

QIBA Musculoskeletal (MSK) Biomarker Committee (BC) Meeting

Tuesday, April 26, 2022, at 10 a.m. CT

Meeting Summary

In attendance

Xiaojuan Li, PhD (Co-chair)	Hung Do, PhD	Yuxi Pang, PhD
Thomas Link, MD, PhD (Co-Chair)	Harry Friel, MS	Chris Peng, PhD
Donald D. Anderson, PhD	Maggie Fung, MEng	David Rutkowski, PhD
Bruce D. Beynon, PhD	Peter Hardy, PhD	Nicole Wake, PhD
Angie Botto-van Bemden, PhD	Youngkyoo Jung, PhD, DABR	Carl Winalski, MD
Robert Boutin, MD	Jason Kim, PhD	Cory Wyatt, PhD
Majid Chalian, MD	Kecheng Liu, PhD, MBA	Jiming Zhang, PhD, DABMP(MR), MRSE
Ruud de Boer, PhD	Nancy Obuchowski, PhD	Yansong Zhao, PhD

RSNA

Joe Koudelik
Susan Stanfa

Topics Discussed

- [Stage 3: Technical Conformance](#); new members and sites (Dr. Link)
- Outline and update of [April 22 version of RSNA QIBA MSK Profile Stage 3 and 4 Conformance Testing Scope of Work document](#) (Dr. Li)
 - Standard Operating Procedure (SOP) for stage 3 and 4: T1p and T2 Phantom MR scan
 - Scope of Work
 - Proposed timeline
 - Simplified version of phantom and human subject SOP
 - Q&A from participating testing sites

Participating sites with phantoms

- Albert Einstein College of Medicine (Chris Peng)
- Brigham and Women Hospital (Stacy Smith and Elena Losina)
- Cleveland Clinic (Carl Winalski, Xiaojuan Li)
- Cleveland Clinic Florida (Amer Hanano)
- Duke University (Brian Soher and Virginia Kraus)
- Erasmus University Medical Center (Edwin Oei)
- Stanford University (Feliks Kogan)
- University of California, San Francisco (Jing Liu, Thomas Link)
- University of Iowa (Daniel Thedens and Don Anderson)
- University of Kentucky (Peter Hardy)
- University of North Carolina Chapel Hill (Brian Pietrosimone)
- University of Vermont (Bruce Beynon)
- University of Washington Medical Center (Majid Chalian)

Vendors

Philips
Siemens
Siemens
Siemens
Siemens
GE
GE
GE
GE
Siemens
Siemens
Philips
Siemens, Philips

Next Steps / Action Items

- Calimetrix to take over the production of MSK phantoms
- SOW goal is to confirm that it is practical for imaging sites to conform with the technical requirements of the QIBA MSK Profile and thus be able to reproducibly obtain quantitative cartilage T1p and T2 imaging data
- Repeat phantom scans were discussed: temperature information to be collected to pinpoint causes of variation (temperature stickers can be used), e.g., hardware, software, temperature, etc. between sites
- Dr. Li to develop form to collect site documentation of temperature and timing between phantom scans and other information
- Details were provided re: human volunteer scan / rescan on the same day with repositioning between scans
- [Dr. Li](#) can be contacted for help with data processing (cartilage segmentation and relaxation time fitting)

- It was recommended that sites start IRB application and Data Use Agreement (DUA) paperwork as needed ASAP; IRBs to include brief detail (1-2 sentences) that sites may (optional) share data using a central repository to be determined
- Protocols and paperwork to be finalized through May and NIST phantoms to be developed and distributed by the end of June
- Site data collection period to be extended by a month (July 2022 – January 2023) and data analysis (Feb – March 2023) and publishing of results (April-May 2023) periods to be shifted by a month
- Dr. Rutkowski at Calimetrix addressed shelf life for phantoms, explaining that agarose gel is stable, depending upon conditions and the addition of other solutions; manufacturer to store and monitor for stability
- The following suggestions submitted via chat will be discussed during the May 24 meeting:
 - Dr. Chalian suggested using the [modified Outerbridge grading of chondromalacia](#) as a scale to identify grades 1-3
 - Dr. Liu suggested incorporating photos and pictures to show the phantom positions and orientation
- Site feedback received during stage 3 will be compiled in the [Technical Confirmation Resolutions Google Sheet](#) developed by the Process Cmte; Mr. O'Donnell and Dr. Boss to be invited to review it during the May 24 meeting
- [The April 22 SOW document](#) will be updated and circulated

Next Meeting: Tuesday, May 24, 2022, at 10 a.m. CT [4th Tuesday of each month]

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