

QIBA CT Volumetry Biomarker Committee (TC) Update Call

17 November 2014 at 11 AM CT

Call Summary

In attendance:

Samuel G. Armato, III, PhD (Co-Chair)

Gregory V. Goldmacher, MD, PhD, (Co-Chair)

Lawrence Schwartz, MD (Co-Chair)

Andrew Buckler, MS

Heang-Ping Chan, PhD

Matthew Fuld, PhD

Marios Gavrielides, PhD

Lubomir Hadjiiski, PhD

Rudresh Jarecha, MBBS

Philip F. Judy, PhD

Hyun Grace Kim, PhD

Qin Li, PhD

John Lu, PhD

Michael McNitt-Gray, PhD

Michael O'Connor, PhD

Kevin O'Donnell, MASC

Eric S. Perlman, MD

Adele Peskin, PhD

Nicholas Petrick, PhD

Ehsan Samei, PhD

Berkman Sahiner, PhD

Daniel Sullivan, MD

Ying Tang, PhD

Amit VasANJI, PhD

Binsheng Zhao, DSc

RSNA:

Joe Koudelik

Julie Lisiecki

Agenda: Presentation by Drs. Samei and Sahiner on: Simulated lesion project progress

Presentation title: **Methodology and Reference Image Set for Volumetric Characterization and Compliance**

- Team responsible for content was comprised of researchers from Duke University and the FDA
- Background:
 - Lesion quantification based on actual clinical CT scans lack ground truth
 - It is nearly impossible to know the true size and morphology of lesions in vivo, especially due to the likelihood of lesion deformation during resection
 - Physical phantoms are useful, but often lack realism and variability
 - Image sets with inserted lesions offer validated data for quantitative conformance provided that the images reflect nuances of image formation (Duke expertise) and the varying confluence of anatomical background (FDA expertise)
- **Goals:**
 - Develop and compare methodologies for insertion of realistic lesions in clinical CT images
 - Develop a dataset of hybrid images for quantitative volumetric characterization.
- Reference:
 - Solomon J and Samei E. **A Generic Framework to Simulated Realistic Lung, Liver, and Renal Pathologies in CT Imaging.** *Phys. Med. Biol.* 59 (2014): 6637-6657. doi: [10.1088/0031-9155/59/21/6637](https://doi.org/10.1088/0031-9155/59/21/6637)

Action items: Committee to consider future directions for discussion at the f2f meeting at RSNA 2014

Next Call: November 24th: Table 1 Numbers for the Profile Discussion (bias and precision numbers) – small group

Schedule Update:

- November 24th – Small Group: - Table 1 Discussion
- December 1st - No call (RSNA Meeting)
- December 8th – No call
- December 11th at 11:30 am CT: [QIBA Group 3A](#) -- Special call with CT Vol Co-Chairs and Dr. Athellogou
- December 15th – Last call for the Biomarker Committee for 2014