

# QIBA Contrast Enhanced Ultrasound (CEUS) Biomarker Committee (BC) Call

Friday, July 14, 2017; 11 AM CT

Call Summary

In attendance			RSNA
Richard Barr, MD, PhD (Co-Chair)	Kenneth Hoyt, PhD	Lihong Pan, PhD	Joe Koudelik
Wui K. Chong, MD	Hui Jiang, PhD	Theresa Tuthill, PhD	Julie Lisiecki
Todd Erpelding, PhD, MSE	Zaiyang Long, PhD	Nikolay Tzaribachev, MD	
Christian Greis, PhD	Mary (Beth) McCarville, MD	Stephanie Wilson, MD	
Ged Harrison, BS	Nancy Obuchowski, PhD		

**Moderator:** Dr. Barr

## Literature Search / Profile

- Recipients of Mendeley invitations need to check “spam” or “junk” folders and accept invitations from Sara Keller
- [Sara Keller](#) at UW is serving as the [Mendeley](#) librarian for the CEUS citation listings and PDF articles
- Members can add papers; all are asked to categorize and tag items as they are added
- Volunteers were recruited to review collected literature and provide an update to the group on the next call (Aug 11):
  - Ged Harrison (GE)
  - Kirstin LaConte (GE)
  - Zaiyang Long (Mayo)
- It was recommended that new participants watch short video tutorials (2-3 minutes each) on [www.mendeley.com](http://www.mendeley.com).
  - Anyone interested in joining the Mendeley group can email RSNA Staff at [jlisiecki@rsna.org](mailto:jlisiecki@rsna.org)
  - Maximum of 25 members allowed within this group
- More papers are needed on repeatability and variability

## Clinical

- The first clinical application for the Profile will be the liver, and phantom data will be used
  - For more detail, please see Dr. Averkiou's notes on the [QIBA wiki](#)
- It is important to first establish that all are using the same analysis software
- *VueBox* from Bracco has been recommended for this purpose, as it can be used across platforms; however, “how” to do this with the group is yet to be determined
  - *VueBox* is currently used only for phantom- analysis
  - A collaboration agreement is in the works to extend 2 licenses for phantom research
  - *VueBox* is not yet FDA-approved in the US, though Bracco is working to obtain approval

## Flow Phantoms

- Drs. Averkiou, Barr, and Hoyt have phantoms; however, work has not begun yet on phantom experiments
- The trio is working on finalizing variables and Dr. Hoyt must obtain a copy of *VueBox* software
- The Bolus technique will be utilized first and the infusion technique may be investigated later
- Though the phantom experiments will help to determine which variables are the most critical; they are not a good model for human studies
- In addition, images may not line up with the outputs generated by the scanners
- A separate ad hoc call for the co-chairs and vendors will be planned to discuss signal standardization, etc.

## Parameters

- Dr. Greis stressed a parameter focus to be on velocity, *not* volume
- Dr. Pan mentioned that measurements on machines must be correlated to measurements from patient to patient, and that flow volume must be established first

- The CEUS BC intends to write a Profile that will standardize the output across multiple vendor systems utilizing alternative contrast agents
- Elimination of variability between machines, and the ability to correlate results with any other lab are also goals
  - It is critical to achieve standardization and for a Profile to be created to achieve this
- Each vendor has a different output linear data that is being requested as a work-around
- The group is striving to achieve the same outputs utilizing the same terminology
- Dr. McCarville is working on determining what parameters are needed to achieve quantitation
  - An infusion technique based on a reference tissue (standard) for measurement was suggested
- Any suggestions for necessary parameters may be sent to RSNA Staff for compilation: [jlisiecki@rsna.org](mailto:jlisiecki@rsna.org)

**Action Items:**

- Dr. Barr to draft an initial list of performance parameters for BC review and feedback
- Dr. McCarville to provide a list of questions / problems with standardizing parameters for quantitation
- Dr. Tzaribachev to follow up with Dr. Laue regarding DCE-MRI protocol applications and possible comparable parameters between the two modalities
- Volunteers for the Literature Review to report back to the group with their findings on the next call (Aug 11)
- Drs. Averkiou and Hoyt to report back to the group regarding initial results from phantom studies (Aug 11)

Ultrasound CEUS BC QIBA wiki page: [http://qibawiki.rsna.org/index.php/Ultrasound\\_CEUS\\_BC](http://qibawiki.rsna.org/index.php/Ultrasound_CEUS_BC)

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**WebEx Calls:**

- **Aug 04: SWS BC**
  - **Aug 11: CEUS BC**
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- **Sept 01: SWS BC**
  - **Sept 08: CEUS BC**
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