

QIBA Perfusion, Diffusion and Flow – MRI Biomarker Committee (BC) Update Call

Wednesday, December 7, 2016 at 11:00 AM (CT)

Call Summary

Participants

Michael Boss, PhD (Co-Chair)
Daniel Barboriak, MD
David Bennett, PhD
Mark Brown, PhD
Thomas Chenevert, PhD
Amita Dave, PhD
Peter Hardy, PhD
Timothy Dondlinger

Bradley Erickson, MD,
Jacob Fluckiger, PhD
Edward Jackson, PhD
Daniel Krainak, PhD
Hendrik Laue, PhD
Chen Lin, PhD
Mikko Määta, PhD
Dariya Malyarenko, PhD

Elizabeth Mirowski, PhD
Nancy Obuchowski, PhD
Ramesh Paudyal, PhD
David Radoff, MS
Walter Schneider, PhD
Ying Tang, PhD
Junqian (Gordon) Xu, PhD

RSNA

Joe Koudelik
Susan Weinmann

Moderator: Dr. Boss

Round-5 Project Update (Dr. Barboriak)

- Dr. Laue's / MEVIS' QDET open source analysis software for DROs was used as a starting point for this NIBIB-funded project
- Dr. Barboriak provided background on this project which seeks to figure out how to use DROs simulating T1 mapping and dynamic images obtained with DCE-MRI experiments to measure performance
- Since bias and precision vary among the different software packages compared, it is not clear how to combine and analyze the data
- This project was an opportunity to:
 - Provide open source aggregated metrics to evaluate DROs and other objects related to imaging
 - Provide open source access to statistical analyses
 - Use scripts to tune parameters
 - Demonstrate use of aggregated measures of agreement to rank performance of competing image analysis algorithms
 - Provide guides to interpretation (assistance from Dr. Obuchowski)
- Dr. Laue to finalize all installers for use with Linux and Mac platforms (Windows install is working now)
- Dr. Barboriak expressed that he would like other QIBA groups to benefit from his work with QDET
 - There are many other applications for software besides how it was used in this project
 - It was funded as cross-modality project
 - The Cross-Coordinating Committee Leadership call on January 19 would be a great opportunity for Drs. Barboriak and Laue to present this work to leaders across all modalities
- The QIDW contains all other software created as deliverables of NIBIB-funded projects and can be accessed at: <http://qidw.rsna.org/>
- Modification of the QIDW is currently underway as the migration to a new platform occurs

DWI Profile Update (Drs. Boss & Chenevert)

- A high-level progress updated was provided
- Extensive changes have been made to the DWI Profile and it is essentially a complete document that needs a few modifications
 - Administrative tasks, such as updating Table of Contents page numbers need to be updated
 - Numerical values in Claim statements to be finalized, with numbers in new references to be integrated
 - Not much change to Claims are anticipated due to the fact that the numerical values in new references are closely aligned with the numbers in existing references
- The Executive Summary & Clinical Context sections are completed
- Literature references for brain and liver were added
- Generic terminology was used for specifications, referring the user to an appendix containing additional details; settings would be replicated using this info.
- Visual examples for image reconstruction issues to be included
- References for DRO & phantom-scanning instructions are needed
- RSNA staff to provide an author list of PDF-MRI BC members for Appendix B
- Prior to the next DWI TF call, Dr. Boss to discuss Claims issues in further detail with Dr. Obuchowski
- Outstanding Profile issues will reviewed at the next DWI TF call on December 15
- After final updates are made at the TF level, the Profile will be distributed to the PDF-MRI BC membership

Possible White Paper on Reproducibility Study Needs

- This discussion was tabled and will be revisited in the new year

Upcoming PDF Task Force Updates:

- ~~December 21~~ – No call due to the upcoming holidays;
- **January 4 – DSC Task Force**
- January 18 – DCE Task Force Update
- February 1 – DTI Task Force
- February 15 – DWI Task Force

Next PDF-MRI Biomarker Committee Call: January 4, 2017 at 11 AM CT