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NEWS

RSNA Press Release

RSNA Announces Honored Lectures and Annual Oration Topics

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CHICAGO, Nov. 30, 2009 — The Radiological Society of North America (RSNA) annually invites three eminent researchers to deliver honored lectures during the RSNA Scientific Assembly and Annual Meeting. RSNA 2009 will feature honored lectures by these esteemed medical leaders: Graeme M. Bydder, M.B.Ch.B., of San Diego, Calif.; Daniel C. Sullivan, M.D., of Durham, N.C.; and Bruce G. Haffty, M.D., of New Brunswick, N.J.

Eugene P. Pendergrass New Horizons Lecture

While most clinical MR images are interpreted in qualitative terms using the concept of weighting, MR physics is mainly understood in quantitative terms, according to the presenter of the RSNA 2009 New Horizons Lecture.

"Nowhere is this dichotomy more apparent than in the concept of weighting," said Graeme M. Bydder, M.B.Ch.B., who will deliver "Qualitative and Quantitative Ways of Understanding Clinical MR Images" on Monday, Nov. 30. "Weighting is the most commonly used technical term in clinical MR and relates image contrast to differences in tissue properties and hence to pathology, but the term is used as little more than a label in the MR physics literature. The lack of a quantitative definition is a barrier to the understanding and implementation of quantitative studies on signal and contrast," he said.

By defining weighting as a partial derivative, Dr. Bydder continued, it is possible to replace the qualitative definition with a concept that resolves many of the inconsistencies associated with qualitative use and provides new insights into the behavior of pulse sequences.

A pioneer and an expert on MR techniques, clinical applications and image interpretation,

Dr. Bydder currently serves as a professor of radiology at the University of California, San Diego (UCSD). His 40 years in medicine have found him on the leading edge of many of the specialty's new technologies, including initial clinical research into the use of the cryomagnet-based, whole-body MR system.

Dr. Bydder came to UCSD in 2003 after more than 20 years with the Department of Diagnostic Radiology in the Royal Postgraduate Medical School at Hammersmith Hospital at the University of London. He has been recognized with such honors as the gold medals of the International Society for Magnetic Resonance in Medicine and the U.K. Royal College of Radiologists. He is also an honorary member of the American and British societies of neuroradiology.

Annual Oration in Diagnostic Radiology

Diagnostic information must be expressed quantitatively in order to lead to predictable and reproducible outcomes, according to the presenter of the RSNA 2009 Annual Oration in Diagnostic Radiology.

"We must focus on methods to extract *quantitative* data about whatever anatomical or biochemical properties our imaging systems signify are present," said Daniel C. Sullivan, M.D., who will deliver "Radiology in the Era of Molecular Medicine: Can We Measure Up?" on Tuesday, Dec. 1. "As imaging becomes more central to clinical decision making, any observed change on a clinical imaging study should reflect biology and not random instrumentation differences or subjective differences due to interpreting physician variability," he said.

Although there are factors limiting incorporation of quantitative results into radiologic interpretation, imaging seems ideally suited to flourish as a quantitative science, Dr. Sullivan said.

As RSNA's Science Advisor, Dr. Sullivan coordinates integration of a wide range of national and international activities related to evaluating and validating imaging methods as biomarkers in clinical research. Dr. Sullivan also heads RSNA's Quantitative Imaging Biomarkers Alliance, dedicated to transforming radiology from a qualitative to a more quantitative science.

One of the country's leading authorities on molecular imaging, Dr. Sullivan is currently a professor of radiology at Duke University Medical Center, coordinator of Imaging Facilities for the Duke Comprehensive Care Center and director of the Imaging Core of the Duke Clinical and Translational Science Aware Program. His work includes improving and increasing the use of imaging as a biomarker in clinical trials and facilitating translational research involving new and established imaging methods.

Annual Oration in Radiation Oncology

The past 20 years have seen dramatic advances in our understanding of human genetics and the potential for understanding and treating malignancy. The manifestations of genetic factors—and the application of genetics to medicine—have shown particular prominence in breast cancer research, according to Bruce G. Haffty, M.D., who will deliver this year's Annual Oration in Radiation Oncology.

"While the identification in the mid-1990s of the breast cancer susceptibility genes BRCA1 and BRCA2 has had a major impact on breast cancer management, only 5 to 10 percent of breast cancers are clearly linked to deleterious mutations in these highly penetrant but relatively low frequency genes," Dr. Haffty noted.

As with most complex systems, it is likely that combinations and interactions of multiple genetic variants, interacting with environmental and other biological factors, rather than any single genetic variant, ultimately contribute to the phenotypic expression of the disease, Dr. Haffty said.

Dr. Haffty is professor and chair of the Department of Radiation Oncology at the University of Medicine and Dentistry of New Jersey's Robert Wood Johnson Medical School and New Jersey Medical School. He is also associate director of clinical sciences at the Cancer Institute of New Jersey.

Internationally recognized for his expertise in breast cancer and head and neck cancer, Dr. Haffty is currently researching the p53 binding protein 53bp1 in the local and regional management of breast cancer. He serves as co-chair of RSNA's Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow (BOOST) program, which is forging ties between radiology and radiation oncology.

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Note: Copies of RSNA 2009 news releases and electronic images will be available online at *RSNA.org/press09* beginning Monday, Nov. 30.

RSNA is an association of more than 44,000 radiologists, radiation oncologists, medical physicists and related scientists committed to excellence in patient care through education and research. The Society is based in Oak Brook, Ill. (*RSNA.org*)