

## QIBA Musculoskeletal (MSK) Biomarker Committee (BC)

Tuesday, November 21, 2017 at 10 AM CT

### Call Summary

#### In attendance

<i>Thomas Link, PhD (Co-Chair)</i>	Youngkyoo Jung, PhD, DABR	Rob Peters, PhD
<i>Xiaojuan Li, PhD (Co-Chair)</i>	Rick Kijowski, MD	Ravi Regatte, PhD
Angie Botto-van Bemden	Leon Lenchik, MD	Ramya Srinivasan, MD
Robert Boutin, MD	Elizabeth Mirowski, PhD	Carl Winalski, MD
Garry Gold, MD	Vladimir Mlynarik, PhD	Cory Wyatt, PhD
Peter Hardy, PhD		

#### RSNA

Joe Koudelik  
Susan Weinmann

**Moderator:** Dr. Link

#### Introduction of New Members

- Angie Botto-van Bemden – Director of OA programs, Arthritis Foundation
- Elizabeth Mirowski – CEO, QalibreMD
- Kathryn Keenan – NIST
- Vladimir Mlynarik – Medical University of Vienna
- Ramya Srinivasan – University of California, San Francisco
- Peter Hardy – University of Kentucky

#### Update on Arthritis Foundation Study

- Multi-vendor, multi-site, reproducibility phantom study funded by Arthritis Foundation
  - Demonstration project to help set up for a larger clinical trial
  - Three phantoms (UCSF has one from GE-NBA study) were ordered and received in support of this study from the same batch of GE-NBA study
  - Phantom specifications are from UCSF and were manufactured by the Phantom Lab, containing 2%, 3% and 4% agarose gel phantoms
- Aim is to standardize protocols and perform cross-validation of cartilage T1rho/T2 values in phantoms and human subjects between sites (Cleveland Clinic, UCSF, Univ of Kentucky, Albert Einstein College of Medicine) and vendors (GE, Siemens, Philips)
- Participating sites to confirm that study candidates do not contain metal objects (from surgery), which may affect measurements, and no severe OA
- Differences in data across vendors to be identified
- Suggestion to add spin echo T2 sequence (similar to OAI protocol)
- OAI sequences to be included within the Siemens acquisition protocol
- Pulse sequences to be kept similar across all scanners for standardized data processing
- Patient handling was discussed, e.g. sitting in a chair for 30 min prior to the MRI
- Goal is to complete scanning within 6 months

### Update on Phantoms (Dr. Li)

- Dr. Mirowski at QalibreMD, Dr. Keenan from NIST, and Dr. Li are collaborating on phantom development
- Plan to write NIH/SBIR grant to develop phantom
- Next step is to involve clinical application; Dr. Mirowski is reaching out to clinical sites to ask them to participate in the phantom study

### Meta-Analysis and Editorial

- Focusing on reproducibility, a meta-analysis paper on cartilage compositional biomarkers will be published in OA&C
- This was reviewed by Drs. Li and Obuchowski and found to provide material required for review of T2/T1rho imaging biomarkers
- Dr. Kijowski has suggested that Drs. Li and Link write an editorial concerning this paper. This is currently work in progress.

### Next Steps

- The November 29 QIBA Working Meeting at the RSNA Annual Meeting and breakout sessions may help provide guidance on Profile-writing; standard sequences and protocols to also be discussed
- Dr. Hardy to share B0/B1 mapping protocols with Dr. Li offline
- In efforts to accommodate MSK members who are unable to join t-cons on the third Tuesday at 10 AM CT, an alternate time slot on the third Wednesday at 9 AM CT will be used on a quarterly basis, effective in February 2018
- RSNA staff to include upcoming call schedule with call-in details

### Next Call: Tuesday, January 16, 2018 at 10 AM CT

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