PULSE-ECHO QUANTITATIVE ULTRASOUND BIOMARKER COMMITTEE

Agenda for Friday, July 1, 2022

11:00am – 12:00pm

Attendees: Ivan Miguel Rosado-Mendez (Co-Chair), Anthony Samir (Co-Chair), Michael Wang, (Co-Chair), Cristel Baiu, Richard G. Barr, Paul L. Carson, David Fetzer, Jing Gao, Timothy Hall, Aiguo Han, Viksit Kumar, Roberto Lavarello, Amy M. Lex, Kibo Nam, Gary Ng, Soufiane Ouhda, Arinc Ozturk, Stephen Rosenzweig, Timothy Stiles, Theresa Tuthill, Xiaohong Wang, Keith Wear, Firouzeh Heidari, Hayley Whitson, Nancy Obuchowski, Peter Edmonds

AIUM Staff: Kelly Phillips

TOPIC	COMMENTS	ACTION ITEMS
Introduction	Welcome (MW - 1 min)	
Phantom Scanning	Update on phantom scanning at UW-Madison (IRM – 10 min)	
Data	Study Data Archive (MW – 4 min) a. Data storage at QIDW b. Feedback from industry partners on possible conflict with research agreements	
Work Groups	Work Group Progress Reports a. Attenuation – update on measurement protocol (10 min) b. Sound Speed (10 min) c. Backscatter (10 min) d. Phantom (10 min)	

Discussion	Open discussion/Adjourn (5 min)	
NEXT CALL	Date: August 5, 2022 Time: 11:00am, EST	

IRM – shared initial measurements on PEQUS phantoms

- Discussion
    - The two sets of liver-mimicking phantoms (A-D) will now be made of Zerdine
    - Reference phantoms will be made of water-based gel
    - Phantom A, 2 units made of Zerdine and 1 made o9f water-based gel
    - Preliminary characterization with 2 commercial implementations
    - Scanning time per appraiser (possibly worst-case scenario)
        - 2 hours, 3 depths (10 measurements/depth), 3 phantoms = 9 units, 2 hours/9 units = 0.22h/unit
        - 4 depths, 4 phantoms, 3 trials = 48 units -> 48 units x 0.22 h/unit = 10.56h
    - Next step:
        - Finalize coupling media comparisons with CIRS prototype
        - Measure glass bead distributions to have a more accurate Faran theory prediction
            - Coulter counter
            - Laser diffraction sizer
        - Characterize incoming phantoms
        - Measurements with commercial implementations (2 systems)
            - System 1 – 4.5 cm, 6 cm, 7.5 cm
            - System 2 – Fixed depth
- Discussion on authorship for publication

MW – Study Data Archive

- Proposing to use QIDW hosted by RSNA – access to the data uploaded will be restricted to members of the PEQUS committee on an as-needed basis

- Suggested adding a clause for industry partners

Work Group Updates

AO – Attenuation WG Updates
- Statistical questions about the protocol
- Reached out to Nancy O with 4 questions/examples for the 3 appraisers and trials
    - AS – suggest two study optimization meetings; then back to larger group for recommendation on optimization procedure

SR - Sound Speed WG Update
- Manuscript Status
    - Submitted
    - Reminder to co-authors – please submit COI forms
- Measurement protocol/spreadsheet
    - On Basecamp
    - If sites review and have questions – please reach out
- Data acquisition sheet on Basecamp (Google form)
    - Needs to be updated with phantom names
    - Will have separate site registration form (for device information)

TT – Backscatter WG Update
- Radiology paper (K. Wear)
    - Revision submitted on 6/9; awaiting response
- Work for phantom study
    - Agreement not to include Samsung manual as TSI-p is different from BSC
    - Potential for RF collection from GE and Fuji, but dependent on site collaboration agreement with manufacturer
    - Proceeding with manual for RF collection
    - Collecting additional info from site on agreements with manufacturers (Firouzeh collating)
- Attenuation Correction

- Lengthy discussion on Dr. Rubin's proposal for spleen as a reference. Dr. Sirlin interested in investigating (out of scope of profile work)

TS – Phantom WG Update

- Phantom production
  - Cristel Baiu will be leaving Sun Nuclear; sincere thanks for his hard work on this project
  - Possible issue with viscosity of background material for high attenuation, low speed phantom with large beads
  - Some "swirls" that may be gel that has partially set during pour
- Ted Lynch at CIRS will finish production of both sets of phantoms
  - Test phantoms will be made with Zerdine; reference phantoms with HE gel
- Membranes are characterized for water – membrane – phantom – membrane – water transmission from 1 to 10 MHz
  - Needed for through transmission attenuation measurements and planar reference BSC