

QIBA Lung Density Biomarker Committee

January 4, 2017 at 2 PM CT

Draft Call Summary

In attendance

Sean Fain, PhD (Co-Chair)

Andrea Ferrero, PhD

Philip Judy, PhD

Matthew Fuld, PhD (Co-Chair)

Charles Hatt, PhD

Miranda Kirby, PhD

David Lynch, MD (Co-Chair)

Bernice Hoppel, PhD

Nancy Obuchowski, PhD

Heather Chen-Mayer, PhD

Stephen Humphries, PhD

Jered Sieren, BSRT (R) MR CT

RSNA

Joe Koudelik

Julie Lisiecki

Profile Work (Drs. Hatt and Kirby, and Mr. Sieren)

- Discussion of Image Analysis Workflow
 - Additional work is needed on the image analysis section
 - Specific targets for the Profile must still be determined
 - Updates based on the discussion will be provided for group review prior to the next call on 1/18
- A proposed software challenge is under consideration to determine the magnitude effect of software on lung density measurements
- Rules of the challenge would follow similar protocols as those outlined in MICCAI or SPIE
 - Such a challenge would allow for comparison of software vendor results, which would provide the following updates for the Profile:
 - Limits of agreement between software versions
 - Bias
 - Additional sources of variation created by segmentation and analysis techniques Consensus regarding the steps needed to complete a robust segmentation for lung density (image analysis section)
 - Results from the challenge, not challenge details themselves, would be included in an appendix for the Profile

Planning for the proposed Challenge

- It would be ideal to make the COPDGene data publicly available via the QIDW for a constant future reference
- Presently, there are 100 datasets that are publicly available on [dbGaP](#); however, this data would probably need to be re-anonymized for the group's use and reference
- If a challenge would be completed, the group would consider writing a paper for publication of the study results
- If approved, such a challenge would be designed for eight targeted vendors
- Air-trapping would be pursued for a future Profile

Action Items

- Dr. Hoppel to follow up with Dr. Chen-Mayer regarding data questions
- Dr. Hoppel also to follow up with her Toshiba contact in Toronto
- Dr. Lynch to follow up with Ms. Ekta Dharaiya, the group's Philips liaison
- Volunteer needed to draft a Challenge strawman
- Dr. Chen-Mayer to discuss preliminary results on 1/18 call
- There will also be an AEC update on 1/18
- Drs. Hatt, Kirby, and Mr. Sieren will provide additional updates on the Image Analysis section of the Profile as well as additional details regarding the proposed challenge

Next call: [Wednesday, January 18, 2017 at 2 pm CT](#)