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## RSNA Press Release

### RSNA Announces Honored Lectures and Annual Orations

Released: November 30, 2014

CHICAGO, Nov. 30, 2014 — The Radiological Society of North America (RSNA) annually invites eminent researchers and leaders to deliver honored lectures during the RSNA Scientific Assembly and Annual Meeting. RSNA 2014 will feature honored lectures by these esteemed leaders: [Francis S. Collins, M.D., Ph.D.](#), [Jonathan M. Rubin, M.D., Ph.D.](#), [David C. Levin, M.D.](#), [Lawrence B. Marks, M.D.](#), [Robert J. Gillies, Ph.D.](#), and [Hedvig Hricak, M.D., Ph.D., Dr. h.c.](#)

#### Special Lecture: Sunday, Nov. 30

In this Special Lecture, Francis S. Collins, M.D., Ph.D., the Director of the National Institutes of Health (NIH) will help celebrate the RSNA's centennial meeting by examining the exceptional opportunities that scientific and technological breakthroughs offer for biomedical research. With particular focus on NIH-supported imaging research, the talk will examine recent advances in fundamental knowledge about biology and highlight the ways in which that knowledge is serving to improve human health. Topics may include the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, the Accelerating Medicines Partnership (AMP), and affordable technologies to extend imaging insights to low-resource settings. Dr. Collins will conclude with a discussion of future challenges, such as training the next generation of researchers; supporting the development of innovative research, programs and partnerships; and encouraging broader appreciation and support for the biomedical research enterprise.

As NIH director, Dr. Collins oversees the work of the largest supporter of biomedical research in the world. He is a physician-geneticist noted for his landmark discoveries of disease genes and his leadership of the international Human Genome Project, which culminated in April 2003 with the completion of a finished sequence of the human DNA instruction book. He served as director of the National Human Genome Research Institute at the NIH from 1993 to 2008.

Before coming to the NIH, Dr. Collins was a Howard Hughes Medical Institute investigator at the University of Michigan. He is an elected member of the Institute of Medicine and the National Academy of Sciences, was awarded the Presidential Medal of Freedom in November 2007 and received the National Medal of Science in 2009.

## **New Horizons Lecture: Monday, Dec. 1**

Quantitative methods nearly unique to ultrasound are giving the modality a new life, says Jonathan M. Rubin, M.D., Ph.D. Dr. Rubin says rapidly expanding applications of elasticity imaging are poised to have a major impact—for example, shear wave speed imaging will likely replace liver biopsies for fibrosis/cirrhosis assessment. Volume flow estimation, meanwhile, has the potential to significantly affect transplant evaluations, fetal evaluation through umbilical cord blood flow measurements, carotid artery flow and cerebral perfusion. Finally, says Dr. Rubin, there are myriad new applications for contrast agents, using the bubbles that comprise the agents not only for contrast but also delivery.

In a research career spanning more than 30 years, Dr. Rubin has exploited the basic characteristics of ultrasound and other modalities to offer real-time imaging in neurosurgery, assess thrombus age in deep vein thrombosis, discriminate between edema and fibrosis in Crohn's disease and improve gating methods for registering cardiac CT scans. In the area of blood flow detection and measurement, Dr. Rubin's original paper on Power Doppler ultrasound has been referenced more than 800 times, and he was among the first to describe volume flow.

Dr. Rubin serves as director of the Division of Ultrasound in the Department of Radiology at the University of Michigan Hospitals in Ann Arbor. He has served as principal investigator on more than 30 funded projects and holds 10 patents for ultrasound technology. Dr. Rubin has received the Joseph H. Holmes Clinical Pioneer Award of the American Institute of Ultrasound in Medicine and the Lawrence Mack Lifetime Achievement Award of the Society of Radiologists in Ultrasound.

## **Annual Oration in Diagnostic Radiology: Tuesday, Dec. 2**

Radiology faces many threats, ranging from commoditization, declining reimbursements, and termination of groups by hospitals to the perception that much imaging is unnecessary. Countering the threats, says David C. Levin, M.D., means moving from the current volume-based practice model to a value-oriented one. Dr. Levin calls on radiologists to become true consulting physicians who actively assess the appropriateness of imaging requests, more closely supervise performance of the studies and do better at communicating results to patients. Focusing more on quality is another way to provide value, he adds, as is developing closer ties to primary care physicians. With these changes, says Dr. Levin, within five years radiology could be considered a high-value specialty more helpful to patients and referring physicians than at present.

Dr. Levin is professor and chairman emeritus of the Department of Radiology at Jefferson Medical College and Thomas Jefferson University Hospital in Philadelphia. He is regarded as an expert in health policy and practice, with recent research focusing on the utilization and costs of imaging procedures, the effects of self-referral and practice patterns in imaging. Dr. Levin established the Jefferson Center for Research on Utilization of Imaging Services.

A prolific author, researcher and lecturer, Dr. Levin was awarded the RSNA Gold Medal in 2009 and also has received the gold medals of the American Roentgen Ray Society, American College of Radiology, Association of University Radiologists and Society of Interventional Radiology. In 2008, an endowed chair was established in his honor at Thomas

### **Annual Oration in Radiation Oncology: Wednesday, Dec. 3**

While medical imaging has markedly improved radiation therapy, limitations remain, and excessive over-reliance on imaging can be detrimental, according to Lawrence B. Marks, M.D.

For example, clinicians must understand the likely patterns of cancer spread, beyond the radiologically defined lesion, when defining targets for radiation therapy. Differences in the physiologic state during diagnostic imaging, versus treatment, can influence the validity of medical images for radiation planning. "Good" diagnostic images may require breath hold, while therapy is usually not delivered in this state. Dose volume histograms, a cornerstone of modern radiation oncology, typically ignore inter- and intra-fraction motion and discard all spatial information. Meanwhile, oncologist-radiologist communication is often ambiguous, potentially increasing risks for misinterpretation and errors. Electronic health record-based standardization of communication should be embraced. Dr. Marks urges all to acknowledge and minimize the error bars associated with the application of medical images to radiation therapy.

Dr. Marks is the Dr. Sidney K. Simon Distinguished Professor of Oncology Research in the Department of Radiation Oncology at the University of North Carolina at Chapel Hill School of Medicine. He is a recognized expert in radiation therapy-induced normal tissue injury, has conducted several imaging-based prospective clinical trials to better understand radiation-induced lung and heart injury, and was the lead physician for the recent QUANTEC (Quantitative Analyses of Normal Tissue Effects in the Clinic) initiative sponsored by the American Society for Radiation Oncology and the American Association of Physicists in Medicine.

Dr. Marks is also interested in human-factors engineering and has studied the frequency and causes of human errors in the radiation oncology clinic. This work has led to the implementation of systems aimed to reduce errors and enhance patient safety. He has published and lectured about this sensitive issue and serves on several national committees aimed to improve patient safety.

### **RSNA/AAPM Symposium: Radiomics: From Clinical Images to Omics - Thursday, Dec. 4**

In this symposium presented in conjunction with the American Association of Physicists in Medicine, Robert J. Gillies, Ph.D., and Hedvig Hricak, M.D., Ph.D., Dr. h.c., will describe the motivation underlying medical imaging analyses of tumor heterogeneity and response to therapy, and the role of medical imaging omics in oncology as a biomarker and the potential benefits leading to improved outcomes. They will also address the benefits and challenges of advanced and high-throughput image analysis from large databases at multiple centers.

Dr. Gillies is chair of the Department of Cancer Imaging and Metabolism, director of the Center of Excellence in Cancer Imaging and Technology, vice chair for research in the

Department of Radiology and scientific director of the Small Animal Imaging Lab (SAIL) and Image Response Assessment Team (IRAT) shared services at the Moffitt Cancer Center in Tampa, Fla. Dr. Gillies' research emphasizes the use of imaging to inform evolutionary models of carcinogenesis and response to therapy. He currently serves the National Cancer Institute as a member of the Experimental Therapeutics (NExT) special emphasis review panel and the Network Consulting Team for the Early Detection Research Network (EDRN). Dr. Gillies also serves the U.S. Department of Defense as a member of the integration panel for the Prostate Cancer Research Program.

Dr. Hricak is chair of the Department of Radiology at Memorial Sloan-Kettering Cancer Center, a professor of radiology at Cornell University Medical College and an attending radiologist at Memorial Hospital in New York. She is a genitourinary imaging authority who helped develop the use of MRI and CT for gynecological cancers. Dr. Hricak has served as the principal investigator of a National Institutes of Health (NIH)-funded study on the use of MRI and MR spectroscopy for risk assessment in prostate cancer patients. She also has co-directed an NIH-funded program that trains young scientists and physicians in oncologic molecular imaging. Dr. Hricak served as RSNA president in 2010.

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Note: Copies of RSNA 2014 news releases and electronic images will be available online at [RSNA.org/press14](http://RSNA.org/press14) beginning Monday, Dec. 1.

RSNA is an association of more than 54,000 radiologists, radiation oncologists, medical physicists and related scientists, promoting excellence in patient care and health care delivery through education, research and technologic innovation. The Society is based in Oak Brook, Ill. ([RSNA.org](http://RSNA.org))