



Aaryani Sajja, Dr.

University of Houston

Associate Professor

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Date Friday, October 11, 2024

Time 12:00 to 1:00 PM

Location SEC 201

“Quantitative Liver MRI”

Abstract

Abnormal accumulation of iron (iron overload) and fat (steatosis) are common manifestations of diffuse liver diseases, which can progress through fibrosis, cirrhosis, and, ultimately, liver failure if timely interventions are not provided. Magnetic resonance imaging (MRI) has emerged as a clinically significant non-invasive quantitative tool for independently assessing hepatic iron overload and steatosis. However, these pathologies often co-exist to varying degrees and interfere with the acquired MRI signal, thus biasing the assessments of iron overload and steatosis. Our research evaluates the contribution of size and distribution of iron and fat deposits on MRI signals via simulations, phantom experiments, and in vivo studies to determine an accurate MRI signal model and develop automated methods for simultaneous assessment of iron overload and steatosis.

Dr. Aaryani Tipirneni-Sajja

Joined as an Associate Professor in the Department of Biomedical Engineering at the University of Houston this Fall. Her research focuses on developing accurate and real-time quantitative magnetic resonance imaging (MRI) and NMR spectroscopy methods to identify disease biomarkers, enable early diagnosis, and guide the response to therapy. She aims to translate these quantitative MRI and NMR techniques into translational and clinical research programs to advance patient care. Dr. Sajja has secured grant funding as a Principal Investigator from the National Institute of Health (Trailblazer Award) and National Science Foundation CAREER Award and received several internal and external university grants. She has published 29 journal articles with 1600+ citations, over 50 conference abstracts, and one book chapter in this field. Dr. Sajja has served as K-12 Outreach chair for SWE Memphis and is most interested in empowering women and enriching student education in STEM.