

**QIBA fMRI Bias Work Group Call**  
Tuesday, January 8, 2013 at 10 AM CT  
Draft Call Summary

**Participants**

*James Voyvodic, PhD (Chair)*  
Paul Carson, PhD  
Barbara Croft, PhD  
Cathy Elsinger, PhD  
Jeffrey Petrella, MD

Jay J. Pillai, MD  
Daniel Sullivan, MD  
Domenico Zaca, PhD  
Yong Zhou, PhD

**RSNA**

Julie Lisiecki  
Madeleine McCoy

**Discussion**

- Discussion regarding what constitutes a biomarker for fMRI
  - Neural activity, blood flow, blood oxygenation, and BOLD effect were considered
  - Whether it can be quantitative is an ongoing discussion, with consideration for lack of uniformity across the brain
- Recommendation to focus discussion on healthy tissue to understand the quantitative capabilities when the underlying physiology is normal
- Next step will be to define biomarker qualification methods for identification of individual patients for whom such physiological processes are abnormal (e.g. in tumors, strokes, etc.) and what fMRI means in those cases.
- Drs. Voyvodic and Pillai to identify additional published papers on the physiological coupling in the brain between neuronal activity, blood flow, blood volume, blood oxygenation, and BOLD signal.
- Blicher article on dynamic ASL suggested for group reference:
  - **J Cereb Blood Flow Metab.** 2012 Nov;32(11):2044-54. doi: 10.1038/jcbfm.2012.105. Epub 2012 Jul 25. Visualization of altered neurovascular coupling in chronic stroke patients using multimodal functional MRI. Blicher JU, Stagg CJ, O'Shea J, Ostergaard L, Macintosh BJ, Johansen-Berg H, Jezzard P, Donahue MJ.
  - Source 1] Research Unit, Hammel Neurocentre, Aarhus University Hospital, Hammel, Denmark [2] CFIN, Aarhus University Hospital, Hammel, Denmark. PubMed link: <http://www.ncbi.nlm.nih.gov/pubmed/22828998>
- Dr. Pillai to conduct a mesh-terms literature search on Blicher paper bibliography and his most recent paper
- Dr. Voyvodic to circulate a list of papers and 2-3 articles for discussion on the January 22<sup>nd</sup> call

**Next steps**

- Dr. Voyvodic to circulate a list of papers plus 2-3 specific articles to distribute to the group to focus the bias discussion for the January 22<sup>nd</sup> call discussion
- Dr. Pillai to try a literature search with Blicher paper bibliography and his most recent paper with mesh terms search: (vaso) (ASL) (BOLD)

**Next calls:**

- QIBA fMRI Technical Committee, **Wednesday, January 16, 2013 at 11 am CT**
- QIBA fMRI Bias Working Group, **Tuesday, January 22, 2013 at 10 am CT**