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Bulletin

The Crossroads of Radiology
ACR 2017 Special Report

ACR
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ACR 2017™ SPECIAL REPORT

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OUR MISSION: The *ACR Bulletin* supports the American College of Radiology's Core Purpose by covering topics relevant to the practice of radiology and by connecting the College with members, the wider specialty, and others. By empowering members to advance the practice, science, and professions of radiological care, the *Bulletin* aims to support high-quality patient-centered health care.

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H. Benjamin Harvey, MD, JD, legal community representative to the ACR Artificial Intelligence Advisory Group

Guest columnist

Forecasting the Legal Implications of AI

New deep-learning technologies entering the health-care space bring a host of unknowns for patients and physicians.

Artificial intelligence (AI) represents a transformative technology that has the potential to disrupt the field of radiology, potentially more than any other health-care technology in recent memory. In addition to the changes AI will bring to day-to-day practice, the legal, regulatory, and policy landscape will also be transformed.

AI technology has provoked a mixture of excitement, fear, and anxiety in both the public domain and in the health care industry. This early uncertainty is likely to translate into inconsistent regulatory and legislative responses to health-care AI technologies at the federal, state, and local levels. An appropriate example of this is the robust and oft-conflicting regulatory responses to the use of AI in the transportation industry. In the first five months of 2017, 33 states have introduced legislation related to autonomous vehicles, compared to only six states in all of 2012. Beyond legislative and executive action, many courts will be faced with tortured attempts at applying traditional legal principles to new-age quandaries created by AI.

> Patients will benefit most from artificial intelligence if radiologists serve a leading role in guiding the technologies that best enhance medical imaging diagnosis and treatment.
>
> **– James A. Brink, MD, FACR**

As the ACR frames its position and strategy with respect to AI technologies, the AI Advisory Group is taking into account the following legal and regulatory considerations and implications.

Ownership

Data from millions of individual patients will be necessary to develop and train AI tools. What legal and ethical obligations are owed to the patients whose data are used to create these tools?

Privacy

AI tools in health care will allow for earlier and more accurate predictions regarding patient behavior and health care outcomes, raising challenging privacy questions. For instance, should AI algorithms using medical or genetic data be employed by insurers to predict and price insurability of an applicant? Should reproductive specialists use AI to predict the intelligence, sexuality, or health of a blastocyst for embryo transfer? And can a patient who values the spontaneity of life prohibit such forward-looking predictions of their health status? These are just a few possible scenarios.

Certification

A human must attain a certification or license before interpreting a chest X-ray. How do AI tools become certified to perform the same medical task? For instance, IBM reported that Watson was ready to take the Radiology Boards. Would passing the boards be enough to certify Watson? Or should AI tools be held to a higher standard of care? This issue of how we certify AI tools must strike the right balance between encouraging innovation and growth in this industry while protecting patients from ineffective or inconsistent diagnostic solutions.

Liability

As radiologists cede more clinical decisions to machine-based algorithms, do they become inherently less responsible for the final interpretations? The answer is almost certainly yes. As a result, this is likely to mean a gradual shifting from professional liability (holding the radiologist responsible for harm caused by a medical decision) to product liability (holding the manufacturer of the AI tool responsible for harm caused by a medical decision).

Human Resources

As AI substitutes begin filling human roles, there will be a shake-up in the needs of the labor market. Certain health care jobs will be eliminated, others will be created, and many job descriptions will simply be rewritten. Ultimately, it is likely that AI will increasingly shift health care investment from payroll to capital expenditure. If in doubt,

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DISPATCHES

NEWS FROM THE ACR AND BEYOND

August

21–24 AIRP Categorical Course: Neuroradiology, AFI Silver Theatre and Cultural Center, *Silver Spring, Md.*

September

7–9 Coronary CT Angiography, ACR Education Center, *Reston, Va.*

7–10 RLI Leadership Summit, Babson College, *Wellesley, Mass.*

11–13 ACR-Dartmouth PET/CT, ACR Education Center, *Reston, Va.*

14–16 Breast Imaging Boot Camp With Tomosynthesis, ACR Education Center, *Reston, Va.*

18–19 Breast MR With Guided Biopsy, ACR Education Center, *Reston, Va.*

18–20 AIRP Categorical Course: Pediatric Imaging, AFI Silver Theatre and Cultural Center, *Silver Spring, Md.*

29–30 AIRP Categorical Couse: Breast Imaging, AFI Silver Theatre and Cultural Center, *Silver Spring, Md.*

October

4–6 High Resolution CT of the Chest, ACR Education Center, *Reston, Va.*

9–11 Abdominal Imaging, ACR Education Center, *Reston, Va.*

13–14 ACR Annual Conference on Quality and Safety, *Boston*

13–15 Body and Pelvic MR, ACR Education Center, *Reston, Va.*

16–11/11 American Institute for Radiologic Pathology Correlation Course, AFI Silver Theatre and Cultural Center, *Silver Spring, Md.*

20–22 Cardiac MR, ACR Education Center, *Reston, Va.*

27–29 Society of Radiologists in Ultrasound 2017 Annual Meeting, *Chicago*

30–11/1 Emergency Radiology, ACR Education Center, *Reston, Va.*

Socially Connected in Cincinnati

Radiologists at Cincinnati Children's Hospital Medical Center have developed a social media outreach initiative to engage patients, families, radiologists, and other medical professionals. The department's social media portfolio includes Twitter, Facebook, Instagram, Figure 1 (a site specifically for sharing medical images), and a patient-facing blog. Through these platforms, the group has attracted tens of thousands of followers and bolstered its standing as a thought leader in pediatric imaging.

Learn more in the Imaging 3.0 case study at bit.ly/sociallyconnected.

Alexander J. Towbin, MD, associate chief of clinical operations and radiology informatics in the radiology department at Cincinnati Children's Hospital, has led a successful social media outreach initiative, engaging radiologists, referring physicians, patients, and families.

@CincyKidsRad
CincyKidsRad
@CincyKidsRad

ACR Unveils New Imaging Appropriateness Criteria

New evidence-based guidelines are now available for clinicians striving to make the most appropriate imaging decisions for specific clinical conditions. And for the first time, the Appropriateness Criteria (AC) will be published as an online supplement in the *JACR®*. This publication will increase the reach of the guidelines and make the AC citable, providing recognition to hundreds of volunteer experts who contribute their time and expertise to ensuring the most current information is made available.

Now in its 24th year, ACR AC comprises 227 topics with more than 1,100 clinical indications and constitutes the core of the widely used clinical decision support system ACR Select®. *JACR* will now publish the ACR AC in two semi-annual supplements, each containing both new and updated criteria.

Find out more at bit.ly/JACR_AC.

ACR Data Science Institute™ to Guide Artificial Intelligence Use in Medical Imaging

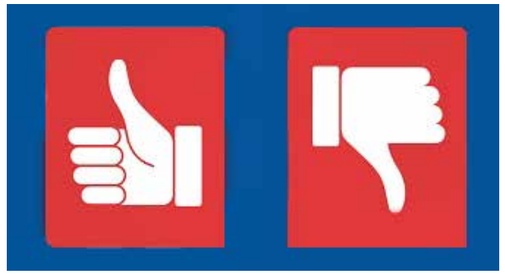
The newly launched ACR Data Science Institute™ (DSI) will be working with government, industry, and others to guide and facilitate the appropriate development and implementation of artificial intelligence (AI) tools to help radiologists improve medical imaging care. The ACR DSI will lead creation of a national quality, technical, and leadership framework to define appropriate medical imaging AI use cases; set standards for medical imaging AI interoperability; test and evaluate medical imaging AI algorithms; and address regulatory, legal, and ethical issues that accompany medical imaging AI. "The ACR DSI will create, gather, manage and integrate AI knowledge as these tools emerge to improve patient care," said James A. Brink, MD, FACR, chair of the ACR BOC.

For more about the DSI, contact ACR Director of Public Affairs Shawn Farley at (703) 648-8936 or PR@acr.org.

Patients Judge Radiologists on More Than Just Imaging Skills

How patients view their radiologist can be affected by their experiences with related staff and the facility where they receive treatment, according to a physician review study published in the *American Journal of Roentgenology*. Overall, radiologists reviewed by patients at RateMDs.com get either stellar ratings or abysmal ratings — there's no gray area. RateMDs.com uses a five-star system that allows patients to post grades related to staff, punctuality, knowledge, and helpfulness. In free-text comments, the most common words were "caring," "knowledgeable," and "professional."

Read more at bit.ly/Rad_Listen.



Hefty Increase in Chronic Venous Insufficiency Procedures in Medicare Population

A new Harvey L. Neiman Health Policy Institute® (HPI®) study, published online in the *Journal of Vascular and Interventional Radiology*, found that utilization of procedures to treat chronic venous insufficiency (CVI) in the Medicare population grew from 95,206 to 332,244 between 2005 and 2014. "As a group, cardiology experienced the most rapid growth in market share from 2005 to 2014 for all CVI procedures, far outpacing that of radiology, vascular surgery, other surgery, and primary care providers," said HPI affiliate research fellow and lead study author Anand M. Prabhakar, MD, MBA. "For interventional radiology to play a more prominent role, it is critical that trainees learn how to run a consultative practice, including how to evaluate and manage patients with CVI."

Read more at bit.ly/CV_Research.

Radiologists, Medical Students May Benefit from Gamification

Engaging medical professionals with strategy and role-playing computer games can help improve upon certain routine tasks while keeping the learners' attention, says Jeroen Tas, chief innovation and strategy officer for health care technology giant Philips. In the future, technology could help radiologists compile critical health data for diagnosis, treatment, and follow-up care via the gamification of patient care. One game, for example, guides medical students through the application of applying assessment methods while seeing patients without a physician instructor being present. Tas says it "offers a radically new approach [to] how radiologists will see, seek and share clinical information, helping them to provide an even more critical contribution to patient care."

Read more at bit.ly/Rad_Games.

Here's What You Missed

The *Bulletin* website is home to a wealth of content not featured in print. Check out blog posts, extra articles, and multimedia content at acrbulletin.org.

Fast Jets for RFS

A former US Air Force flight surgeon shares what he learned from that experience and how it could help radiology residents overcome challenges at bit.ly/Flight_Surgeon.

Speaking Up for Psychological Safety

As radiologists report increasing levels of burnout, how can we support our colleagues and trainees? Read more at bit.ly/Psych_Safety.

Radiology's Role in Alternative Payment Models

Find out why those in radiology must evaluate their role in the rapid evolution to alternative payment models at bit.ly/Rad_Evolve.

> Burnout is contagious—if it develops among technologists it can spread to radiologists, and the same is true in reverse.
>
> – **Richard Gunderman, MD, PhD, professor and vice chair of the department of radiology at Indiana University,** *bit.ly/Rad_Burnout.*

By Ezequiel Silva III, MD, FACR, Chair

The Cornerstone of Radiology Economic Policy: Our Volunteers

The members of the ACR Commission on Economics make far-reaching contributions to health care.

As the chair of the ACR Commission on Economics, I lead more than 700 devoted volunteers. This column allows me to thank these volunteers and invite more ACR members to join us. Volunteering for our commission requires not only considerable time and energy but also extensive knowledge and expertise. And the requisite knowledge is not necessarily inherent or acquired through traditional degree programs. Most of it is on-the-job training, which can take years to procure. Even then, the rules and regulations change constantly. The effort is never-ending.

This work is professionally rewarding, and the positive contributions extend well beyond the ACR. Why are the contributions of our volunteers so far-reaching? Because socio economic policy is too complex for external policymakers and stakeholders to execute on their own. It is simply impossible for organizations, such as CMS, to maintain the clinical and policy depth of knowledge necessary to complete their tasks, such as annually updating the Medicare Physician Fee Schedule.

So when CMS needs specialty-specific expertise, where does it turn? One source: the AMA, which contributes significant clinical resources. However, even the AMA cannot do it on its own. The AMA, therefore, turns to the specialty societies, including the ACR. The ACR helps provide the expertise, largely through our outstanding ACR staff. But even that is not enough. The ACR depends on its volunteer physicians and other professionals to carry the load. In a relatively rapid fashion, the call for help travels from CMS to our volunteers on the ground. From there, information is efficiently fed back up the chain to CMS. It is a cycle that occurs continuously.

Here is a specific example. One of the ACR Commission on Economics' busiest positions is advisor to the AMA Relative Value Scale Update Committee (RUC), currently held by Kurt A. Schoppe, MD. The RUC makes recommendations to CMS regarding updates to the Resource-Based Relative Value Scale (RBRVS), a determinant of physician payment. Dr. Schoppe spent years observing the RUC, learning its language, and meeting the participants before his first trip to the table as the ACR alternate advisor to the RUC. Now that he is the advisor, he represents radiology before the RUC but on a broader level, and he helps the AMA and CMS with the RBRVS' constant evolution. In fact, the RUC is very different today than when Dr. Schoppe started. I could make similar observations and statements about several other important Commission on Economics' activities, such as Current Procedural Terminology, managed care, the Hospital Outpatient Prospective Payment System, and (a more recent focus) the Medicare Access and CHIP Reauthorization Act.

But our talented volunteers cannot do what they do forever. An important function is sharing knowledge with those who will succeed us as volunteers. Succession planning is critical to ensuring that our depth of talent endures. This is especially relevant for the technical tasks described herein. I believe that mentoring and transferring knowledge must be purposeful and expected of our volunteers. For them to be successful, recruiting new volunteers to assume these roles is critical.

The volunteers of the Commission on Economics dedicate their time, energy, and skills to advance our profession. Their contributions extend well beyond the ACR. I invite other ACR members to join us on the commission and help in this effort. To get started as a volunteer, visit www.acr.org/Membership/Volunteering. Without volunteers, none of what I describe in this column could occur as effectively as it does. Thank you to the volunteers who are the cornerstone of the ACR Commission on Economics.

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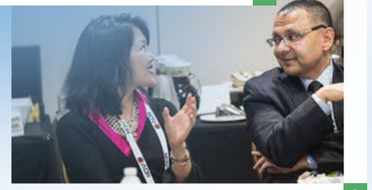

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THE CROSSROADS OF RADIOLOGY

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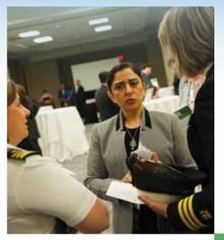

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The 2017 ACR annual meeting focused on defining radiology's place in a changing health care system. Members gathered to map out strategies for incorporating machine learning, increasing patient engagement, and thriving under new payment systems.

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1. Seth I. Stein, MD, and Frank J. Lexa, MD, MBA, FACR, interact during the speed mentoring session. **2**. ACR members learn about patient- and family-centered care. **3**. Jiyon Lee, MD, chats with Jay R. Parikh, MD, FACR. **4**. Adriano Tachibana, MD, and another member look at abstract ePosters during the meeting. **5**. Sabiha Raoof, MD, FACR, discusses R-SCAN with CMS leaders. **6**. Members of the Tennessee chapter gather on Capitol Hill. **7**. Kimberly E. Applegate, MD, FACR, interacts with other members at the speed mentoring event. **8**. Jeffrey R. Immelt, GE chairman and CEO, and James A. Brink, MD, FACR, appear on stage during the keynote address.

Keynote Address: Pivot and Go

In a flipped format, the keynote address took the form of an engaging Q&A between Jeffrey R. Immelt, GE chairman and CEO, and chair of the ACR BOC James A. Brink, MD, FACR. Immelt has been named one of the world's best CEOs three times by *Barron's*, and since he began serving as chief executive officer, GE has been named America's most admired company in a poll conducted by *Fortune* magazine and one of the world's most respected companies in polls by *Barron's* and the *Financial Times*. GE recently moved its corporate headquarters to Boston, giving MGH's Brink and Immelt common ground as they explored the connections between GE as a corporate entity and a health care business and the profession of radiology as they both navigate changing times.

Referencing GE's divestment of its financing business and its focus on data-driven technology advances, Immelt described GE's updated business model as "narrower and deeper" than had previously been the case at the company. "We always want to be on the technical edge of whatever industry we're in," he said, and advised radiologists to pinpoint the value they bring to patients and the care process with an emphasis on reduced variability and process improvement enabled by imaging data.

One way GE stays on that leading edge is by seeking out a variety of perspectives. "You're in a sea of ideas, particularly around health care," said Immelt. Rather than be overwhelmed by so much information, he suggested being proactive about listening to and incorporating disparate viewpoints. "Don't get too internally focused," he added.

Thriving in a time of constant change, particularly around artificial intelligence (AI), was a thread running throughout the conversation. "When I think about AI for radiology, our customers, and GE, we now have a new tool that is going to make everyone in this room better," Immelt said. He views this technology as an opportunity. "Don't fear it," he advised. Immelt emphasized the importance of radiology's input in shaping AI in health care. "Somebody is going to do it," he said. "Why not you?"

To stay relevant, Immelt advised radiologists to continually upgrade their skillsets. "You need to not just be resilient, but pivot," he said. "You just pivot and go." B

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Deep Learning and Radiology

What should radiologists think about machines that think? The question was posed at a packed ACR 2017 session on machine learning by Raym Geis, MD, FACR, vice chair of the ACR Commission on Informatics, which delved into AI and deep-learning algorithms and their place in the future of the specialty.

There was an emphasis on separating hype from reality and on being "prepared, not scared" when faced with machine learning. Computers can find patterns in complex data that human beings simply cannot find, Geis said. In deep learning, computers are excellent at feature extraction, finding what he called "sub visual features" and utilizing "super CAD," a super-charged version of computer-aided detection.

The pervading message was that the world will still need radiologists in the presence of machine learning proficiency. And it will make radiologists even more valuable, Geis predicted. "Are we doctors or are we image interpreters?" he asked the crowd. "If you just want to sit in a dark room, those jobs aren't going to be around. If you want to take care of patients, then you definitely still have a job."

AI knowledge will spread via the Internet and new domains, added Keith Dreyer, DO, PhD, FACR, and chair of the ACR Commission on Informatics. The more radiologists know about it, the easier it will be to implement the tools that use that technology. "Think of it as diagnosing a patient," he said. "If you don't know much about the patient, you're not likely to get a good diagnosis."

"We have to be conscious of our environment and proactive in our thinking and actions or we will surely fall behind the curve."

– Bibb Allen Jr., MD, FACR

Bibb Allen, Jr., MD, FACR, delivers the presidential address.

Presidential Address: Ahead of the Curve

Bibb Allen Jr., MD, FACR, began his address with a simple goal for the specialty: to stay ahead of the curve. "In radiology organizations and in our practices, we have to be conscious of our environment and proactive in our thinking and actions or we will surely fall behind the curve," said Allen. To further complicate matters, what it means to stay ahead of the curve is continually changing. "We now recognize that in order to be more relevant and valuable to our patients, radiologists must also be able to partner with their health systems and referring physicians to provide cohesive team-based care," he said. "The ACR is committed to being your partner in demonstrating the value you are providing every day in your practices to CMS, our health systems, and the public." Tools like Qualified Clinical Data Registries are designed to support practices of all sizes in meeting CMS reporting requirements.

Another measure to keep radiology and its patients ahead of the curve is the ACR's clinical decision support tool, ACR Select®. "Why would radiologists and our national organizations support tools that might decrease the volume of what we do?" asked Allen rhetorically. "The ACR placed a flag in the sand saying that radiologists can and will lead physicians in the appropriate use of diagnostic imaging studies." For nearly 25 years, the ACR has created and continually updated the Appropriateness Criteria® (AC) to support clinicians in ordering the most appropriate imaging for a given clinical condition. "And as technology caught up with our desire to deliver clinical decision support to the point of care, our ACR AC through ACR Select are now integrated into the electronic health record systems of all of the major vendors," said Allen.

The Imaging 3.0® initiative focuses on the culture of radiology and radiologists providing value beyond imaging interpretation. And as radiologists eye the future of artificial intelligence (AI), never has it been more important to provide this value to patients, referring clinicians, and health systems. Allen pointed to the ACR's new Data Science Institute™ as the College's vehicle to influence the future of AI in health care. "We should never characterize the introduction of artificial intelligence into radiological practice as machines versus radiologists, but rather as radiologists working with machines to add artificial intelligence algorithms to our armamentarium that will benefit our patients more than radiologists alone and much more than machines instead of radiologists," he said. B

Patients Are the Reason

The theme of patient engagement was woven throughout the ACR 2017 programming. Multiple sessions featured patients from the Commission on Patient- and Family-Centered Care (PFCC) and included Certified Patient Experience Professional credits. Pink socks dotted the crowd, indicating creative disruption from the ground up as part of the #PinkSocks movement on Twitter. Whether attendees were boosting their clinical acumen, advocating on Capitol Hill, or exploring the future of technology, patients were at the center of ACR 2017.

YPS Report: Amplifying the Message

Andrew B. Rosenkrantz, MD, MPA, ACR Young Physician Section (YPS) chair, kicked off the proceedings by characterizing the members of this singular section. According to Rosenkrantz, ACR members under the age of 40 or within eight years of completion of training are eligible to join. A total of 6,600 members belong to the section, which continues to make its presence felt within the College.

True to its mission of amplifying the voice of young and early career physicians, the YPS has achieved representation on 90 percent of ACR commissions, committees, subcommittees, and task forces. In addition, the YPS is making great strides in the legislative arena. This past year, 421 section members participated in RADTOBERFEST, a fundraising initiative similar to March Madness during which state chapters compete to raise RADPAC campaign donations.

In addition to these commitments, the YPS also exerts its influence via the written word. The section's Twitter account has attracted over 900 followers, and members recently published a well-received *JACR*® article (available at bit.ly/WomenRads) on the topic of women in radiology.

The session closed with discussion of goals for the coming year, including the retention of members transitioning from RFS to YPS status, along with increasing the section's diversity.

RFS Report: Onward and Upward

During the ACR Council meeting, McKinley Glover IV, MD, MHS, chair of ACR's Resident and Fellow Section (RFS), asserted that, at 29 years of age, the RFS could plausibly be called a Millennial. However, unlike traits stereotypically associated with Millennials (like being sheltered), members of the RFS strive to engage with the world in dynamic ways.

Case in point was the number of RFS members attending this year's annual meeting: 455, up from 380 just two years ago. Extending the Millennial metaphor, Glover characterized the RFS as having "evolved from a growth phase to maturation." Signs of this maturation include the appearance of relevant topics at ACR 2017, including exploring career pathways and getting involved in ACR governance.

Of particular importance to the section is diversity and gender equality. One major initiative moving the dial in these important areas is the RFS Women and General Diversity Advisory Group. Led by outgoing chair Amy Patel, MD, this group has worked with ACR's Commission for Women and Diversity to attract women and minorities to the field. Patel recently published an *ACR Bulletin* blog post titled "Shattering Radiology's Glass Ceiling" (available at bit.ly/RadsGlassCeiling), which became one of the most-viewed posts in the blog's history.

BOC Chair Report: Strategic Direction

On Sunday, James A. Brink, MD, FACR, presented the Chair's Report. Brink described the innovations and accomplishments that enhance the value of the society to its members as well as the radiology profession. The ACR leader outlined specific key objectives based on the ACR Strategic Plan, which was approved by the BOC in 2014.

One of the ACR Strategic Plan's themes is centered on health care payment policies and practice models. Specifically, the plan states that the ACR will help "existing and new practice and payment models recognize the value delivered by radiology." To inform and influence health care policy, noted Brink, the ACR Foundation has revised its focus to concentrate on health policy research, including its support of the Harvey L. Neiman Health Policy Institute®.

In support of game-changing technological innovation in machine learning, Brink announced the formation of the Data Science Institute™ (read more on page 5). Areas of focus for the institute include researching use cases, setting standards, and evaluating diagnostic performance. "If we don't take control and guide [AI research and implementation], it may very well take control of us," Brink said.

CEO Report: Leading Innovation

William T. Thorwarth Jr., MD, FACR, reported on the state of the ACR from the CEO's perspective. Like Brink, Thorwarth also invoked the ACR Strategic Plan, calling out the emphasis on innovation and research.

Thorwarth described the formation of the ACR Innovation Fund, which was designed "to support untested, uncommon, and distinctive ideas and activities that lead to ground-breaking efforts that align with and support the goals and objectives of the ACR Strategic Plan." The funding for these projects is up to $100,000 for a maximum of one year. So far, two cycles of applications have occurred, and 11 proposals from ACR commissions, committees, and staff have been approved.

ABR Report: Moving Forward

Lisa A. Kachnic, MD, ABR President, took the stage to update attendees on the activities of the ABR. Kachnic began by reinforcing the value of board certification. This process ensures physicians meet defined standards, recognizes specialists, and engenders public confidence in physicians. "As our boards are currently under fire in state legislatures, we need your help," said Kachnic. She encouraged ACR members to reinforce the value of ABR certification and maintenance of certification in their messaging to legislators.

In 2012, Interventional Radiology/Diagnostic Radiology (IR/DR) was approved by the ABMS as a separate clinical specialty. In response, the following new ACGME residency training pathways for IR have been developed:

- The Integrated Pathway includes internship, three years of DR training, and two years of IR training.
- The Independent Pathway, includes internship, four years of DR training (residency completion), and two years of independent IR residency training. The IR residency may be shortened to one year by completion of Early Specialization in Interventional Radiology (ESIR) curriculum in the fourth year of DR residency.

Meanwhile, initial IR/DR certification requires successful completion of the DR Core Examination and the IR/DR Certifying Examination, which includes two prescribed computerized modules and an oral exam.

Kachnic also provided a glimpse of what's next for Part 3 of MOC. The ABR's new Online Longitudinal Assessment will provide "a more continuous assessment of learning (not more frequent secure exams)." Diplomates will have weekly opportunities to participate and will receive repeat questions on topics answered incorrectly. In addition, participants will receive immediate feedback after each question is answered. Initial implementation may begin in early 2019, said Kachnic.

As the ABR works to bring continuing education opportunities to physicians, Kachnic emphasized the value the board brings to her career, saying, "I really count on the ABR material to make me the best doctor that I possibly can be." B

Jeffrey C. Bauer, PhD, delivers the Moreton Lecture.

Forecasting the Future of Medicine

This year's Moreton Lecturer looked at radiology's path forward in the shifting health-care landscape.

"My purpose is not to tell you where health care is going, because I have no idea," said health futurist and medical economist Jeffrey C. Bauer, PhD, who presented as this year's Moreton Lecturer. Bauer's comments focused on the significant uncertainty facing health care in the U.S. and the impossible task of predicting the future. He forecasted several possible trends in health spending and lauded the ACR for its initiatives, including Imaging 3.0®, which are leading the profession through this era of unpredictability.

Bauer presented several forecasts, which centered on health care spending in the next five years:

- There is a 10 percent chance that health-care spending will grow.
- There is a 50 percent chance that health-care spending will stagnate.
- There is a 40 percent chance that health-care spending will decline.

So what does it all mean for radiology? For one thing, if health spending stagnates or declines, patients will not have disposable income to pay more for care, which will force providers to adjust their care delivery and pricing. Medical organizations will need to abandon the one-size-fits-all mentality that asserts all health-care practices are the same or that all clinical paradigms will remain the same. Local areas are diverse, Bauer said, and the practice of radiology in one market will not be the same as that in another.

Another outcome of stagnation or reduction in health-care spending is that practices will have to eliminate unnecessary care for financial survival in a no-growth market. "Clinical management will be key to eliminating care that patients do not need and cannot afford," Bauer said.

The rise of precision medicine and population health is creating a personized, predictive, and preventive care model. "A revolution in biological sciences is shifting providers' core function from acute care to disease management," Bauer said. Cost-effective care will only be achieved by restructuring the patient-provider relationship. He praised the ACR's Imaging 3.0 initiative and its efforts to put patients at the center of the health-care paradigm.

Bauer's forecast on a national level was understandably nebulous. The upheavals and polarization that currently exist in government will prevent any long-term, enduring reforms, which will contribute to the uncertainty. As a result, Bauer noted, providers will be compelled to develop successful futures on their own. "And I don't have to tell you, because you get it," he said, suggesting that the ACR is taking the steps necessary to help shape radiology's future. B

The Voice of Radiology Is Strong

Radiologists head to the Hill to meet their representatives and advocate for their patients.

This May, over 500 radiologists, fellows, and residents attended the annual Capitol Hill Day during the ACR annual meeting. This was the fourth straight year our numbers have topped 500.

This year, our lobbying efforts focused on three key issues: advocating for Medicare coverage of CT colonography screening (CTC), preserving patient access to preventive screens such as mammography and low-dose CT scans to detect lung cancer, and opposing potential cuts to National Institutes of Health (NIH) funding.

H.R. 1298, the CT Colonography Screening for Colorectal Cancer Act of 2017, would require Medicare to provide patients with a minimally invasive way to be screened for colorectal cancer. Expanded patient access to other screening procedures outside of optical colonoscopies is truly imperative, as colonoscopy screening rates are currently at 62 percent in many parts of the country.[1] To date, private insurers are providing coverage for CTC in 37 states and the District of Columbia. This legislation is designed to ensure that patients ages 65 and older obtain access to this life-saving screening procedure. Although there is currently no Senate companion bill, Sen. James Inhofe (R-Okla.) has expressed an interest in reintroducing CTC legislation in the upper chamber in the coming weeks and months.

Radiologists also lobbied to maintain patient access to various preventive screening examinations, as it is still uncertain what will become of this this policy if the Patient Protection and Affordable Care Act (PPACA) is ultimately repealed and replaced. ACR members were especially focused on ensuring Congress does not repeal section 2713 of the PPACA, which requires private insurance companies — both within the individual and group (employer-based) markets — to provide preventive screening services that are reviewed and approved by select federal agencies and government advisory bodies without any form of cost-sharing such as co-payments, coinsurance, or deductibles.

Although our colleagues were lobbying to retain the government mandate that private insurance companies offer individuals access to preventive care without any out-of-pocket charges, the ACR continued to voice disagreement with the United States Preventive Services Task Force (USPSTF). The USPSTF is one of the government advisory bodies that issues recommendations regarding the types of preventive screening services insurance companies are mandated to provide patients. The ACR continues to oppose USPSTF recommendations focused on providing screening mammography every two years from age 50 to 74, putting at risk coverage of annual screening mammography beginning at age 40.

Finally, we urged our representatives to reject the proposed $5.8 billion cut in NIH funding proposed by the Trump Administration's 2018 Fiscal Year budget. As recently as December 2016, the ACR supported provisions in the bipartisan 21st Century Cures Act, which authorized $4.8 billion of new NIH funding to go toward life-saving initiatives such as the Cancer Moonshot.

This year, political advocacy was in full force both on Capitol Hill and in a digital context. ACR 2017 also coincided with the official launch of the Radiology Advocacy Network (RAN) 2.0, which included a robust social media campaign encompassing Twitter, Facebook, and the ACR Engage community. Many radiology advocates, also known as #radvocates on Twitter, took to social media to document their experiences during Hill Day. (To view more of the images captured on Hill Day visit bit.ly/ACR2017Hill.) Additionally, ACR members used certain hashtags, such as #radvocacy, which was included in 245 tweets on Hill Day alone and racked up 9,755 impressions, which is a calculation of a hashtag's potential popularity. The significance of impressions like these suggests our message can reach beyond those who tweeted that day or who make up the radiology community itself. We can make our political advocacy and grassroots efforts known in other health-care arenas in the global virtual world.

Amy Patel, MD, meets with Sen. Roy Blunt (R-Mo.)

Additionally, for those who were unable to attend Hill Day, ACR launched a virtual Hill Day, where radiologists could contact their representatives via a pre-generated call-to-action email provided by the RAN. The email also included information on the topics discussed in person. Approximately 720 emails were sent that day, proving that radiologists all across the country care about the welfare of our patients and profession whether or not they were able to actively participate in Hill Day.

We are fortunate to have a government relations team that is among the strongest in Washington, but it is also imperative that radiologists play an active role in advocacy efforts all year round. By having boots on the ground in practices and institutions, we can truly understand how advocating for these issues is paramount. We also know the possible deleterious consequences if no action is taken. Furthermore, it is equally important that trainees have a vested interest in advocacy efforts as the future of health care, radiology legislation, and new payment and practice models are going to affect them the most.

The crucial takeaway from ACR Hill Day 2017 is that the voice of radiology is strong and roaring now more than ever. In a time of health-care uncertainty and perpetual change, radiologists are stepping out of the dark to fervently advocate for their patients and profession. As ACR develops new ways for members to reach a wider audience with our advocacy efforts, this will further strengthen our outreach in the years to come and simultaneously ensure an optimistic future for our profession. B

By Amy K. Patel, MD, breast radiologist at Beth Israel Deaconess Medical Center, Boston

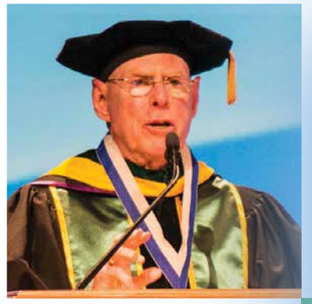
ENDNOTE

1. CDC. Colorectal Cancer Screening Rates Remain Low. Available at cdc.gov/media/releases/2013/p1105-colorectal-cancer-screening.html. Accessed June 11, 2017.

Standing Their Ground

The College honors radiology's brightest leaders.

Each year, the College recognizes individuals moving the field forward with their dedication to defending and advancing the specialty. Over 100 recipients don their caps, gowns, and colors representing their medical schools. Brimming with pride, they march down the aisles against a backdrop of excited friends, family, and colleagues who watch them receive recognition of their ACR Fellowship. In addition to the fellows, the celebration honors the 2017 ACR Distinguished Achievement Award Recipient, Honorary Fellows, and ACR Gold Medalists. B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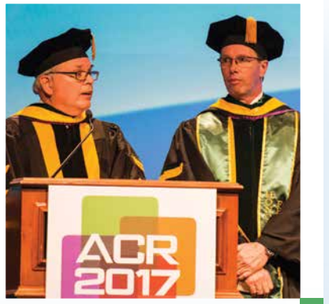

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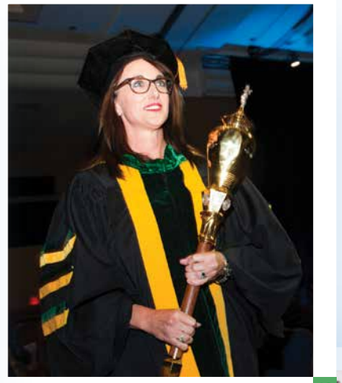
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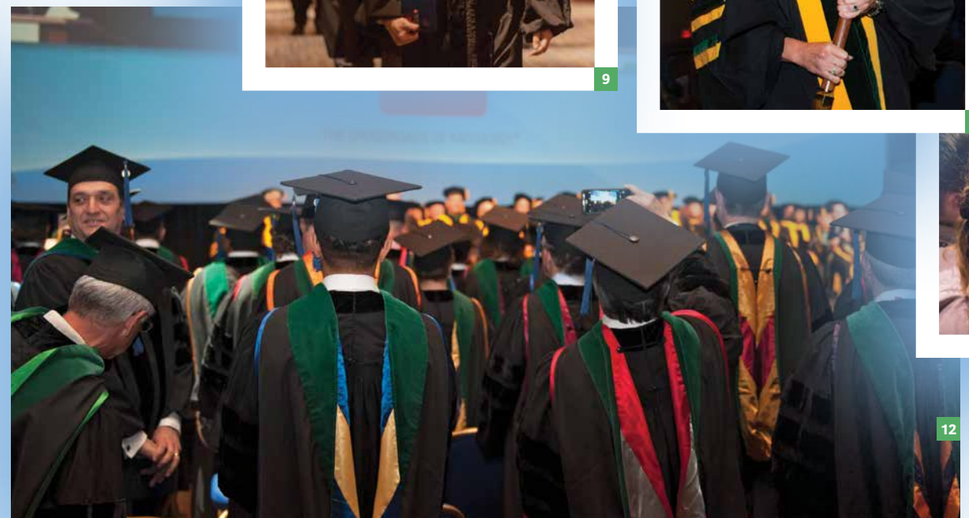
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1. Bruce J. Hillman, MD, FACR, speaks after receiving the ACR Gold Medal.
2. Jacob Sosna, MD, receives ACR Honorary Fellowship.
3. Ben Slotman, MD, PhD, is presented with ACR Honorary Fellowship.
4. John A. Patti, MD, FACR, is honored with the ACR Gold Medal.
5. Jeffrey C. Weinreb, MD, FACR, is awarded the ACR Gold Medal.
6. Pamela A. Wilcox, RN, MBA, receives the ACR Distinguished Achievement Award.
7. Lincoln L. Berland, MD, FACR, Jeffrey C. Weinreb, MD, FACR, and Seth A. Rosenthal, MD, FACR, prepare for Convocation.
8. New fellows' names are called during Convocation.
9. Nolan J. Kagetsu, MD, FACR, prepares to receive his ACR Fellowship.
10. Cheri L. Canon, MD, FACR, carries the ceremonial mace.
11. Guests attend Convocation to celebrate with new ACR Fellows.
12. Fellows excitedly wait to be recognized during the ACR 2017 Convocation.

Dana H. Smetherman, MD, FACR, presents during the Economics Forum.

Economics Forum: The Viability of Radiology

New technology and reimbursement dominate this year's discussion.

The payment challenges facing radiologists, from the value of fee for service to the complexities of future payment models, was examined at the two-part 2017 Economics Forum, moderated by Ezequiel Silva, MD, FACR, chair of the Commission on Economics. The session also highlighted the ACR's efforts to ensure the economic viability of the field of radiology when considering the future of the American Health Care Act (AHCA), Medicaid, and accountable care organizations (ACOs).

Emphasizing that better and more widespread breast imaging has had an enormous positive impact on women's mortality rates, Dana H. Smetherman, MD, FACR, vice chair of the department of radiology and head of breast imaging at Ochsner Health System, expressed concern over slow adoption of coverage for digital breast tomosynthesis. "We must rise up and defend access to mammography," she said, referring to obstacles to tomosynthesis reimbursement related to technical component codes.

Kurt A. Schoppe, MD, chair of the ACR Reimbursement and Practice Expense Committee, said fee for service is fundamental to bundling payments and to alternative payment models — because the business of medicine is changing and the science of medicine is evolving. "Our reputation as a specialty will affect reimbursement," he said, "and your values are much bigger than your RVUs."

The first half of the forum ended with Gregory N. Nicola, MD, chair of the ACR Medicare Access and CHIP Reauthorization Act (MACRA) Committee, discussing implications for radiologists under future payment models.

The Economics Forum's second half started with the presentation of the Thorwarth Award for excellence in economics and health policy to James V. Rawson, MD, FACR, for his extensive service to the College. "The ACR has been just an amazing journey," said Rawson, chair of the Commission on Patient- and Family-Centered Care.

Keith J. Dreyer, DO, PhD, FACR, chair of the Commission on Informatics, then delivered the forum's keynote address about artificial intelligence (AI). Dreyer explained that radiologists should harness AI's power to improve patient care, calling it "a very bright addition" to radiology.

Mark Bernardy, MD, FACR, vice chair of the Commission on Economics, shifted the conversation to discuss the Affordable Care Act (ACA) and the AHCA currently in Congress (as of this printing). The U.S. House of Representatives recently approved the AHCA, which eliminated financial penalties associated with the individual coverage mandate. Bernardy said the Senate is expected to change the AHCA significantly, and he called on radiologists to get involved. "This is your opportunity to change the system [and] improve health care," he said.

Closing the forum, Sanjay K. Shetty, MD, MBA, discussed the proliferation of ACOs, under which providers contract to share risk. Shetty noted that many radiologists may already be in an ACO and implored them to learn the status of their contracts. "Radiologists have to be at that table to make sure that our value is recognized," he said. B

ACR 2017 Election Results

The following individuals were elected at ACR 2017 to represent the College.

President
Alan D. Kaye, MD, FACR

Vice President
Lawrence A. Liebscher, MD, FACR

Board of Chancellors
Lincoln L. Berland, MD, FACR
Claire E. Bender, MD, FACR
Keith J. Dreyer, DO, PhD, FACR
Don C. Yoo, MD
Beverly G. Coleman, MD, FACR
William T. Herrington, MD, FACR

Council Speaker
Timothy L. Swan, MD, FACR

Council Vice Speaker
Richard Duszak Jr., MD, FACR

Council Steering Committee
Amy L. Kotsenas, MD
Mark D. Alson, MD, FACR
Eric B. Friedberg, MD, FACR
Darlene F. Metter, MD, FACR

College Nominating Committee
Join Y. Luh, MD
Sonia Gupta, MD
Julie Bykowski, MD

Connecting Hearts and Minds

Teamwork session offers tips for effective leadership.

Effective leaders connect their heads (how they think) and their hearts (how they feel) with their hands (what they do). That's the message Bob Cancalosi, director of GE global customer leadership education and member of the ACR Commission on Leadership and Practice Development, delivered during an educational session titled "Teamwork: The Critical Enabler of Transformational Change."

Cancalosi cited research from the Corporate Leadership Council showing that "more than 70 percent of an employee's commitment is based upon their manager's actions" and that "engaged employees can yield up to 57 percent more discretionary effort." It's also well documented that the primary reason people leave their companies is because of their managers.

"Do you want to be influencing the 70 and the 57, or do you want to be the reason that somebody is… trying to get the heck out of your organization?" Cancalosi asked.

He offered three steps managers can take to have a positive impact on their teams:

1. Repeatedly remind employees how their work fits into your organization's broader purpose.
2. Cultivate trust by recognizing excellence, sharing information broadly and in context, and fostering an environment where everyone speaks freely.
3. Pay close attention to your words and your body language when engaging employees. B

Why Take the R-Scan™ Pledge?

ACR 2017 attendees got a chance to learn more about the Radiology Support, Communication, and Alignment Network (R-SCAN), a collaborative project that brings radiologists and referring clinicians together to improve imaging utilization. Take the pledge today to get started on the following:

- Optimize imaging care, reduce unnecessary exams, and lower the cost of care
- Access a free customized version of the ACR Select® clinical decision support tool
- Work with ordering physicians to prepare for use of clinical decision support
- Receive free educational resources
- Prepare for the future of value-based care
- Meet MOC Part 4 requirements and earn free CME for participation

To learn more and take the pledge, visit the new R-SCAN website at rscan.org.

Diversity in the Spotlight

Sunday during ACR 2017 kicked off with the Diversity Forum, sponsored by the Commission for Women and Diversity. The commission was formed for a host of reasons, including to demonstrate diversity's importance and its positive effect on a practice's bottom line. The business case for diversity is well-known and well-researched:

- Gender-diverse companies are 15 percent more likely to financially outperform gender-homogeneous competitors.
- Ethnically varied organizations are 35 percent more likely to beat out less diverse companies.[1]

However, when it comes to diversity, imaging lags behind other specialties. Radiology is made up of just 21.4 percent women and less than 10 percent underrepresented minorities.[2]

To increase diversity in radiology, the commission's focus has turned to mentorship for medical students who may be interested in radiology. Forum attendees brainstormed ways to make the program most effective, while acknowledging some of the challenges standing in students' way. Attendees pointed out that a guiding hand could make all the difference to a student who could one day be critical to the radiology world.

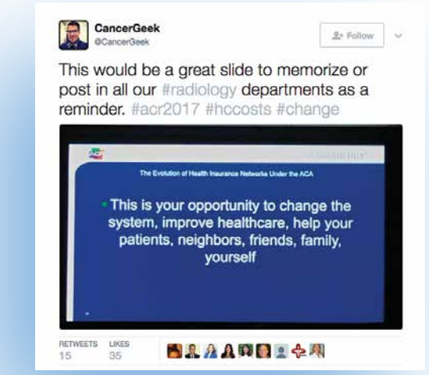
ENDNOTES

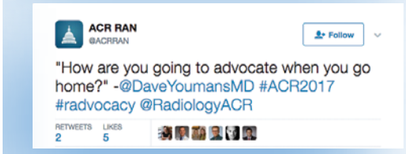
1. Hunt V, Layton D, Prince S. McKinsey & Co. Why diversity matters. mckinsey.com/business-functions/organization/our-insights/why-diversity-matters. Published Jan. 2015. Accessed May 31, 2017.

2. Bluth EI, Bansal S. The 2016 ACR Commission on Human Resources Workforce Survey. *JACR* 2016;13(10):1227–1232.

Tweeting the Meeting

Members near and far, along with patients and patient advocates, participated in the tweet chat, voiced their opinions, and shared their insights and memorable moments on Twitter. Here, we've gathered some of our favorite tweets from the meeting. B





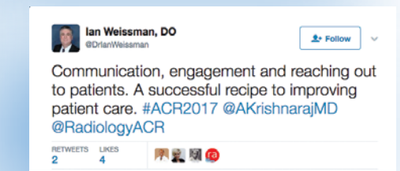
By the Numbers

Here are the stats on social media at #ACR2017

75,531,000
Impressions (the number of people who potentially see or interact with #ACR2017 tweets)

15,560
Tweets

1,933
Participants



When Opportunity Knocks

An insider's look at health system leadership and how to get there from here

Three radiologists embark on a journey that takes them from internship to leadership. No, that's not the opening line of a joke. These are the stories of what it takes to become a health system leader, along with practical advice about how to make it happen from three trailblazers who have risen to the top.

Leap and the Net Will Appear

The path to leadership for Sanjay K. Shetty, MD, MBA, president of Steward Medical Group, has been filled with unexpected twists and turns. "At the end of my fellowship, I decided to get an MBA, and people thought I was nuts," says Shetty. "I was in a full-time academic radiology job, and flying from Boston to Philadelphia every other weekend to earn my MBA."

Afterward, Shetty spent several years on a pure radiology track. Then he decided to go into consulting. Again, people told him he was crazy. But Shetty replied, "If I don't do this, I'll always regret it." A few years later, he was approached about joining an embattled health-care company as chair of radiology. The leaders there had big dreams that appealed to Shetty.

"I could see that each had taken a risk, leaving a solid practice to do something a little bit crazy and entrepreneurial," Shetty says. "And I thought, 'Why shouldn't I try it too?' As an academic radiologist, there will still be a job for me. But I will never have another opportunity to become a department chair at the age of 36. Now, a local health system that couldn't sell itself for a dollar is growing into the largest privately owned hospital operator in the U.S., with over $8 billion in revenue. If I hadn't taken that first leap, I would never have been in this leadership position."

Get Out of Your Comfort Zone

Being willing to take a risk is also what launched Sarah Reimer, MD, medical director of population health and risk at Aurora Health Care, on her journey to leadership. "My undergraduate degree is in business. Then I went into medicine and started practicing," she says. When the multi-specialty group she was in was acquired by Aurora, there was an opportunity to participate in the PACS selection committee. Working well across historic institutional divides got her noticed.

A year or two later, there was a need for a radiologist to serve on a system-level committee to optimize the distribution of imaging equipment. One of the system senior leaders tapped her for the job, which was the first time she really used her business degree. She says, "Getting internal experience in a project outside my usual responsibilities was pivotal. It exposed me to senior leaders, broadened my view of the view of the organization and my network, and forced me to develop new skills. Working across business lines also showed me how to exert influence without having formal authority."

Reimer emphasizes that the route to leadership involves the willingness to take stretch assignments and to look for opportunities to stretch other people. "Believe that you've got something to offer and take your shot. Then look for the potential in others and encourage them to do the same," she urges.

Just Say Yes

According to Michael P. McDermott, MD, MBA, president and CEO of Mary Washington Healthcare, one of the most important steps on the path to leadership is to say yes when you're asked to do things.

"Early in my career, the hospital was looking for physicians to be on a credentials committee, and they asked me," he remembers. "I didn't know what that was, and we had to meet every month at seven in the morning. You don't get anything for it, but you learn a lot about what goes on in the hospital. So, you say yes. You show up to those meetings, you act with integrity, and people start to know you. The next thing you know, they're asking you to do more things at the hospital. They're asking you to chair the radiology department and then lead a joint venture with the health system for the imaging centers."

In addition to accomplishing all those things, McDermott was also invited to serve on the board of trustees for the health system, where he gained perspective from the governing side of health care. He also had an interest in the business side of medicine and was involved with his group's finance committee. Then when the health system's long-time CEO announced his retirement, McDermott threw his hat in the ring and landed the job after a national search.

Continued on next page


Sarah E. Reimer, MD


Michael P. McDermott, MD, MBA


Sanjay K. Shetty, MD, MBA

Continued from previous page

"There are opportunities everywhere, all the time," he says. "All you have to do is say yes to a few. If no one asks, go poke around a little bit. There are plenty of places where you can get involved. There are a thousand committees. There are work groups meeting in the hospital and in departments every day. If you show up and help solve a problem, people will start knocking on your door to ask you to do more. That builds your credibility in the community over time."

Separate the Best From the Rest

A new 10-year study by the CEO Genome Project, recently published in *Harvard Business Review*[1], identifies four management traits that set successful CEOs apart:

- Adapting rapidly to change
- Engaging stakeholders and gaining buy-in
- Being reliable and predictable
- Making fast decisions with conviction

That's sound advice for anyone looking to distinguish themselves as leaders in medicine. But what actionable steps should radiologists take to get started on their own journeys toward leadership? Here's what our three experts say it takes to get to the top.

Bring Solutions

Shetty advises radiologists to become change agents. "To build your resume, you have to look at what's coming and think about ways you can help solve emerging problems," he says. "If you identify a problem, think about it, talk to people, come up with a solution, and bring it to your key leaders as a fully formed idea, rather than just complaining about it. Then, when you bump into the president, you're prepared to say, 'Here's an issue I'm running into, and I have some thoughts on it. Do you have 15 minutes to talk about it?' It's as simple as turning hallway conversations into meetings where you're sharing solutions and not just serving as complainer-in-chief."

But he adds that you have to be sensitive to politics and work through the right pathways, because you can get burned by going straight to the top. "Make sure you've built a network of supporters. Go to them first and say, 'I've got an idea; can you give me some advice? What's the best way for us to do this?' Then loop them in going forward, and they can take partial credit in your success. That's how you create mentors and advocates."

Carpe Diem

McDermott urges radiologists to take advantage of the leadership opportunities that are already there. "Volunteer for committees or take ownership of an initiative and form a committee. Ask others to get involved," he advises.

"Be an influencer, even if you don't have the power to act," says McDermott. "Knock on a few doors. Start with the director or chair of your radiology department, and say, 'Hey I want to be more involved. When the next issue comes up, let me help out.' That's a perfect place to start."

Be willing to take on extra responsibilities, he adds, and make it clear to the leader of your department that you can put in the above-and-beyond time without taking anything away from your core job. "All it takes is doing that a few times, and suddenly when they need a leader, they're going to think of you as a natural candidate," he says.

Create Value

Reimer recalls that one of her early mentors gave her some of the best advice of her career. "He told me, 'If you want a seat at the leadership table, bring something of value to the organization,'" she says. "So, I went to the ACR website looking for ideas, hit on clinical decision support, and started championing it all the way to the top of the organization. Then I worked on getting buy-in through the rest of the organization. Next I found a randomized control trial at MIT and asked if we could partner on it. And we made it happen."

Sometimes you need a little bit of courage, Reimer says. "I really didn't know much about the trial process when I started, but it's good to stretch," she says. "It's good to get out of your comfort zone." She adds that it's equally important to build partnerships across the enterprise. "To deliver on the promise of CDS and the MIT trial, I had to collaborate with legal, finance, and IT. I had to leverage the strengths of the radiology crew and forge stronger relationships between subspecialty radiology and the relevant clinical specialties. It's really important to engage other people — because individual contribution is not really leadership. Identify people who have gifts to do the work. That's what my mentor did with me."

Reimer adds, "To find ways to add value, start with the ACR. You don't have to reinvent the wheel. We're all facing the same issues. Go to the annual meeting and learn what people are talking about and what projects they're tackling to bring value. That can be really inspiring."

Get Smart

All three leaders agree that it's imperative to learn the skills that will propel your career forward. "Health care is a business, and it requires solid knowledge about managing people, operations, and finances," says Shetty.

"You need to get smart on these topics, whether it's through business training (like an MBA), leadership training (like the Radiology Leadership Institute®), or any number of other ways to learn," he adds. "It's important to apply the same rigor to learning about leadership as you did when you were a radiology resident learning about clinical concepts. Simply put, if you can't speak that language and you can't drive business people to be better at what they do, you will never be their leader."

McDermott agrees that education is the baseline for advancement: "Get broad exposure to thought leaders and leadership skills, because they are skills. These approaches are not always natural; there's a science of persuasion and leadership. I'm big believer in leadership programs. They give you the perspective and the tools you need to move forward." B

By Linda Sowers, freelance writer for ACR Press

ENDNOTE

1. Botelho EL, Powell KR, Kincaid S, Wang D. What sets successful CEOs apart. *Harvard Business Review*. May-June 2017. Available at hbr.org/2017/05/what-sets-successful-ceos-apart. Accessed June 1, 2017.

JOB LISTINGS

CLASSIFIED ADS These job listings are paid advertisements. Publication of a job listing does not constitute a recommendation by the ACR. The ACR and the ACR Career Center assume no responsibility for accuracy of information or liability for any personnel decisions and selections made by the employer. These job listings previously appeared on the ACR Career Center website. Only jobs posted on the website are eligible to appear in the *ACR Bulletin*. Advertising instructions, rates, and complete policies are available at http://jobs.acr.org or e-mail careercenter@acr.org.

North Carolina – Blue Ridge HealthCare Radiology (Morganton, N.C.) is seeking a board-certified radiologist to join an established, employed, group of eight working at Carolinas HealthCare System Blue Ridge. The group covers multiple locations in and around Morganton.
Contact: To apply or for more information, please email resumes or contact Autumn Fincher at afincher@blueridgehealth.org or (828)580-5693.

Massachusetts – Cambridge Health Alliance is seeking a full-time BE/BC radiologist to join a department of 12. Seeking a general radiologist with MRI, CT, ultrasound, 3D mammography, DR, bone densitometry, nuclear medicine, and fluoroscopy. Integrated PACS, Epic, Meditech, Nuance. No PM call. Position has Harvard Medical School teaching opportunity. CHA is an EEO.
Contact: To apply, please email resumes to lanastasia@challiance.org or contact (617)665-3555. More information at challiance.org.

California – RadNet Management, Inc. has general radiologist opportunities available at our well-established and rapidly expanding multi-modality outpatient practices in Hanford, Bakersfield, Victorville, Riverside County, and San Gabriel Valley/San Fernando Valley. You will interpret MRI, CT, plain films, ultrasound, and fluoroscopy cases. In addition, you'll perform light procedures and arthrograms.
Contact: To apply please email resumes to barbara.deboi@radnet.com.

Missouri – Mallinckrodt Institute of Radiology at Washington University in St. Louis is seeking an abdominal radiologist. We provide a range of diagnostic imaging procedures, including CT, MRI, ultrasound, fluoroscopy, and image-guided biopsies. We offer a clinical and academic environment that maintains a tradition of excellence.
Contact: Interested candidates apply to facultyopportunities.wustl.edu.

Massachusetts – Cambridge Health Alliance is seeking an interventional radiologist. Epic/Nuance 360. No night call.
Contact: To apply, please email resumes to lanastasia@challiance.org.

CONTINUED

Forecasting the Legal Implications of AI

Continued from page 4

just look to the transformation of Amazon shipping warehouses in the last decade. The impact of AI on income and staffing levels of radiology health-care providers in the near term, however, is less clear.

This column is intended to provide an initial, non-exhaustive framework by which to start considering the legal, regulatory, and policy implications of radiology advancements in AI, based in part off of the foundational work of the "One Hundred Year Study on Artificial Intelligence" at Stanford University[1]. We expect iterative improvements and expansion of this framework as experience and advancement dictates.

The impact of AI on radiology within the next couple of years — or even the next decade — is uncertain at best. But one thing is clear: Advances in AI are thrusting us into a brave new world, whether we like it or not. Our field could choose not to act, sitting passively and letting the uncertainty of the future loom uncomfortably over our profession like a final verdict yet to be announced. But, thankfully, inaction is not the favored posture of the College. Modeled after the College's proactive response to recent payment reforms (which enabled us to help shape CMS decisions in ways favorable to our membership and patients), we are similarly committed to being proactive with respect to AI.

To that end, the ACR recently launched the ACR Data Science Institute™ (DSI), which will put radiologists at the forefront of developing and enhancing tools to effectively guide the introduction of AI in clinical imaging practice. The DSI will build on our decades of expertise in modality accreditation, appropriateness criteria, and practice parameters to develop standards and a validation process for AI applications in medical imaging.

ACR DSI volunteers and staff are moving quickly to collaborate with industry, regulators, and health-care stakeholders to improve patient care in the following ways:

- Defining appropriate AI use cases for medical imaging
- Setting standards for AI interoperability
- Evaluating the diagnostic performance of AI algorithms
- Enhancing machine-learning tools for effective application in clinical practice
- Addressing regulatory, legal, and ethical issues that accompany AI in medical imaging

"Patients will benefit most from artificial intelligence if radiologists serve a leading role in guiding the technologies that best enhance medical imaging diagnosis and treatment," said James A. Brink, MD, FACR, chair of the ACR BOC. Advised by the AI Advisory Group, the ACR DSI promises to do just that. B

ENDNOTE

1. Stone P, et al. Stanford University. One Hundred Year Study on Artificial Intelligence: Report of the 2015-2016 Study Panel. Sept. 2016. Available at ai100.stanford.edu/2016-report. Accessed May 11, 2017.

Agnieszka Solberg, MD, poses with staff at UC Irvine Health.

How has social media influenced you as a radiologist?

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Given that there are relatively few women in radiology and particularly interventional radiology, social media platforms allow me to connect with other women in our field more easily than in my day-to-day practice. Despite being 13 years out of medical school, impostor syndrome is still very real for me. I find it much easier to ask questions of other women, for example, in a Facebook group of only female radiologists. A recent survey in the group reveals that many other women feel the same way and prefer to share cases, discuss diagnoses, and inquire about professional advice in a relatively small group of just women.

The women who participate in the group often feel a sense of community and togetherness that transcends borders as members include radiologists from all over the world. The group members are non-judgmental and encourage each other in professional and personal matters. Members find friends and, more importantly, mentors. Experienced radiologists help guide women new to the field with career advice, job searches, and fellowship advice. Trainees get support as they go through issues encountered in their residency programs. In my fellowship program, I am fortunate to have three strong mentors, two of them female; however, not everyone has the same experience.

Now that I am finishing my fellowship and entering a non-academic position in a relatively remote location, I will be the only woman in my department. Although I am confident that my partners will be awesome mentors, I feel a sense of relief that I have this community of women behind me during the transition. B

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- Aug. 14–Sept. 1
- Sept. 5–Sept. 22
- Sept. 25–Oct. 13
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