

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

Wednesday, August 31, 2016 at 11:00 AM (CDT)

### Call Summary

#### Participants

*Michael Boss, PhD (Co-Chair)*

David Bennett, PhD

Mark Brown, PhD

Thomas Chenevert, PhD

Caroline Chung, MD

Amita Dave, PhD

Vadivel Devaraju, PhD

Timothy Dondlinger

Daniel Gembris, PhD

Xavier Golay, PhD

Daniel Krainak, PhD

Hendrik Laue, PhD

Mikko Määttä, PhD

Nancy Obuchowski, PhD

Savannah Partridge, PhD

Lei Qin, PhD

Jason Stafford, PhD

Ying Tang, PhD

Brian Taylor, PhD

Ona Wu, PhD

Dewen Yang, MD, PhD

Robert Young MD

#### RSNA

Joe Koudelik

Susan Weinmann

*Moderator: Dr. Boss*

#### DCE TF Update (Drs. Chung and Laue)

- B1 mapping phantom approved as Round 6 groundwork project
  - Kickoff meeting scheduled for September 2, 2016
- DCE Profile 2.0 Update
  - Profile content is being edited so that it closely aligns with the DWI and DSC Profiles
    - TF has formed clinical and technical sub groups
  - Dr. Nayak has reworked the Executive Summary
    - Citations still need to be placed in some cases
  - Dr. Dave to incorporate head & neck information
  - Using *Google Docs* for this Profile provides many advantages, including:
    - Tracking edits; indicating when they were made and by whom
    - Comments can be added
    - Automatic saving
    - No need to email Profile back and forth or wait for someone to email you their updated copy
    - No confusion in regard to having the latest version of the Profile
    - Using color-coding to indicate what has been done or needs to be done to the document text
  - Main sections will remain fairly uniform, but additional sub-claims may be added to the Profile as data is gathered from literature searches on other body sites
  - Profiles are living documents that may be revisited and readjusted as a new document version
- The literature review, currently focused on brain, yielded a large number of papers:
  - Articles from basic search: 2517
  - Articles after removing duplicates: 2490
  - Articles for review by TF members: 403
    - Title/abstract/full paper review: 303 (completed), 75% of total papers of interest
      - Clinical papers: 68

- Preclinical/Theoretical: 40
- Reviews: 8
- Information was provided on the following topics related to articles reviewed:
  - Populations:
    - Brain tumor (glioma, brain mets, meningioma)
    - MS
    - Tuberculoma
    - TBI, IC hemorrhage, CVA, dementia
    - Healthy volunteers
  - Majority of outcome measures were Ktrans or Ve
  - Field Strength/Vendor
  - Acquisition Parameters (for brain tumors)
  - Contrast agent
  - T1 mapping/AIF/Post-processing
  - Reproducibility: No publications were found with test-retest data in the DCE TF's brain literature search
    - Waiting on developing manuscript with test-retest data from Dr. Kalpathy-Cramer
    - DSC data already published, DWI presented at ISMRM 2016, DCE forthcoming (to be published ~early Oct.)
- Dr. Chung to return to literature review data to identify how T1-mapping was performed and will share the information with DCE TF members
- Article authors will be contacted for information regarding post-processing methods
- To advance to head & neck body site for the next literature search and review
- DCE test-retest study
  - Information was provided on the following aspects of the study:
    - Study population
    - MRI sequences
    - Data
    - Study protocol
    - Image analysis

#### **RSNA 2016 Annual Meeting PDF-MRI Poster**

- Displaying a poster in the QIBA Kiosk area provides an opportunity to update other QIBA groups on PDF-MRI activities
- Last year's layout is available as a reference and contains summary, goals, TF activities, groundwork projects, publications and presentations
- PDF-MRI TF elements to include
  - DSC: literature search, phantom progress, efforts in Profile-writing
  - DTI: Profile-writing efforts and Round-6 project
  - DCE: diagrams of B1 phantom, literature search, vendor questionnaire on B1 mapping

- DWI: Profile out for public comment by RSNA 2016 Annual Meeting, longitudinal Claim language, Round-5 DRO project update
- Dr. Boss to contact DTI TF and MR Vendor TF representatives to discuss poster content
  
- TFs were encouraged to incorporate more images/graphics and less text
- Input on summary section to be sent to Dr. Boss
- Other QIBA groups may find it useful to know about Profile cross-comparison efforts among PDF-MRI TFs
- Should be a short section on creation of the Vendor Sub-Committee
- PDF leaders to be notified of publications and presentations to be listed on the poster
- Poster material updates to be provided on the September 14 PDF-MRI BC call
- Poster due to RSNA staff by October 31 for printing

#### **Other Business**

- Round-6 projects to start on September 30, 2016 , pending Federal Contract Officer Approval

#### **Upcoming PDF Task Force Updates:**

- September 28 – DTI
- October 12 – DWI
- October 26 – DSC
- November 9 - DCE

**Next PDF-MRI Biomarker Committee Call:** September 28, 2016 at 11 AM CDT (DTI TF update is scheduled)