QIBA Multi-parametric Metrology Call
25 March 2020 at 2 PM CT
Call Summary

In attendance   **RSNA**

Nancy Obuchowski, PhD (Co-Chair)   Alexander Guimaraes, MD, PhD   Marina Kondratovich, PhD   Joe Koudelik

Huiman Barnhart, PhD   Erich Huang, PhD   Gene Pennello, PhD   Julie Lisiecki

Jana Delfino, PhD   Rudresh Jarecha, MBBS, DMRE, DNB   Xiaofeng Wang, PhD

Nandita deSouza, MD

Moderator: Dr. Obuchowski

Use Case 3: Risk Prediction (Dr. Huang)

- Dr. Huang provided an overview of and shared his draft white paper manuscript on risk prediction
- Topics discussed included the following:
    - Proper use of machine learning
    - Dynamic risk prediction models may change with cumulative data
        - May be used if inter-patient variability is high (QIBs would prove more powerful)
        - If intra-patient measurements are robust, then observed changes maybe be stronger predictors than a QIB
    - Model evaluation (section 2.3)
        - Reproducibility of model scores
            - "Purpose to demonstrate that score values are reasonably uniform no matter where the Quantitative Imaging Biomarker (QIB) measurement and imaging is performed so that predictions don't vary too wildly."
    - Simulation studies
- Dr. Wang will moderate the next call on Monday, April 6th at 2 pm CT, and give a presentation on radiomics

Call Schedule:

Date:	Topic:	Lead:
Monday, April 6 (2 pm CT)	Use case 4: Radiomics	Dr. Wang
Wednesday, April 22 (10 am CT)	Use case 2: Phenotype classification	Dr. Raunig
Monday, May 4 (2 pm CT)	Use case 1: Multi-dimensional descriptor	Dr. Delfino
Wednesday, May 20 (10 am CT)	Use case 3: Risk prediction	Dr. Huang
Monday, June 1 (2 pm CT)	Use case 4: Radiomics	Dr. Wang

Use cases:

- **Use case 1**: (Multi-dimensional descriptor) a panel to determine how to care for a patient
- **Use case 2**: (Phenotype classification) rule or decision tool to diagnose phenotype
- **Use case 3**: (Risk prediction) several biomarkers will be evaluated to create a prediction or risk score
- **Use case 4**: (Radiomics) may not have a specific biomarker for reference

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