

2016 Annual Report Committee on Scientific Affairs

The CSA is charged with oversight of strategic science initiatives of RSNA, including monitoring emerging trends, designing and implementing programs to highlight knowledge gaps in imaging science and technology development, and advising the RSNA Board of Directors on educational and communication programs to raise awareness of and promote strategies for advancing the science and technology of imaging. The Committee on Scientific Affairs (CSA), chaired by David Lomas, MD, held an in-person meeting at RSNA Headquarters on June 28, 2016.

CSA Workgroups

The four established workgroups provided status reports on discussions to-date.

- **High Quality Outcome Trials:** This workgroup is addressing the need for generating meaningful radiology outcome data using existing workflow rather than complex randomized controlled trials. The workgroup believes that consistent use of structured reports is a necessary first step in this process. They are working with the Radiology Informatics Committee to explore leveraging data from pilot studies to be conducted at one or two ECOG-ACRIN sites.
- **High Value Imaging:** This workgroup is working on maximizing imaging value through the use of targeted imaging examinations. A joint workshop with ISMRM on this topic is tentatively planned for the fall of 2017. The purpose of the workshop is to understand the imaging costs, explore how the value of imaging can be measured, and how to align MRI protocols to specific diagnostic pathways in order to improve value.
- **Collaborations with Neuropsychiatry/Neuroscience:** Recent work on genotyping and phenotyping in this area is leading towards a major recategorization of psychiatric disease. As a first step in providing new educational opportunities in this area, the RSNA Board of Directors approved the CSA request for a special interest session at RSNA 2016 on *Imaging Cognition: Psychosis*, with a target audience of practicing radiologists and radiology leadership. The workgroup will be recommending a follow-up series of annual neuropsychiatry talks covering topics such as addiction, dementia, depression, and traumatic brain injury.
- **Science at RSNA:** This group is identifying ways to improve scientific engagement at the RSNA Annual Meeting by attracting high quality/high impact science, improving attendance at scientific sessions, and creating a primary venue for the presentation of new scientific data. As a first step, working with the Research Development Committee, a pilot program is being introduced at RSNA 2016. The Introduction to Academic Radiology Program for Scientists (ITARSc) is an extension of the ITAR program, targeting postdoctoral fellows and young PhD researchers in the imaging sciences. Secondly, the group is working with the committee chairs for 2017 to develop a new format based on a more detailed discussion and critique of submitted research work. This would involve junior and senior authors and expert moderators.
- **Big Data:** This group is exploring how RSNA can promote better research use of the large amounts of imaging data that is collected routinely. This involves evaluating what is feasible in order to access and analyze digital imaging data on a large scale at reasonable effort and cost.

The CSA members are asked regularly to participate in a horizon-scanning exercise to identify trends and changes that could impact the culture and practice of radiology; and to help identify areas in which RSNA can best help prepare its members by developing awareness and providing education.

Quantitative Imaging Biomarker Alliance (QIBA)

Thirteen groundwork projects have been selected for funding during the second year of a two-year contract from the National Institute of Biomedical Imaging and Bioengineering (NIBIB). Funding will support QIBA and its research activities. A portion of this funding will support groundwork projects by QIBA members to help validate specific imaging metrics and improve reproducibility and standardization across vendor platforms. The number of QIBA volunteer stakeholders and committees and task forces has increased over the past year, now focusing on 12 biomarkers ranging from CT Volumetry to PET-Amyloid and Contrast-Enhanced Ultrasound. Stakeholders continue to increase in number, representing radiologists and imaging scientists, scanner and pharmaceutical companies, government agencies, clinical trialists and statisticians. International involvement continues to grow, with significant engagement from Japan, Europe and Brazil

- **Profiles**

Adoption of QIBA standardization documents, or Profiles, in whole or in part in clinical trials has already been undertaken by Roche, Merck, and ECOG-ACRIN.

- **Quantitative Imaging Data Warehouse (QIDW)**

QIDW is partially supported by NIBIB contract funds. As of October 1, 2016, the QIDW has 399 registered users and 127,700 uploaded images with associated metadata. Users include biomedical imagers, clinicians and industry research collaborators. Enhancements have been made to system functionality through migration to a more stable operating platform and cloud storage provider.

Respectfully submitted,

David J. Lomas, MD
Chair