

QIBA fMRI Biomarker Committee (BC) Meeting

Wednesday, March 1, 2023, at 11 a.m. (CT)

Meeting Summary

In attendance

Feroze Mohamed, PhD (Co-chair)

Jay Pillai, MD (Co-chair)

David Soltysik, PhD (Co-chair)

Shruti Agarwal, PhD

Cathy Elsinger, PhD

Andrew Kalnin, MD

Erin Kelly, PhD

Anthony Liu, PhD

Nancy Obuchowski, PhD

Kiran Talekar, MD

James Voyvodic, PhD

RSNA staff

Susan Stanfa

Review of Previous Meeting Summary:

- The 02.15.2023 meeting summary was approved as presented

Topics Discussed:

- Update on recalculation of reproducibility measurements
- Process of selecting clusters for comparison
- ROI Identification and Anatomical Registration Sections in Appendix

Next Steps / Action Items:

- Reproducibility measurements for peak and center of mass cluster plots were recalculated using the following criteria: (1) largest in size, (2) closest to anatomical landmarks, and (3) strongest activation
 - Better reproducibility was found with centers of mass than with peaks
 - No relationship was found between cluster location and reproducibility
- With clusters in the large ROIs, there seemed to be little difference in how reproducible the distance between cluster centers and pairs of clusters as a function of distance from the expected average location
- Strength of activation of the cluster and the size of the clusters make a difference in reproducibility
- Center of mass activation, the presence of clusters, or the reproducibility of clusters is better for reasonably strong activation, i.e., for clusters with maximum t-value ≥ 8
 - The size or volume of the activation of the cluster also increases the probability that another cluster will be in the same place upon rescanning
 - There will need to be a Claim 1a: Center of Mass and Claim 1b: Peak; values will also need to be updated based on more definitive results of Dr. Voyvodic's work
- Once clusters fundamental to the Claim are confirmed, **Dr. Voyvodic will draft the explanatory text for the method to determine which clusters need to be repeated in a second scan to add to Section 4**
- Discussion re: ROI Identification section in the Appendix
 - This is a step before calculating laterality, identifying clusters and activation map thresholding
 - The procedure would involve registering the atlas brain to the patient's brain, as opposed to registering the patient's brain to an atlas brain; the ROIs are bilateral
 - Dr. Voyvodic to write steps and provide corresponding figures for Dr. Liu to review
- Anatomical Registration section in the Appendix was reviewed following discussion
- Next steps following completion of the Profile:
 - Circulation for full BC internal review followed by a vote-to-release for Stage 1: Public Comment
 - MR CC vote-to-release will follow

Next meeting: Wednesday, March 15, 2023, at 11 a.m. CT (1st & 3rd weeks of each month)

Participants are welcome to contact RSNA staff at giba@rsna.org if their attendance is not reflected in meeting summaries.