

QIN Meeting Summary

April 10-11, 2017

Kristy Brock, AAPM Science Council Member

- Paula Jacobs provided the introduction and welcome, noted that there are 21 members to QIN, this is the 8th year, and the PAR for QIN was reissued.
- John Buatti, Univ of Iowa gave a great talk on the potential impact of proven QIN tools. He discussed groups of tools that were available to do phantom analysis, image reconstruction, segmentation, feature generation, decision support, data integration, tools to integrate genomics in the clinic, and the potential for data sharing.
- David Mankoff, head of experimental imaging for ECOG-ACRIN discussed the need for clinical testing of QIN tools and the potential for integration into clinical trials as a secondary aim.
 - Potential opportunity for AAPM, interface between QIN, NRG, QIBA
- During the panel discussion it was noted that there is a lack of validation of the tools and a lack of data for the validation. There is an ECOG/ACRIN initiative to get data on TCIA.
- New QIN grants require 10% of the budget to be set aside each year, following annual review, the money is released for collaborative projects.
- New funding expects 10 years of product after 5 years of investigation
- Additional panel discussion on unmet needs, how to provide incentives for sharing data/tools and the role of collaborations with industry (patented tools vs open source).
- Demo of tools
 - **ACTION ITEM:** We need to get QIN at AAPM meetings so that members are aware of the open source tools and data.
- Report on the results of the breast MRI metrics of Response Challenge (BMMR).
- Role of challenges:
 - Plan ahead to protect cases for challenges
 - Statistical help for analysis and summary
 - Need for quality training set very similar to test data set
 - **ACTION ITEM:** Ensure AAPM hosts challenges at the annual meeting.
- Maryellen Giger announced as the chair of ExComm for QIN
- Discussions on pipelines for quantitative imaging and bioinformatics
 - Use of container to share apps without directly sharing code
 - Sandy Napel – development of a pipeline for radiomics that allows user to upload and use their algorithms

QIN – Rad Onc Meeting

Attendees: Jim Deye, Vik, another NIH, Ed Jackson (QIBA) Yue Cao (U01 in rad onc) Ying (NRG), Dr. Shim from Emory (has NIH R01 clinical trial), Kristy Brock (AAPM Science Council rep)
Initiated by Jim Deye to use Rad Onc as a test site for QIN

Needs:

- Ongoing trials with advanced imaging tools as R01, hope to translate into an NTCN trial
- Advanced imaging requires advanced QA/QC
 - How do we make sure the tools are in place now to ensure the systems are in place
- Lack of traction of QIBA, NIST didn't know about them
- QIBA – industrializing imaging biomarkers
 - Phantoms, QA, acquisitions, application specific
 - How do we enable radiology to show that they conform to the standard?
- Analytic and Clinical validity of biomarker
- IROC positioning to perform these tasks?
- ITCR grant application of IROC with QIBA
- Dr. Shim from Emory – image based clinical trial (GBM)
 - Univ of Miami
 - Johns Hopkins
 - Emory R01 funded, image guided intervention
- Yue currently using QIBA standards to test to see if another center can join their clinical trial
- Foundation NIH, potential to get vendors to the table
 - In volumetric CT area, instead of waiting for outcomes, use pharma phase 3 data that has outcomes
 - Migrating data to imaging core lab
 - Getting the imaging data
- Funding for Rad Onc imaging trials through CTEP
- NRG DT01 Sarcoma trial
- Change in reimbursement and impact on imaging QA/QC
- 19 Profiles in QIBA
 - FDG PET
 - CT volumetry
 - DCE/DWI in release/comment process
 - SPECT for neuro out for comments
 - Liver – MR elastography, fat fraction for fibrosis
- GI003
- NRG GBM study with MR, published results
- Science Council role in establishing initiatives to get imaging vendors to conform to standards
- Targeted radionuclide therapy
 - Need to improve dosimetry
 - Need to improve quantitative imaging – acquisition and processing
- NRG Imaging Workgroup
- ITCR grant – tool development

ACTION ITEM: Can we host an NIH-NRG-QIN-QIBA working lunch at AAPM with AAPM SC?