



EMINENT SCHOLARS LECTURE SERIES

**A METAVERSE OF
'MEDICAL TECHNOLOGY AND AI' (META):
BUILDING BLOCKS AND USE CASES
IN MEDICAL IMAGING**

DR. KYLE MYERS

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MSC Bethancourt Ballroom 2300C

Texas A&M University



**HAGLER INSTITUTE
FOR ADVANCED STUDY**
at Texas A&M University

A METAVERSE OF 'MEDICAL TECHNOLOGY AND AI' (META): BUILDING BLOCKS AND USE CASES IN MEDICAL IMAGING

Medical imaging offers a dazzling array of approaches for acquiring information that supports disease detection, staging, treatment selection, and follow up. Recent advances in computing power and the widespread availability of artificial intelligence (AI) algorithms have enabled rapid acquisition and processing of vast amounts of data and the very real potential for development of a metaverse for intelligent healthcare. A metaverse of 'Medical Technology and AI' (MeTAI) can facilitate the development, prototyping, evaluation, regulation, translation and refinement of AI-based medical practice. How then to determine when such nascent tools are ready for prime time?

Image Science provides a framework for the objective, or task-based, assessment of medical imaging systems and the quality of the data they produce. This framework has been used to support the evaluation of medical imaging system hardware, image reconstruction and other image processing methods (including artificial intelligence and machine learning), and display devices by academia, industry, and FDA. This talk will trace the historical arc of progress as medical imaging systems have become more complex while the state-of-the-science for image quality assessment has similarly advanced to meet current challenges in the design, regulatory approval and clinical evaluation of such systems.

Welcome & Introduction

CLIFFORD L. FRY

ASSOCIATE DIRECTOR
HAGLER INSTITUTE FOR ADVANCED STUDY
AT TEXAS A&M UNIVERSITY

Lecture

DR. KYLE MYERS

2023-24 FACULTY FELLOW
PRINCIPAL, PUENTE SOLUTIONS LLC

Reception



DR. KYLE MEYERS

Puente Solutions LLC

Fellow, Hagler Institute for Advanced Study at Texas A&M University

Dr. Kyle J. Myers earned a doctorate in Optical Sciences from the University of Arizona. For over 30 years she worked for the US FDA's Center for Devices and Radiological Health, where she served as the Director of the Division of Imaging, Diagnostics and Software Reliability. She is best known for the development of analytical and regulatory science methods for assessing the safety and effectiveness of medical imaging devices. Her work established next-generation study designs and evaluation methods for novel medical imaging and diagnostics products including digital mammography, 3D breast imaging, low-dose CT for lung cancer screening and whole-slide digital pathology.

Myers belongs to the National Academy of Engineering. In addition to being a Fellow of the Hagler Institute for Advanced Study at Texas A&M University, she is a fellow of the American Association of Physicists in Medicine (AAPM), the American Institute for Medical and Biological Engineering (AIMBE), the International Society for Optics and Photonics (SPIE), and Optica. She served on SPIE's Board of Directors from 2018 through 2023.

Her honors include the Joseph W. Goodman Book Writing Award, jointly awarded by SPIE and Optica, the SPIE Community Champion Award, and the SPIE Harrison H. Barrett Medical Imaging Award. Myers has authored two books, three book chapters, and over 80 peer-reviewed articles.

As founder and principal of Puente Solutions LLC, she now works as an independent research collaborator and consultant to med-tech companies.



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