Phantom Update (Dr Jackson)

- Data acquisition from the IRAT/QIBA phantom (version 1) continues
- Second round of data from U Chicago to be sent to Dr Ashton for preliminary analysis and then sent to Dr Jackson for final analysis and incorporation with the results from MDACC and U Penn
- U Chicago returned phantom to MDACC with damage caused by shipping; after repair, to be shipped to UC Davis (Dr Buonocore) for completion of all original data acquisition
- Duke in possession of second MRI phantom; awaiting modified protocol from U Chicago

QIBA Phantom Prototype (version 3) Update

- Overall reduction in size compared to Phantom Prototype (version 2)
  - Outer diameter ring reduced from 42 to 36 cm
  - Inner diameter ring reduced from 36 to 28.5 cm
- Data acquisition done with smaller phantom and compared to larger Phantom Prototype 2 data
- IR data agreed well
- “Tissue R1” mean data agreed well; “VIF R1” mean data diverged from IR-based data and theoretical values for the higher R1 values
- VIF results were computed without signal intensity corrections
- Ratio map correction validation needs to be implemented
- Dr Buonocore to scan both QIBA DCE-MRI phantoms, version 1 (original) and version 3 (smaller prototype) at UC Davis
- Updated QIBA phantom study protocol needed
- Dr Jackson to ship Prototype v3 phantom to U Penn for testing
- Philips acquisitions still needed at either U Chicago or MGH; Dr Guimaraes offered GE and Siemens acquisition at MGH; follow-up with Dr Sorensen

ISMRM (NIST)/QIBA Phantom Comparisons

- Goals for both phantoms vary so direct comparisons between the two may not be possible
- ISMRM phantom designed for system evaluations; phantom component traceability to NIST standards and costly
- QIBA Phantom to be robust and cost-effective for multi-site distribution; more practical for ease-of-use
  - Possible use by ACRIN for in site qualification processes
  - Centers for Quantitative Imaging Excellence (CQIE) sites may utilize
- Dr Jackson to follow-up with The Phantom Laboratory (Joshua Levy) to discuss fabrication details and projected costs for new design
- Commercially-available, easily-manufactured phantom needed
- New phantom (v3) to help finalization of proven qualification process

Profile Activities Update

- Cost to vendors must be considered if QIBA decides to follow an ACRIN-like qualification process
- QIBA meetings and committee calls considered by some as a “notion of a future state” where vendors want QIBA compliance; a means by which the field moves forward by customers receiving improved data reproducibility
- Stakeholder business case/value propositions needed
  - Manufacturers might consider development of separate quantitative MRI system; systems designed specifically for quantitative performance
- Strong focus on tests that lead to results to be used by service personnel; tests outside this area may be deemed by vendors as not useful, e.g. does not relate to serviceable issues
- Need to identify types of phantoms and metrics to propose to vendors; need to convince vendor management that pay-off is affected
- Additional feedback on features of new phantom needed from committee members
- Drs Purdy (Siemens) and Ivancevic (Philips) to provide feedback whether MRI Phantom Prototype V3 “compliance” would be considered by vendors
- Dr Knopp to forward Profile section content to Dr Gupta for incorporation

Next steps:
- Dr Jackson to follow-up with The Phantom Laboratory (Joshua Levy) to discuss costs and fabrication details for new design
- Updated QIBA phantom study protocol needed
- Dr Guimaraes offered GE and Siemens acquisition at MGH; follow-up with Dr Sorensen and group feedback for next update call
- Dr Purdy (Siemens) and Ivancevic (Philips) to provide feedback whether MRI Phantom Prototype V3 “compliance” would be considered by vendors
- Dr Knopp to forward Profile content to Dr Gupta for incorporation
- Next call scheduled for Wednesday, Sept 15, 2010 at 11 am CDT