



**PULSE-ECHO QUANTITATIVE ULTRASOUND  
BIOMARKER COMMITTEE**

*Agenda for Friday, December 10, 2021*

*11:00am – 12:00pm*

Attendees: Ivan Miguel Rosado-Mendez (Co-Chair), Anthony Samir (Co-Chair), Michael Wang, (Co-Chair), Stephane Audiere, Cristel Baiu, Paul L. Carson, Guy Cloutier, Chris De Korte, Aaron Engel, Todd Erpelding, Raul Esquivel, Giovanna Ferraioli, Timothy Hall, Aiguo Han, Jean-Pierre Henry, Viksit Kumar, Roberto Lavarello, Tian Liu, Jonathan Mamou, Stephen McAleavey, Kibo Nam, Soufiane Ouhda, Theodore Pierce, Michelle L. Robbin, Stephen Rosenzweig, Jonathan Rubin, Timothy Stiles, Theresa Tuthill, Keith Wear, James Zagzebski, Firouzeh Heidari, Hayley Whitson, Nancy Obuchowski, Kevin O'Donnell

AIUM Staff: Kelly Phillips

TOPIC	COMMENTS	ACTION ITEMS
Introduction	Welcome (IRM - 2 min)	
Prototypes	Overview of preliminary tests with phantom prototypes during RSNA (IRM – 5 min)	
Contributions	Update on vendor contributions (MW – 3 min)	
Protocol	Update on protocol (AS, F. Heidari – 5 min)	Next steps: send protocols to Firouzeh so she can merge the measurement protocols from the working groups and comparing with the imaging protocols provided by

		the vendors to make sure there's a unified approach; help test the imaging protocol
Work Groups	<p>Work Group Progress Reports</p> <ul style="list-style-type: none"> <li>a. Phantom (10 min) <ul style="list-style-type: none"> <li>- Discussion on using same membranes in both phantom sets</li> <li>- Shipping cases and boxes</li> <li>- Phantom care instructions</li> </ul> </li> <li>b. Backscatter (10 min) <ul style="list-style-type: none"> <li>- Status of measurement protocol</li> <li>- Status of summary manuscript</li> </ul> </li> <li>c. Sound Speed (10 min) <ul style="list-style-type: none"> <li>- Status of measurement protocol</li> <li>- Status of summary manuscript</li> </ul> </li> <li>d. Attenuation (10 min) – Finalized phantom specs <ul style="list-style-type: none"> <li>- Status of measurement protocol</li> </ul> </li> </ul>	<p>Phantom WG:</p> <ul style="list-style-type: none"> <li>-Make lollipops with standard material; strategy to re-weigh phantoms midway through study</li> </ul> <p>Attenuation WG:</p> <ul style="list-style-type: none"> <li>-Survey to vendors asking for center frequency and bandwidth used in their devices</li> <li>-Consensus on reporting attenuation value</li> <li>-Protocol for phantom study</li> </ul>
Closing	Closing remarks/discussion (IRM - 5 min)	
NEXT CALL	<p>Date: January 7, 2022</p> <p>Time: 11:00am, EST</p>	

## Work Group Updates

### Phantom WG – TS

- Phantom Membranes
  - Should both scanning phantoms and through-transmission samples (aka lollipops or hockey-pucks) use same membrane?
    - Through transmission could use a thinner material that offers larger transmission
  - Should both manufacturers use the same membrane?
    - There is some intellectual property associated with phantom membrane
- Phantom Care
  - Care when opening and removing phantoms from case
  - Discussed weighing the phantom at each site, but that leads to potential problems with precision of the scale
    - Need to measure several kilograms with precision of a gram or so
    - Propose to send phantoms back to manufacturers at about half way point, measure with same scale and be able to repair if necessary
  - Manufacturer details on using water dam and care when packing to send to next user

### Backscatter WG – TT

- Protocol for Phantom Study
  - Document essentially completed
  - Depth ranges: 2-4, 4-6, 7-9 cm [Similar to Atten WG?]
  - Question on coupling medium and phantom surface since phase array usually used for liver
- Manuscript
  - Still working on draft for Radiology (led by Keith Wear)
  - Collecting figures
- Attenuation compensation
  - Anil Chauhan analyzing (fat/muscle annotation) from images provided by Dr. Barr

## Sound Speed WG – SR

- Measurement Protocol/Spreadsheet
  - Created google forms mockup
    - Guided data input of system, transducer, measurements, etc
  - SoS Imaging Manual in Progress
    - Gathering vendor-specific information for final manual
  - Vendors/systems/transducers finalized
  - ROI Size and Depths Finalized
    - Recommend 4, 6.5, 8cm depths
    - Requesting 6.5cm depth due to ROI restrictions on the Hologic SSI system
- Manuscript Status
  - 10/12 sections completed
  - First round of edits completed
  - Figure creation ongoing
  - Targeting early January for final and submission

## Attenuation WG – VK

- Update
  - How to report attenuation coefficient for round robin study and as a good practice?
  - IEC suggests specific attenuation coefficient: at a specified frequency, the attenuation coefficient divided by the frequency
  - Committee narrowed it down to
    - dB cm<sup>-1</sup> MHz<sup>-1</sup> at specified frequency
    - dB cm<sup>-1</sup> MHz<sup>0.1</sup> at center frequency
    - as reported by vendor
- Action Items
  - Survey to vendors asking for center frequency and bandwidth used in their devices
  - Consensus on reporting attenuation value
  - Protocol for phantom study