation awarded new Education Innovation and Development grants that were created to meet the need for innovation in radiology education. Dr. Grist recognized a team of collaborators at Massachusetts General Hospital who are developing a new online tool with funding from one of those grants. The Breast Imaging-Dynamic Educational Training Environment for Cancer Teaching (BI-DETECT) is a case-based set of learning modules, quizzes and instructional videos that will be available to all RSNA members as a breast cancer diagnosis and management teaching aid.

In an effort to reduce barriers to entry in our field, the Foundation will introduce a new Minority Medical Student Grant opportunity beginning in 2020. Up

to 10 additional Research Medical Student grants will be available to underrepresented minorities. “These grants afford us a critical opportunity to find those bright innovators and inspire and guide their interest in radiologic science,” Dr. Grist said.

Dr. Grist thanked practice groups, corporations and individuals who champion the mission of the Foundation through their donations. “We are stronger together, and together we can catalyze new discoveries and bolster young careers,” he said.

Meeting attendees interested in learning more about the work of the R&E Foundation are invited to visit the R&E booth in the Connections Center.

Adding Radiology Nurse Navigator Position Improves Team Approach to Breast Care

By Nick Klenske

Because shorter delays between breast cancer diagnosis and surgery often lead to higher rates of overall and disease-free survival, a multidisciplinary team approach is necessary to optimize breast care delivery to patients.

At Georgetown University Hospital's Division of Breast Imaging, this team includes a Radiology Nurse Navigator — a new role that, according to Jae Sung, MD, a radiologist at Georgetown, has proven highly effective.

“As part of our ongoing effort to improve the timeliness of breast care and improve patient satisfaction, in 2017 we introduced a Radiology Nurse Navigator to coordinate our biopsy program and facilitate multidisciplinary care,” Dr. Sung said.

Prior to this, breast biopsies were scheduled by the Breast Center Manager, a working technologist with multiple clinical and administrative responsibilities.

Speaking at a Sunday session, Dr. Sung explained that a Radiology Nurse Navigator's role is to help patients obtain timely cancer screening, diagnosis and treatment; to optimize patient care; and improve patient outcomes. “They serve as a facilitator for patients from their entry into the breast care system when biopsy is recommended and throughout their course of care,” he said.

This role includes any advanced imaging, additional biopsies, and initial breast

surgery and oncology appointments. Specific responsibilities include scheduling biopsies, obtaining referrals, assisting in pre- and post-biopsy care and coordinating patient appointments.

“Without a Nurse Navigator, patients with abnormal diagnostic imaging leading to a biopsy recommendation left the center without a biopsy being scheduled,” Dr. Sung said. “Now, patients recommended for biopsy leave their initial diagnostic visit with a biopsy appointment, rather than waiting to schedule over the telephone.”

The time between diagnostic imaging and core needle biopsy is a quality metric measured by the National Accreditation Program for Breast Centers.

According to the Institutional Review Board (IRB)-approved retrospective study of imaging-guided breast biopsy cases identified before and after the introduction of the Nurse Navigator, this change has increased timeliness of care (decreased time to biopsy), patient satisfaction and volume of cases.

For example, prior to instituting the Nurse Navigator position, 316 patients who underwent 321 procedures expe-



Sung

rienced an average interval time from imaging to biopsy for MRIs of 14.7 days, 17.1 days for stereotactic biopsies, and 11.1 days for ultrasound (US) biopsies. Post-Nurse Navigator, 370 patients underwent 383 procedures and experienced a decrease in interval time from imaging to biopsy of 7% for MRIs (13.6 days), 44% for stereotactic biopsies (9.5 days) and 41% for US biopsies (6.6 days).

“Hiring a Nurse Navigator with clearly defined roles will improve such efficiencies as scheduling and communicating between radiology, oncology, surgery and insurance,” Dr. Sung said. “It will also improve quality of care, volume of cases and patient satisfaction.”

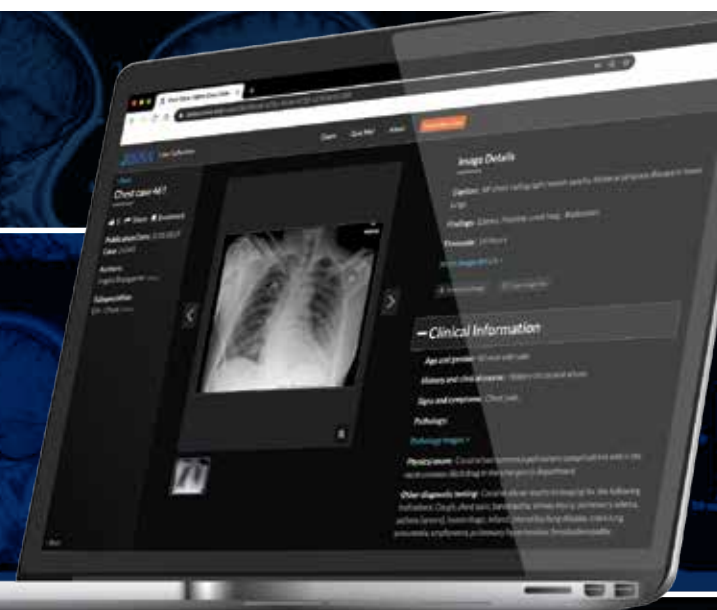
View a video interview with Dr. Sung at RSNA.org/Bulletin.

Monday's Physics Quiz

Q During a radiologic incident, what is the expected lifetime of a person exposed to 75Gy of radiation to their whole body?
[Answer on page 13A.]

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Study: MRI after Mammogram Benefits Women with Dense Breasts

By Richard Dargan

Supplemental MRI screening in women with extremely dense breasts results in statistically significantly fewer interval breast cancers, or cancers found between screenings, according to presenters of a Sunday session.

Breast density is an independent risk factor for breast cancer that also can make cancers more difficult to see on mammograms. As a result, additional MRI screening has been proposed for women with dense breasts. There is a heated debate on the value of this supplemental screening because higher sensitivity of MRI for cancer detection may come at the cost of more recalls for additional tests on women who subsequently turn out to have no cancer.

In the study, which was included in the Best Clinical Trials @RSNA 2019, Dutch researchers evaluated the effect of supplemental MRI for women with extremely dense breasts in a population-based screening program. The study group included 40,373 screening participants, ages 50 to 75, with a negative screening mammography and extremely dense breasts.

The researchers invited more than 8,000 of the women in the study to receive 3-T MRI two years after their mammography. More than 4,700 women agreed, and their results were compared with those who subsequently had mammography screening only during a two-year screening interval.

The cancer detection rate was 16.5 per 1,000 women for women who received MRI, which is considerably higher than the

6.8 per 1,000 detection level of the Dutch mammography screening program. Almost 83% of the cancers detected in the MRI arm of the study were at a very early stage, compared with only 41.6% of cancers in the mammography-only group. Analysis showed that the addition of MRI resulted in a reduction in interval cancers of 2.5 per 1,000 women.

“Supplemental screening versus mammography alone results in the detection of earlier-stage cancers and fewer interval cancers,” said study co-author Stéphanie de Lange, MD, from the University Medical Center (UMC) Utrecht, the Netherlands. “In subsequent rounds of screening, the cancer detection rate achieved the expected level and false-positive results decreased.”

“With more training, or perhaps artificial intelligence assistance, it is not impossible for this number of interval cancers to drop to zero in the future, although we’re not there just yet,” added study co-author Wouter B. Veldhuis, MD, PhD, from UMC.

A Balance Between Efficacy and Societal Burden

In order to achieve the higher cancer detection rate, 9.5% of women who had MRI were recalled for additional screening, including 6.3% for biopsy.

Dr. Veldhuis noted that, as with any screening modality, a balance needs to be found between efficacy and societal burden. To be implemented as a screening modality, he said, a method needs to be effective

in correctly reporting “no cancer” in women without cancer and “cancer” in women with the disease.

“Recommending MRI as a supplement is a societal discussion in which this result will play a role,” he said. “The result itself is not enough to base the decision on.”

The researchers also surveyed the women who turned down the opportunity for supplemental screening with MRI. Inconvenience and anxiety about the exam itself and the possibility of cancer detection were the primary reasons they cited, Dr. de Lange said.

The Dutch team is finishing a study that uses a mathematical model to estimate if the early breast cancer detection with MRI leads to a reduction in breast cancer mortality, and how it might affect the extent and cost of treatment.

“If the long-term benefits outweigh the harms, then MRI examination for women



de Lange

with extremely dense breasts can be an important step up, from a one-size-fits-all to a tailor-made breast cancer screening program,” Dr. Veldhuis said.

After the presentation, Christopher E. Comstock, MD, praised the Dutch study for its focus on interval cancers, often considered the best available measure for breast cancer mortality reduction. Dr. Comstock, a diagnostic radiologist and breast imager from Memorial Sloan Kettering Cancer Center in New York City, presented the session, “Discussant for MRI in Addition to Mammography Screening,” in the Best Clinical Trials @RSNA 2019.

Fast, Efficient Emergency Radiology Care Doesn't Have to Sacrifice Quality

By Melissa Silverberg

Improving radiology efficiency in the emergency department (ED) need not come at the expense of quality. That was the message from keynote speaker Scott Steenburg, MD, and other presenters during a session on emergency radiology and practice management on Sunday.

“There are many things each of us as leaders can do to set radiologists up for success,” said Dr. Steenburg, an emergency and trauma radiologist at Indiana University School of Medicine and Indiana University Health. “But you have to design the whole process with both efficiency and quality in mind.”

When it comes to efficiency, Dr. Steenburg said one component is understanding workflow and workload, and how to optimize both in parallel with one another. He said leaders should

use data to understand historically how busy their ED is at particular times of day and to learn about the capacity of their staff. These data points can ensure that a department isn’t understaffed during its busiest hours or overstaffed during a slow time.

“You want to create a schedule that will not burn radiologists out,” Dr. Steenburg said, “but will still maintain steady turnaround times and not allow the work to get out of hand.”

One example of creative staffing is to use a reading room assistant or consultation

radiologist to answer calls and deal with the everyday distractions and interruptions that happen in the ED, giving radiologists more time to read scans and move through cases efficiently, he said.

Analyzing 24/7 Staffing in the ED

One study presented in the session analyzed the effect of implementing 24/7 staffing at a Level I trauma center in Canada. Francesco Macri, MD, PhD, of the Department of Emergency and Trauma Radiology at Vancouver General Hospital, and colleagues conducted a retrospective chart analysis on all patients over 18 years old with scans performed in the emergency department a year before the 24/7 staffing was implemented, and a year after.

The Canadian Triage and Acuity Score (CTAS) was recorded for each patient, with categories ranging from most to least acute: Resuscitation, emergent, urgent, less urgent and non-urgent. Researchers calculated the time between imaging request and end of

imaging and between end of imaging and the final report.

The study found that for urgent patients, the time between image request and end of the imaging exam dropped by 87 minutes once 24/7 staffing was implemented. The time between end of imaging and final

You want to create a schedule that will not burn radiologists out but will still maintain steady turnaround times and not allow the work to get out of hand.

Scott Steenburg, MD



Steenburg

report dropped in all categories by at least four hours.

“Our results demonstrate the importance of having a radiologist available in the emergency department at all times,” Dr. Macri said. “High-quality of care shouldn’t just be from 8 a.m. to 5 p.m. — it should be 24/7, especially in the emergency department.”

Defining, Measuring Goals is Critical

On the quality side, Dr. Steenburg said every department needs to talk about their goals and define what quality means to them, and then set up studies and projects to measure those goals. Quality metrics need to be clearly defined, meaningful and measurable, he said.

“If we aren’t tracking what we do and how well we do it, we don’t know what needs to be fixed,” Dr. Steenburg said. “Be your own case study.”

Although quality improvement programs may look different at different institutions, they have a similar goal.

“The number one priority is superior patient care,” Dr. Steenburg said. “If you set up systems and practices that allow you, as a radiologist, to do your best job, that will downstream and have a positive influence on patient care.”

View a video interview with Dr. Steenburg at [RSNA.org/Bulletin](https://www.rsna.org/Bulletin).

RSNA Honorary Members

Honorary membership is presented for significant achievements in the field of radiology. Today RSNA will award three honorary memberships during the afternoon plenary session.

Tarek El-Diasty, MD

A distinguished leader who is internationally recognized for his advancement of medical imaging and patient care in Egypt, and for forging partnerships with radiological societies throughout the world, Tarek El-Diasty, MD, is president of the African Society of Radiology and an emeritus professor of radiology at the University of Mansour in Egypt.

Dr. El-Diasty is a veteran researcher in urology and nephrology. His work has focused on imaging of urinary bladder cancer, renal transplantation and interventional imaging, which is reflected in 2,210 citations and 28 H-index. He has made a significant impact on the direction of radiology research in Egypt.

Dr. El-Diasty received his medical degree from Mansoura Faculty of Medicine in 1979. After completing his internship and residency at that institution, he set upon establishing the first full-time urology department in the country. The resulting program, the university's Urology and Nephrology Center, remains the leading center of its kind in the region. More than 60 postgraduate students have completed their studies there under Dr. El-Diasty's supervision.

In 2002, Dr. El-Diasty led efforts to fully digitize the department, employing an integrated PACS-RIS-HIS health information system. It became the first fully digital radiology department in the country.

A highly accomplished author and editor, Dr. El-Diasty has contributed to more than 125 peer-reviewed articles and 17 book chapters. He currently serves as editor-in-chief of the *Egyptian Journal of Radiology and Nuclear Medicine* and as the senior (paper) editor of the urogenital section of the *British Journal of Radiology*. He has been a reviewer for numerous national and international journals.

Dr. El-Diasty is an ambassador for Egyptian radiology, establishing ties with international societies to improve global advancement of medical imaging and optimize the standard of patient care in urology. He chaired the 13th symposium of the European Society of Urogenital Radiology, held in Cairo in 2006, and the International Congress of Radiology in Dubai in 2014. He served as president of the Egyptian Radiological Society from 2012 until 2018. He has conducted visiting professorships and completed visiting fellowships in multiple countries, including the Netherlands, United Kingdom, Denmark, Italy and the United States. He has spearheaded the Egypt Presents session that will take place during RSNA 2019.

He has received several awards from the Egyptian government in recognition of his career achievements and outstanding contributions to the development of radiology in Egypt and to international cooperation in radiology. Dr. El-Diasty was awarded honor-

ary membership of the European Society of Radiology (ESR) in 2013, and of the British Society of Emergency Radiology (BSER) in 2019.

Fiona J. Gilbert, MD, MBChB, FRCP, FRCR

A champion of oncologic and musculoskeletal imaging and a renowned advisor on best practices in radiology, Fiona J. Gilbert, MD, MBChB, FRCP, FRCR, is head of the Department of Radiology at the University of Cambridge in England.

After receiving her medical degree from the University of Glasgow in 1978 and her radiology training in Aberdeen, Professor Gilbert quickly established herself as an authority on quality improvement. She has contributed to numerous focus groups and advisory boards to establish national standards for medical imaging. For 10 years, she served on the panel of the Scottish Bone Tumour Registry, reviewing cases alongside pathologists, orthopedic surgeons and clinical and medical oncologists to ensure best practices. From 2004 to 2008, she served on the National Cancer Research Institute's breast cancer clinical focus group as a radiology representative. The group prioritized the research projects to be supported by the National Cancer Research Network.

Dr. Gilbert also set up the Scottish Interval Cancer Database for the Scottish Breast Screening Programme and was responsible for auditing the program, serving as Deputy Chair for Radiology for Quality Assurance. She chaired the Royal College of Radiologists Academic Committee from 2010 until 2017. Currently vice president, she will be president of the European Society of Breast Imaging in 2021.

Professor Gilbert's research interests include all aspects of breast cancer imaging, testing new modalities in large scale trials, understanding the tumor microenvironment and using multimodal functional imaging to monitor changes during neo-adjuvant therapy. She also has extensive experience in musculoskeletal imaging exploring early imaging changes in osteoarthritis and the mechanism of club foot in fetal and neonatal development to improve understanding of the condition.

Currently, Professor Gilbert is investigating predictive and surrogate response in breast cancer, using 3T MR imaging with diffusion-weighted imaging and spectroscopy to identify biomarkers that will help guide personalized treatment. With PET, her team is exploring FLT and HER2 as predictive and prognostic biomarkers. They have applied the knowledge they gained investigating cervical, rectal and esophageal cancers to breast cancer. Additionally, she is focusing on risk adapted imaging in breast screening to use more appropriate techniques in those women most likely to benefit.



El-Diasty



Gilbert



Hamm

Since 2012, Dr. Gilbert has been awarded 15 research grants totaling more than \$20 million in funding. She oversees imaging research at Cambridge and serves as a professor and mentor to undergraduate students. She is chairman of the Cambridge Health Imaging Committee overseeing imaging research at the university.

The author of nearly 200 peer-reviewed publications, Professor Gilbert has served on the editorial board for *Clinical Radiology*, funding review panels for the Medical Research Council, National Institute of Health Research (NIHR) Technology Assessment board and Efficacy and Mechanism Evaluation board. She was appointed an NIHR Senior Investigator in 2016 to 2020, a prestigious award given to the top 200 health researchers in the UK.

Bernd Karl-Heinz Dieter Hamm III, MD

A dedicated leader and investigator renowned for his work in new imaging techniques of the extracellular matrix and for establishing collaborative programs to advance research and cooperation in Germany and worldwide, Bernd Karl-Heinz Dieter Hamm III, MD, is a professor and chair of the Department of Radiology at Charité in Berlin.

Dr. Hamm recently led a successful merger of Charité with Virchow-Klinikum and Klinikum Benjamin Franklin, employing 450 clinicians at three campuses.

Dr. Hamm received his medical degree from the Free University of Berlin in 1978, and explored interests in general surgery, urology, and internal medicine. The son of a radiologist, Dr. Hamm then turned to residencies in the Department of Radiotherapy and the Department of Radiology at the university's Steglitz Medical School from 1980 to 1986. Shortly afterward he was appointed Senior Staff Physician in the Department of Radiology, and from 1990 to 1993 he served as the department's deputy director.

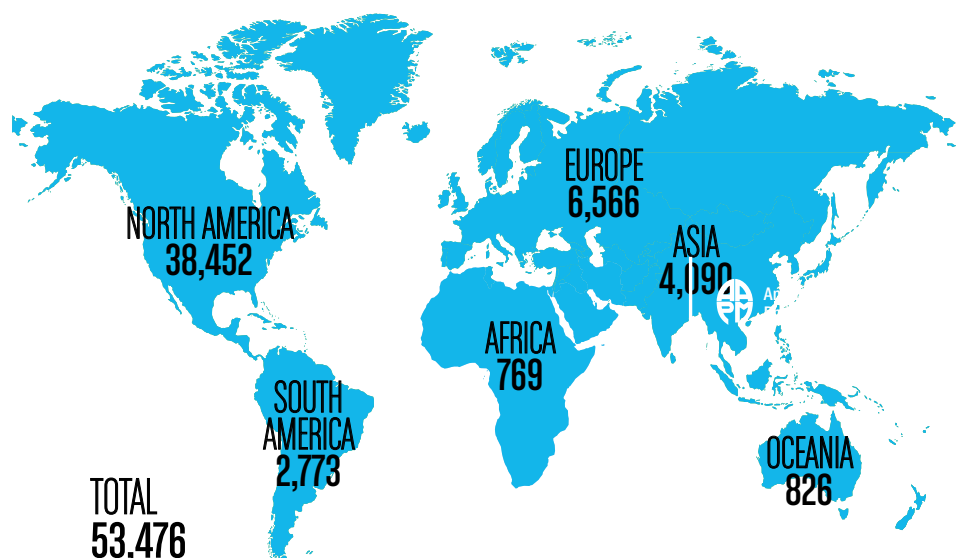
In his research, Dr. Hamm focuses particularly on MR imaging of the prostate and liver, molecular imaging, MRI and CT of the female pelvis, the application of MR contrast agents, and the potential of iron oxide nanoparticles as molecular probes. His research group in interventional radiology invented the paclitaxel-coated balloon catheter and was the first to explore its use in treating arterial stenosis.

In 2018, Dr. Hamm established Collaborative Research Center (CRC) for Diagnostic Radiology at Charité. It was the first CRC ever funded by the German Research Foundation (Deutsche Forschungsgemeinschaft, or DFG) in the field of diagnostic radiology. The CRC, called "Matrix in Vision," explores how pathological changes of the extracellular matrix can be visualized with novel imaging techniques. Dr. Hamm previously led a DFG-funded clinical research unit, "Magnetic Iron Oxide Nanoparticles for Cellular and Molecular MR Imaging."

An accomplished author, Dr. Hamm has contributed to 756 original peer-reviewed papers and 14 textbooks. He has delivered more than 500 lectures, including refresher courses at the RSNA Scientific Assembly and Annual Meeting and at the European Congress of Radiology (ECR). He is editor of the *German Journal of Radiology (RöFo)*, and he is a member of the advisory board of the *Japanese Journal of Radiology*, the official journal of the Japan Radiological Society.

Dr. Hamm's leadership and talent for collaboration are exemplary. He is a past president of ECR and the European Society of Radiology. He served as chair of the Berlin-Brandenburg Radiological Society from 1995 to 1996 and as president of the German Radiological Society from 2003 to 2005. He has been awarded the Alfred Breit Prize of the German Society of Radiation Oncology, a gold medal from the Asian Oceanian Radiologic Society of Radiology and the Swiss Society of Radiology's Schinz Medal.

RSNA Membership



Monday's Physics Tip

Fetal doses are typically given in milligrays because the fetus is assumed to be an organ of the mother and the milligray is the unit of absorbed organ dose. Further, for whole fetal body diagnostic exposures dose in milligray and millisieverts are equivalent.

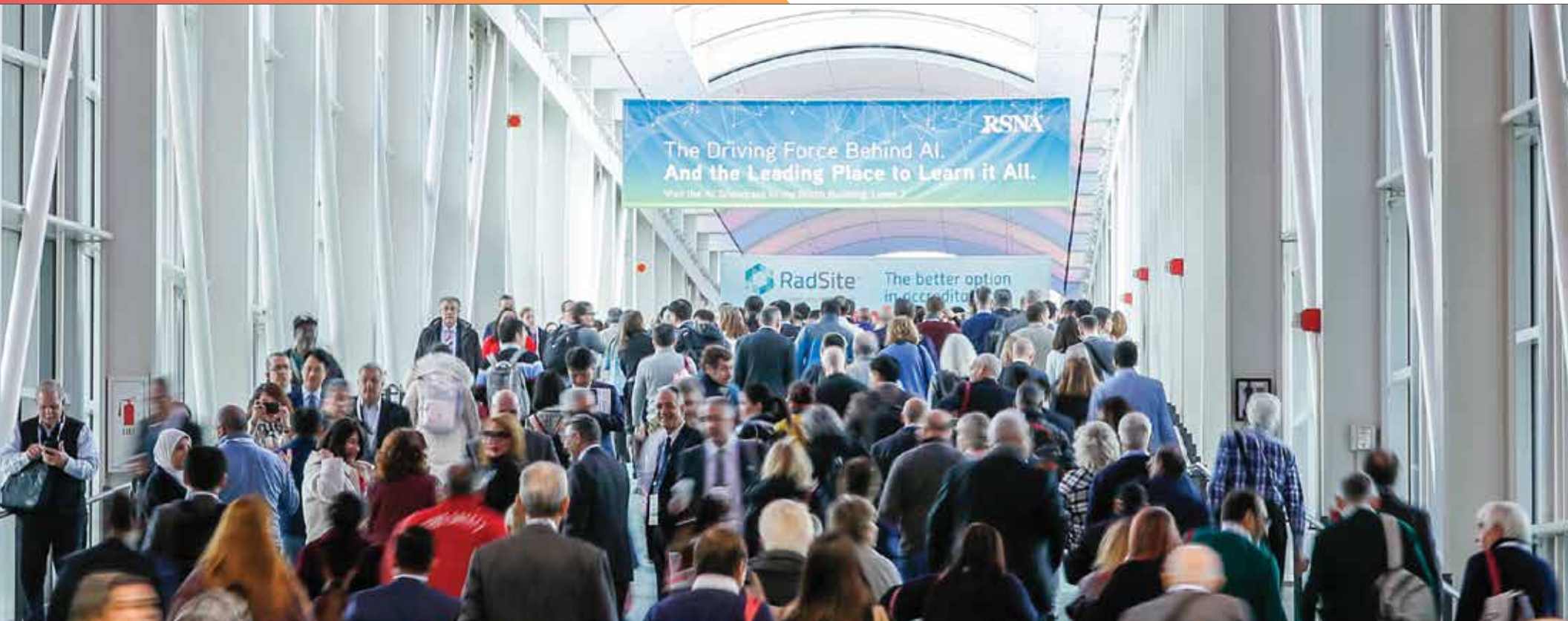
RSNA 2019 Attendees SEE POSSIBILITIES *TOGETHER*

McCormick Place is full of possibilities this week and meeting attendees are enjoying the myriad opportunities to learn and network. RSNA President Valerie P. Jackson officially opened the meeting and delivered her President's Address, followed by best-selling author Dr. Abraham Verghese, MD, who reminded the audience of the importance of thoughtful time spent with patients.



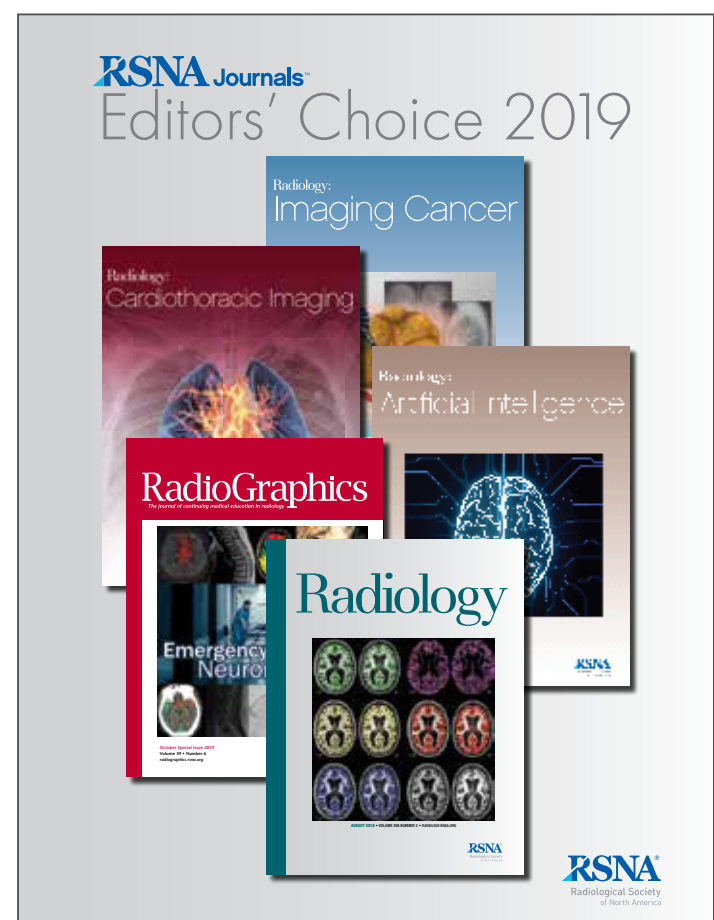
RSNA President Valerie P. Jackson (pictured center) presented the Society's Outstanding Researcher Award to Elizabeth A. Kripinski, PhD, (left) and the Outstanding Educator Award to Jocelyn D. Chertoff, MD, (right) during Sunday's Opening Session. The RSNA Board of Directors selects recipients who have demonstrated significant contributions and a long-term commitment – 15 years or more – to radiologic education or research.





Margulis Award Presented Today

The RSNA Alexander R. Margulis Award for Scientific Excellence recognizes the best original scientific article published in Radiology for a given year. The Margulis Award Nominating Committee and the Margulis Award Selection Committee review published manuscripts based on their originality and potential scientific and clinical impacts. The 2019 Margulis Award will be presented during today's Plenary Session at 1:30 p.m. in the Arie Crown Theater. This award-winning study and one top article from each of the RSNA family of journals is available in the *RSNA Journals Editor's Choice 2019* publication. A limited number of copies are available in bins throughout McCormick Place, at Membership & Resources in the Connections Center and in Publishers Row, South hall A, Booth 1119.



AI Aids Automatic Annotation, Detection of Bone Metastases from CT Data

By Nick Klense

While diagnostic imaging is the best tool for early detection of bone metastases, the imaging modalities currently available — CT, MRI, bone scintigraphy, PET and PET/CT — often present challenges, according to presenters of a Sunday session.

“Although CT enables imaging bone density and morphological structures without the effects caused by the superimpositions of bones and organs, its low sensitivity (74%) and specificity (56%) means it has limited use as a bone metastases screening test,” said presenter Saori Koshino, MD, a radiologist at the University of Tokyo’s Graduate School of Medicine.

Nevertheless PET/CT does allow users to more accurately identify the location of a lesion with superior image quality. In fact, its sensitivity and specificity are 98 and 56% respectively. However, PET/CT has the significant disadvantage of being costly and of limited availability.

Deep Learning May Lead to Gold Standard

In recent years, computer aided diagnosis (CAD) has started to adopt deep learning (DL) approaches. “Generally, data annotation has been one of the most relevant aspects of the whole development of CAD

systems using DL,” Dr. Koshino said. “Yet despite these advancements, due to the large volume of available data, there is no gold standard for generating annotations in the radiological field.”

To achieve such a standard, Dr. Koshino has developed an algorithm using DL for the early detection of bone metastases from CT data. Her research also explored the feasibility of automatically generating ground-truth data for training the proposed DL algorithm using PET/CT datasets.

The end goal was to produce an artificial intelligence (AI) pipeline system based on ¹⁸F-fluorodeoxyglucose (FDG) PET/CT for the automatic annotation and detection of bone metastases from CT data. “We hypothesized that the proposed detection method would achieve high sensitivity and that the automated annotation method would help reduce costs and mitigate the time-consuming task of data annotation,” Dr. Koshino said.

The study retrospectively evaluated 201 whole-body PET/CT examinations with bone metastases. First, an automated annotation tool for bone metastases was created to extract lesions from PET data. A binary bone mask was obtained from CT data and multiplied by the rescaled PET volume. A convolutional neural network (CNN), ResNet-50, was used to discard high FDG uptake regions outside the bones.

Each bone metastasis candidate was then converted into a slice-wise bounding box. Afterward, a radiologist labeled automatically extracted lesions with osteoblastic metastasis, osteolytic metastasis, intertrabecular metastasis or other forms of metastases.

Using the automatic annotation tool, 1,377 lesions were detected, consisting of



Koshino

403 osteoblastic metastases, 381 osteolytic metastases, 30 intertrabecular metastases, and 563 other forms of metastases, including normal regions and inflammation. The lesion-wise sensitivity of the Mask R-CNN model on the validation dataset was 77.8% (21/27) for osteoblastic metastases and 74.6% (44/59) for osteolytic metastases, with a false positive per image of 0.71.

According to Dr. Koshino, this research is an important step toward leveraging AI for better detection and increased accuracy of bone metastases using CT data. “This proposed AI pipeline system is well-positioned to alleviate the burden of generating annotations and prevent oversights by radiologists when detecting bone metastases,” she added.

Smoking History Should be Discussed with All Cancer Patients, But Often is Not

By Melissa Silverberg

Discussing smoking cessation with cancer patients with diagnoses beyond head, neck, and lung disease can be important for improving patient outcomes, according to the presenter of a Sunday session. But that often isn’t happening.

The importance of working with patients to quit smoking was the subject of a poster presentation “Smoking History and Cessation Discussions in Cancer Patients Receiving Definitive Radiotherapy: Do We Treat All Patients Equally?” by John M. Holland, MD, associate professor of radiation oncology at Oregon Health & Science University.

“It’s very challenging for a patient to stop smoking, so there may be somewhat of a nihilistic approach among providers and we don’t even address it with them anymore,” Dr. Holland said. “But the research shows us it’s so important for improving outcomes.”

Dr. Holland referenced a 2018 article in *JAMA Oncology*, “Association of Smoking Status With Recurrence, Metastasis, and Mortality Among Patients With Localized Prostate Cancer Undergoing Prostatectomy



Holland

or Radiotherapy,” that got him thinking about how often health care providers at his institution are — or are not — talking to patients with different types of cancer about their experience with tobacco.

Dr. Holland and colleagues hypothesized that doctors do a better job discussing smoking cessation with patients suffering from cancers where tobacco is recognized as a causative agent such as head, neck, and lung

cancers, but not for cancers of the prostate or breast, even though research shows smoking may impact these types of cancer as well.

“People don’t think about breast and prostate cancer as much related to smoking, but it does matter,” he said.

Providers Should Bring up Smoking

Dr. Holland and his team studied initial consultation notes from the electronic

medical records (EMR) of 592 non-metastatic patients seen from January 2014 to June 2017 with inputs from attendings, residents, and nurses. Discussions regarding smoking cessation were documented with 55% of head, neck, and lung cancer patients, but only 14% of breast and prostate cancer patients. Smoking history was also less likely to be recorded in prostate cancer patients, than others, but even in patients where their smoking status was recorded, discussions about cessation often did not happen.

Some providers may not be as aware of the poor outcomes for breast and prostate cancer patients undergoing radiotherapy who smoke, while others may not think they will have success convincing patients to stop smoking, he said. Research shows that most smokers attempt to quit several times before they are successful.

Dr. Holland said it could also be a matter of provider bias, where a doctor doesn’t think they will be successful in trying to

get a patient to quit smoking, so they don’t even ask.

“But, if you’re hoping your patients don’t smoke during treatment, you’re not going to get anywhere unless you ask and have some kind of discussion regarding cessation,” Dr. Holland said. “They may not be ready, and even if they are it is hard to stop, but we have to try.”

In the future, Dr. Holland hopes to create a system to clearly tag the EMR of current smokers so that when a nurse, attending physician, or other health care provider pulls up their chart, it would signal providers to have a conversation about smoking cessation.

“Even with discussions, it’s hard to get people to stop smoking, but I don’t think it’s reasonable to expect anyone to stop smoking if the health care team doesn’t bring it up,” Dr. Holland said. “We should do a better job.”

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Thermal Ablation Proves Viable Treatment Option for Early Lung Cancer

By Mike Bassett

Thermal ablation for the treatment of stage 1 lung cancer achieves similar overall survival to stereotactic body radiotherapy (SBRT) and should be considered as an appropriate treatment option for early stage disease, according to a retrospective meta-analysis study presented Sunday.

In his presentation, Johannes Uhlig, MD, Yale School of Medicine, and University Medical Center Goettingen, Germany, reported that thermal ablation and SBRT demonstrated comparable overall survival (OS) in all lung cancer subgroups, including adenocarcinoma, non-small cell lung cancer and small cell lung cancer.

"Thermal ablation is a minimally invasive and safe local treatment for early stage lung cancer," Dr. Uhlig said. "Thermal ablation could be performed in one setting typically as an outpatient procedure and could be combined with precision image-guided biopsy, so patients could get a diagnosis with tissue sampling, biomarker studies and treatment of eradicating lung cancer at the same time."

Currently, the established standard of care for early stage lung cancer is SBRT. In this study less than 3% of surgically ineligible patients with early stage lung cancer who receive local cancer treatment were treated with thermal ablation.

SBRT can be used for large and centrally located tumors, but treatment often requires multiple fractions stretching over several days or weeks. According to Dr. Uhlig,

SBRT has few early complications, but there are growing concerns about late-onset complications, especially cardiac toxicities.

"Thermal ablation can be performed even in patients with reduced lung function, chronic lung disease and tumors in post-resection and post-radiation field," added Dr. Uhlig. "Given the minimally invasive nature of thermal ablation, there may be low rates of early complications such as pulmonary hemorrhage or pneumothorax, although these are self-limiting in most cases."

Thermal Ablation Results Comparable to SBRT

In this study, which was conducted at the Yale Cancer Center, Dr. Uhlig and his colleagues queried the National Cancer Database for patients with AJCC (American Joint Committee on Cancer) stage 1 lung cancer diagnosed from 2004-2015, and included adenocarcinoma, squamous cell carcinoma (SCC), unspecified non-small cell lung cancer (NSCLC) and other histologies (except carcinoid). Treatment was stratified as thermal ablation (radio-frequency ablation, or grouped laser/cryo ablation) and SBRT.

Of the 55,336 patients in the study, 97.3% received SBRT, while 2.7% received thermal ablation. Histologies included adenocarcinoma (34.9%), SCC (30.0%), NSCLC (15.2%) and others (19.9%).

Patients who received thermal ablation were younger and more likely to be Caucasian, have private insurance, more comorbidities and have smaller adenocarcinoma.

Dr. Uhlig and his colleagues found that thermal ablation and SBRT demonstrated comparable OS in all subgroups: adenocarcinoma (1-year OS: 86% vs 86%; 3-year OS: 49% vs 52%), SCC (1-year OS: 67% vs 67%; 3-year OS: 27% vs 30%), NSCLC (1-year OS: 83% vs 83%; 3-year OS: 49% vs 47%), and other histologies (1-year OS: 85% vs 83%; 3-year OS: 59% vs 50%).

"Thermal ablation shows comparable OS to SBRT in stage I lung cancer and should be considered as an alternative treatment

option, independent of histological subtypes," concluded Dr. Uhlig and his colleagues.

"We need more studies and data on the comparative effectiveness and cost effectiveness of thermal ablation compared to other treatment options for early-stage lung cancer," Dr. Uhlig said. "Thermal ablations are already available in many local sites for other tumors, such as liver or kidney tumors. Thus, it would be quite straightforward to offer a lung cancer thermal ablation program without heavy capital. We, however, need more local experts in lung cancer, including interventionists who are master clinicians in thermal ablation."



Uhlig

Thermal ablation could be performed in one setting typically as an outpatient procedure and could be combined with precision image-guided biopsy.

Johannes Uhlig, MD

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Multicenter Study Shows Promise for CEUS LI-RADS

By Lynn Antonopoulos

Contrast-enhanced US (CEUS) has shown strong clinical value for classifying focal liver observations in patients at risk for hepatocellular cancer (HCC), according to preliminary results of a multicenter validation study.

The ongoing study, presented Sunday by Andrej Lyshchik, MD, PhD, associate professor of radiology at Thomas Jefferson University Hospital (TJU) in Philadelphia, was conducted through 11 centers internationally and is the first prospective validation of the American College of Radiology's (ACR) Contrast-Enhanced Ultrasound Liver Imaging Reporting and Data System (CEUS LI-RADS).

First presented internationally in 2016, CEUS LI-RADS is described by the ACR as a comprehensive system for standardizing the acquisition, interpretation, reporting and data collection of CEUS examination for evaluating focal liver lesions detected in patients at high risk for HCC.

The CEUS LI-RADS standards were created according to CEUS image acquisition methods and related contrast agent properties and are similar to those set for CT and MRI.

Dr. Lyshchik cited challenges in using CEUS for liver imaging including a lack of protocol standardization, poorly defined diagnostic features of malignancy, an over-



Lyshchik

lap in traditional diagnostic criteria between HCC, intrahepatic cholangiocarcinoma (ICC) and liver metastasis, as well as substantial reporting variability and a lack of CEUS integration.

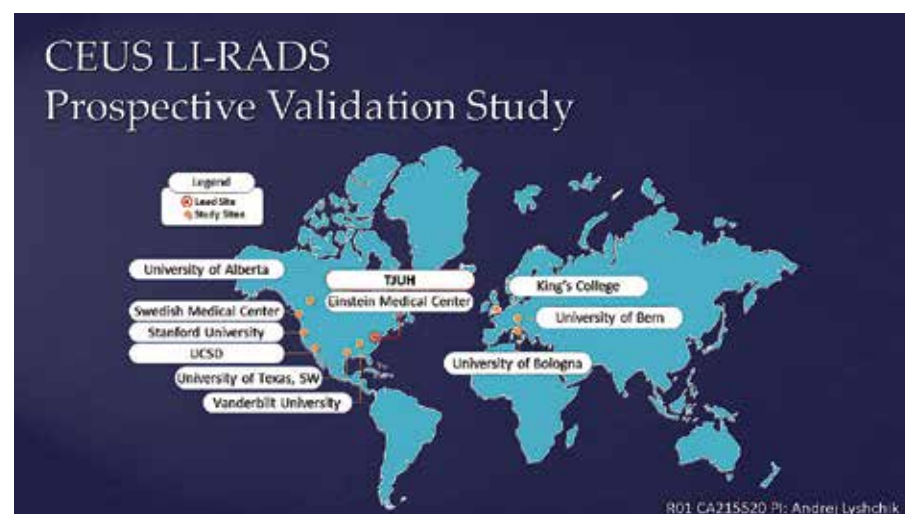
Under LI-RADS protocol, focal liver observations are classified as LR-5 (definitely) HCC if they are greater than 1 centimeter with arterial phase hyperenhancement and late, mild washout. By comparison, observations with rim enhancement and/or

early washout and/or marked washout qualify as LR-M, malignant but not specific for HCC.

Dr. Lyshchik and other members of the working group responsible for ongoing development and validation of LI-RADS, examined a total of 439 nodules from a population of 402 patients at risk for HCC.

Using CEUS performed within four weeks of CT/MRI, they confirmed diagnosis for 335 nodules while 104 of them remained indeterminate and were set to undergo additional examination.

"Definite diagnosis on MRI, imaging follow-up or composite tissue histology for MRI-indetermi-



nate observations were used as a reference standard," he said.

Of the 335 nodules, 231 were proven to be HCC while only 13 were other malignancies, 46 were indeterminate and 45 were benign.

According to the study results, the specificity of CEUS LR-5 for HCC was nearly 98%. The sensitivity of CEUS LR-5 for HCC was almost 60%, a circumstance that Dr. Lyshchik said is unfortunate, but similar to CT and MRI.

Andrej Lyshchik, MD, PhD

make the criteria as specific as possible, so the patients with positive diagnosis can proceed straight to treatment," he said.

Validation of CEUS LI-RADS is an ongoing effort. Dr. Lyshchik said, "Similar to CT and MRI, lots more needs to be done to fully understand the performance of our approach in different patient populations."

Looking ahead, the LI-RADS working group will concentrate on increasing diagnostic sensitivity. "Unfortunately, we feel we are hitting the limits of an imaging-only approach for disease diagnosis and our next endeavors will include multimodality assessment with potential addition of AI and machine learning."

a deliberate choice to

Similar to CT and MRI, lots more needs to be done to fully understand the performance of our approach in different patient populations.

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Special Interest Sessions Focus on Advanced and Innovative Radiology Topics

The RSNA Board of Directors has determined these courses to be of particular importance. All courses are presented from 4:30 to 6 p.m. today. Arrive early, as increased audience attendance is expected.

The Best of *Radiology* in 2019—The Editors of *Radiology* Keep You Up to Date Room N227B

Radiology editor, David A. Bluemke, MD, PhD, presents the key articles over the past year that may affect your clinical practice, evaluates new research developments in the field of imaging and shares new developments that may affect the management of your patients.

Translating Evidence-based Health Interventions into Routine Clinical Practice— Implementation Science – Room S406B

Presenters will discuss key study designs and frameworks used in dissemination and implementation research. The session will identify outcomes of this research and present emerging areas of inquiry and potential future directions in this field. The session will conclude with a Q&A with presenters.

Value MR Imaging—Paradigm Shift from Generic to Targeted—Why and How Room E353C

Sessions will present innovative approaches to improving MR efficiency, including design technology and MRgFUS. Presenters will also offer a novel framework for focused MR interpretations.

The Role of AI in Radiology in the Developing World? – Room E450A

Presenters will discuss a variety of unique programs that are assisting radiologists in low-resource countries and underserved areas of high-income countries. Discussions will include the use of artificial intelligence (AI) in providing specific radiologic diagnoses and treatments, including for tuberculosis, women's imaging and diabetic retinopathy.

Paths to Recovery: What Can Neuroimaging Teach Us about Depression and Its Treatment – Room N226

This session will discuss the use of deep brain stimulation (DBS) as a novel therapy for patients with treatment resistant depression. Presenters will share current psychoradiology treatments, strategies for developing imaging biomarkers for treatment selection and how DBS went from theory to practice.

Corporatization of Radiology – Room S401CD

This panel discussion will provide varying perspective on how radiology has been transformed and restructured by corporatization. Presentations will focus on the overall market, how radiology has changed in Australia and present both sides from practices that elected to sell and those that did not.

Hot Topic: Vaping-associated Lung Injury – Room N228

Learn the latest about this public health crisis and how radiologists are on the front line of diagnosis. The current CT and CXR findings of vaping-related lung disease will be shared, along with the histopathology and physiological changes that radiologists might see in imaging. The session will conclude with a Q&A.

New Informatics Tools are Helping Patients Understand Radiology Reports

By Richard Dargan

Imaging informatics has the potential to facilitate communication between patients and radiologists and help patients better understand their radiology reports, according to a leading authority who spoke Sunday.

Historically, radiology reports have been prepared for primary care physicians and specialists to communicate information that will affect the next steps in patient care. More and more patients today are getting direct access to the reports through patient portals, where they are finding challenging language and radiology colloquialisms that they may be likely to misunderstand.

“As a one-way form of communication, the radiology report is not terribly helpful for patients,” said Tessa S. Cook, MD, PhD, assistant professor of radiology at the Perelman School of Medicine at the University of Pennsylvania in Philadelphia. “It doesn’t provide an opportunity for the patient to ask

questions and get clarifications.”

Informatics presents an opportunity to design innovations that help patients better understand their radiology reports.

Many groups are actively working on ways to address this issue, Dr. Cook said. At the University of Pennsylvania, Dr. Cook and colleagues Charles Kahn, MD, and Seong Oh, MD, piloted an informatics system called the Patient-Oriented Radiology reporTER (PORTER) that automatically attaches definitions and illustrations to terms.

In the system, when the user drags their mouse over a complex word or term, a window pops up giving a definition written for the layperson. Public domain illustrations and annotations of anatomy and physiology linked to Wikipedia further augment the information.

“It helps make the radiology report less mystifying to patients,” Dr. Cook said. “They can review it at their leisure and then have the conversation with their physician about what comes next.”

PORTER also includes the name and a photograph of the interpreting radiologist as a way of communicating to the patient that



Cook

there is a specialist behind the interpretation.

The system, originally created for knee MRI reports, has grown to include more than 14,000 terms. Additional pilot programs are underway in screening mammography and image-aided biopsy. The department hopes to have the system integrated into patient portals beginning in January.

Informatics also has the potential to help people more effectively connect with the radiologists caring for them or their family members. Several pilot programs are looking at virtual consultations with patients and other ways patients can review the information in the report with physicians.

“One thing we’ve heard from patient advocates is that a conversation with the radiologist helps people better understand their condition or the condition of their family members, but they’re never given that opportunity and that’s frustrating,” Dr. Cook said. “We want to find ways to create that opportunity.”

The radiology department at Massachusetts General Hospital in Boston piloted a virtual radiology consultation pilot program in 2016 that has grown to include five radiologists and more than 50 patients. Patients

have responded favorably, with 90 percent saying the consultations markedly improved their health care experience.

Virtual Communication, Embedded Surveys on the Horizon

Active areas of research include virtual consultations with patients and other ways patients can review the information on the report with physicians.

Other ideas include embedding surveys into radiology reports so that patients can weigh in on the accessibility of the information in the report and the value of the interpretation. Informatics can help monitor follow-up recommendations, identify patients overdue for cancer screening and create imaging orders automatically to take the burden off the primary care physicians.

Dr. Cook and her colleagues have been exploring the use of Amazon Mechanical Turk (AMT), a crowdsourcing marketplace that allows users to survey laypeople for research purposes. Survey responders can serve as patient surrogates who look at actual radiology reports and offer feedback.

A study using AMT showed that patient summaries can help increase their comprehension of radiology reports. Teresa Martin-Carreras, MD, a resident at the University of Pennsylvania, will be discussing the study results at the Fast 5 session Tuesday at 1 p.m. in the Arie Crown Theater.

View a video interview with Dr. Cook at [RSNA.org/Bulletin](https://www.rsnabulletin.com).

One thing we’ve heard from patient advocates is that a conversation with the radiologist helps people better understand their condition or the condition of their family members, but they’re never given that opportunity and that’s frustrating

Tessa Cook, MD, PhD

Develop Micro-Habits to Cultivate Life-Long Learning

By Mary Henderson

Incorporating small habits into your day has the ability to compound and lead to remarkable results, Aarti Sekhar, MD, told fellow radiologists Sunday afternoon.

“We may not see the effects at first, but consistently practiced over time, micro-habits can become lifelong habits,” said Dr. Sekhar, associate professor of radiology at Emory University School of Medicine.

Inspired by the book *Atomic Habits* by James Clear, Dr. Sekhar has incorporated six habits into her daily routine to reach specific goals in order become the person she wants to be.

“I don’t like to talk about goals. True behavior change is identity change,” she said. “Instead of saying ‘I want to run a marathon,’ it’s ‘I want to be a runner.’”

Dr. Sekhar has purposefully designed her environment to facilitate the exercise habit: she keeps her bicycle parked right by the front door. She has also eliminated visual cues for bad habits she wants to avoid — there’s no TV or junk food in her house. Habit tracking, in which you record your specific behaviors throughout the day, and accountability are other habits that keep her moving forward.

“My daily running buddy keeps me accountable for my 6 a.m.

run,” she said. “Putting commitments on the calendar and announcing my plans are other ways I keep myself accountable.”

At work, Dr. Sekhar has incorporated four micro-habits into her work routine that foster lifelong learning. To make learning an active, real-life experience, she maintains her own personal database of cases with pathology follow-up. Her searchable case log serves as both a form of self-teaching and a useful teaching tool.

“I give my residents mini-case conferences throughout the day where I present six cases pulled from my database,” she said. “They love it.”

She said these mini-case conferences are easier to prepare — and a better way for residents to learn.

Another micro-habit she’s embraced is creating highly visual PowerPoint (PPT) presentations using a method she learned from her mentor Claude Sirlin, MD, professor of radiology at UC San Diego. The format puts the teaching point at the top of the slide with supporting information represented visually.

“Anything that can be visual should be,” she said, demonstrating how the PPT drawing tool could be used to create a diagram of the stomach.

Participating in tumor boards and multidisciplinary conferences, reading for a specialty clinic and virtual embedding are other ways Dr. Sekhar enhances her learning. To minimize distractions when reading or concentrating on other work tasks, she turns off her phone and email notifications.

“I don’t believe in multi-tasking,” she said.

Lastly, she incorporates wellness into her day — and encourages her residents to do the same by taking them on walking breaks and field trips.

“We are our habits,” she said. “Develop habits that work hard for you.”



Sekhar

True behavior change is identity change. Instead of saying ‘I want to run a marathon,’ say ‘I want to be a runner.’

Aarti Sekhar, MD

Monday's Answer

[Question on page 4A.]

A Cerebrovascular syndrome occurs at such high doses and results in death within days.

CONTINUED FROM PAGE 1A

Perspective Change is Key to Reaching New Levels of Patient Connection

Dr. Jackson acknowledged challenges presented by high case volumes, practice-boundary issues, RVU-based compensation plans and the basic anxiety some radiologists may feel with patient interaction.

"Many of us are quite comfortable with the socialization that may occur in the reading room, but less comfortable with interaction with patients, families and the health care team," she said.

However, to become more comfortable with the uncomfortable, Dr. Jackson suggested following the example of photographers who change position and look at things from an unexpected angle or through a different lens.

"It takes courage to be willing, in the midst of the current environment in medicine, to make a conscious change in one's perspective and then to translate that perspective into new ways of working," she said.

Three Lenses, Three Different Perspectives

Using telephoto, macro and wide-angle lens examples, Dr. Jackson related them to perspectives of radiologists, patients and referring physicians. First, through a telephoto or zoom lens view,

For time-pressed radiologists, human connection reminds us of how critical our work is to real people and gets us back to our Hippocratic roots as physicians.

Valerie P. Jackson, MD

radiologists may look more closely at themselves and recognize the self-constructed barriers that constrain them.

Next from a macro lens perspective, the patient experience can be enlarged and explored in better detail.

Finally, using a wide-angle lens view, radiologists develop a broader perspective on patient care and develop better interaction with referring physicians.

"If we widen our perspective toward our colleagues, proactively building value-based relationships with them, the pathway to patient interaction will be attainable," she said.

Dr. Jackson encouraged audience members who have the opportunity to start simply and engage with just one patient in the waiting room. From there, all radiologists may open communication opportunities by leveraging tools like websites,

social media and print materials and redesigning office and workflow processes.

Radiologists should also position themselves as partners to referring physicians and work toward a new, enhanced and more connected working relationship with them, according to Dr. Jackson.

In order to become advocates for expanding radiologists' role as a communication bridge to patients, she challenged the audience to demonstrate how an empowered radiologist, sharing results directly with patients, can decrease the possibility of information gaps or miscommunication and help accelerate the transmission of imaging results.

"We should remember that we are essentially gatekeepers of valuable information, and that information is significantly enhanced when we interpret and convey it directly via two-way exchange with patients," she said.

CONTINUED FROM PAGE 1A

Physicians Care Through Contemplation, Attentiveness

noted that they struggle with burnout because of, "productivity demands, a sense of isolation in the reading room and a misunderstood role in health care."

The third consequence of this remote model, he said, is medical error. He reminded the audience that, "patients have a front side and a backside," and that putting eyes on a patient, not relying primarily on the data, can help prevent medical errors and misdiagnoses.

Finally, he noted a loss of ritual as the fourth consequence. We engage in rituals to signify crossing a threshold, he said. Dr. Verghese spoke about the privilege afforded physicians to touch and examine patients, and that there is a ritual to the process when it is done thoughtfully. He emphasized the importance of working with medical trainees to ensure that the skill of performing a physical exam is passed down and that trainees are shown by example the significance of this ritual of touch to patient care.

This transformation of moving toward more contemplative and attentive health care offers myriad benefits for the patient, and ultimately for the physician.

"Preserving the 'person'-ality of the patient helps patients maintain their identity during a time of stress and fear when awaiting a diagnosis, and the physical examination by the physician validates the patient's complaint by focusing on their body providing a symbolic centering," Dr. Verghese said. "Ultimately, this work of bringing everything back to the patient and the patient's body, helps the patient connect an image, biopsy report or lab test to their personhood."

By not performing a physical examination of the patient, physicians are losing a ritual, one that is transformative, transcendent and is at the heart of the patient-physician relationship.

Abraham Verghese, MD



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