QIBA Multi-parametric Metrology Call
16 December 2019 at 2 PM CT
Call Summary

In attendance   **RSNA**
Nancy Obuchowski, PhD (Co-Chair)   Alexander Guimaraes, MD, PhD   Gene Pennello, PhD   Joe Koudelik
Michael Boss, PhD   Erich Huang, PhD   David Raunig, PhD   Julie Lisiecki
Andrew Buckler, MS   Chaya Moskowitz, PhD   David Sullivan, MD
Jana Delfino, PhD

Moderators: Drs. Obuchowski and Huang

RSNA 2019 Update
- Dr. Guimaraes thanked Dr. Huang for moderating the Metrology panel discussion at RSNA 2019
  The QIBA Multi-parametric Metrology poster was very well received

Introductions
- Drs. Delfino and Raunig have joined the group, and all members present provided a brief introduction regarding the type of work they do and their background and interest in metrology
- Dr. Delfino, a biomedical engineer, noted that the Center for Drug Evaluation and Research (CDER) is struggling with some of the same issues as the QIBA Multi-parametric Metrology Group, and she is interested in collaborating

Use Cases
- Dr. Obuchowski provided an overview of the four proposed use cases, described in the table below

	Intended use	*Description*	*Example*
1	Multi-dimensional descriptor	Panel of individual, but related, biomarkers, each of importance	mp-MRI in prostate cancer [ACR PI-RADS, 2019]
2	Phenotype classification	Multiple biomarkers used simultaneously to classify cases into phenotypes (polychotomous endpoint)	Classification of invasive breast cancer tumors using DCE MRI [Li, et al 2016]
3	Risk prediction	Multiple biomarkers used simultaneously to predict patient outcome or risk (binary or ordinal endpoint)	Prediction of neoadjunct chemotherapy response in breast cancer patients [Tadayyon, et al, 2017]
4	Radiomics	High throughput computer extraction of potentially large numbers of derived metrics, or "radiomic features", for prediction	Extraction of features from CT images to develop a radiomics signature that predicts immunotherapy response [Sun et al, 2018]

Use Case Papers

- Dr. Obuchowski proposed that the group break up the use cases into four papers for future publication, with teams assigned to each use case in addition to an introduction/exec summary paper on which Dr. Obuchowski will take the lead
- The use-case papers can be worked on in parallel to save time and move forward
- Proposed journals to consider for future publication included:
  - *Statistical Methods in Medical Research*
  - *The Journal of Medical Imaging*
    - Dr. Maryellen Giger is the Editor presently
- Dr. Raunig and Mr. Buckler expressed interest in working on the paper for use case #1

WebEx Schedule:

- Monday, January 13, 2020
- Monday, January 27, 2020
- Monday, February 10, 2020

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