

## QIBA MRE Biomarker Committee Call

Tuesday, March 10, 2015 at 3 PM CT

Draft Call Summary

### Participants

*Patricia Cole, PhD, MD (Co-Chair)*

*Richard Ehman, MD (Co-Chair)*

Mark Palmeri, MD, PhD

Suraj Serai, PhD

Claude Sirlin, MD

Daniel Sullivan, MD

### RSNA

Fiona Miller

Joe Koudelik

Julie Lisiecki

Susan Weinmann

### Next Steps for QIBA Profile Effort for MRE Discussed

- The MRE Profile is to be data-driven, focusing on the characterization of bias and precision in MRE measurement targets for achieving these measurements
- Currently, no well-accepted MRE phantoms are available
  - The group may want to consider using the Mayo Clinic MRE phantom
- “Truth” is needed for accurate determination of the bias measurements, as prescribed by QIBA’s Metrology Work Group
  - These bias measurements can only be obtained via phantom groundwork
- Although difficult to obtain, precision measurements based on test-retest clinical image data would prove more relevant to the Profile than phantom data
- Additional challenges include the following:
  - Limited number of labs that can process MRE data
  - Only four test/retest studies are currently available that apply specifically to MRE
    - Unpublished data may also be used, though it is a “weaker” level of evidence and may require explanatory text
  - Sources of variability must be catalogued and evaluated
  - Acquisition techniques are challenging, as the interfaces are not user-friendly
  - Shear modulus measurement of semi-solid wet material will prove difficult for obtaining “truth” (the current claim)
    - Consideration to be given to using repeatability as the metric for the Profile claim, as bias and precision are too difficult to measure
    - A detailed rationale is needed for such a claim
    - Metrology terminology and statistical design will require the assistance of a statistician, such as Dr. Obuchowski, to guide the group in defining the claim language
- Two phases of study proposed:
  - Phase I: Cross-sectional precision
  - Phase II: Longitudinal precision
    - Both possibilities depend on available data
    - Recommendation to consult with Dr. Obuchowski
      - Dr. Sirlin mentioned that he also has repeatability data available
        - Group to focus on literature review and reconvene in one month to share findings.

### Next steps / Action Items:

- Dr. Cole to moderate next WebEx call in April; co-chairs to rotate.
- Next call proposed for **April 14, 2014 at 3 pm CT**, with Dr. Obuchowski as guest speaker.
- Group members to focus on literature review based on repeatability
  - Drs. Sirlin and Miller to initiate literature search/ data collection
  - References may be emailed to Susan Weinmann, RSNA Staff: [sweinmann@rsna.org](mailto:sweinmann@rsna.org)