Application for QIBA Project Funding

Title of Proposal: Digital Reference Object for DCE-MRI Analysis Software Verification 2		
QIBA Committee/Subgroup: Perfusion, diffusion and flow		
NIBIB SOW Objective which this project addresses: Task 3		
Project Coordinator or Lead Investigator Information:		
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Institution/Company: Duke University Medical Center		
Amount Requested:		

Project Description

This application is to continue and expand the previously initiated QIBA DCE-MRI Digital Reference Object (DRO) project (Project 8a).

The lack of standardized and robust image analysis methods is generally recognized as an important barrier to the clinical translation of many quantitative imaging techniques and adds to the uncertainty about the interpretation of the results of analyses. In our prior application, the lack of consensus regarding which analysis techniques are most appropriate for use in clinical trials to help validate DCE-MRI was identified as an unresolved issue.

Primary goals and objectives

The overall goal of this effort has been to aid the process of DCE-MRI analysis standardization by providing a database of images obtained using known parameter values that could be used to evaluate and compare analysis implementations in the context of the development of a multi-center clinical trial. In the context of the DCE-MRI profiling activity which has been a primary QIBA focus, the synthetic data initiative has provided not only **image datasets** but also **comparative software evaluations** as steps towards the ultimate goal of ensuring that particular analysis methods can be used to extract relevant parameters such as K^{trans} and IAUGC with sufficient precision to meet the claims set for in the profile.