



N. Shastry Akella, Ph.D.

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Date: Friday, October 30, 2026

Time: 12:00 to 1:00 PM

Location: SR2 130

Title: Measuring What Matters: A Medical Imaging Journey Across Labs, Clinics, And Industry

Abstract: Medical imaging lets us look inside the living body non-invasively. A significant portion of the imaging, however, is still interpreted by eye, and a great deal of biological information goes unused. When images are treated as measurements rather than pictures, they become something more powerful: objective, reproducible signals that can detect disease, track how it progresses, and show whether a treatment is working. This talk follows the journey of a quantitative imaging signal from start to finish. It begins in the laboratory, where new acquisition and analysis techniques are developed and tested in animal models. It is then translated into human studies where methods must prove they are reliable across different subjects, scanners, and sites. It continues into clinical trials, where an imaging measurement can become an endpoint that determines whether a therapy succeeds or fails. At each stage, the central questions remain the same: What does this number actually measure? How much can we trust it? Does it reflect something that matters to improving health outcomes? The talk will also examine the growing role of imaging in medical device and drug development. Well-designed imaging endpoints can reduce subjectivity, shrink clinical trial sizes, provide earlier answers about efficacy, and help regulators and innovators make better decisions. Examples will show how rigorous imaging science turns into faster, more confident paths to new treatments. The talk concludes with the open challenges and opportunities ahead, including standardization, automation, and the integration of AI into medical imaging applications. It also covers why biomedical engineers are especially well placed to shape where quantitative imaging goes next.

Bio: Dr. N. Shastry Akella has spent more than 25 years turning medical images into objective, quantitative evidence. His work began in an academic laboratory and transitioned to the medical imaging industry, and today it supports the development of new medical therapies at a global scale. Dr. Akella earned his MS (2001) and PhD (2005) in Biomedical Engineering from the University of Alabama at Birmingham (UAB), after a Bachelor's degree in Computer Science and Engineering (1997). His doctoral and postdoctoral research focused on novel MR spectroscopic and imaging methods for neuro-oncological applications. These techniques were applied to Phase I trials of anti-angiogenic therapies for brain tumors. As Research Assistant Professor and Director of the Functional Neuroimaging Laboratory at UAB, he built an academic imaging core lab and published over a dozen peer-reviewed papers and proceedings in medical imaging. He also taught graduate and undergraduate imaging courses. Dr. Akella also completed MIT Sloan's Executive Program in AI and Business Strategy (2019). In 2009, Dr. Akella joined Medical Metrics, Inc., a Houston, TX-based medical imaging core laboratory. He has since held roles from Director of Technical Services to President and COO. He has co-authored and managed the development of several hundred imaging protocols and charters for submissions to the FDA, EMA, PMDA and other regulatory authorities. His work has touched more than 650 multicenter trials across musculoskeletal, cardiovascular, and neurological indications, contributing to over 100 device and drug clearances and approvals. Dr. Akella also co-founded SpineCAMP®, an AI subsidiary whose software-as-a-medical-device platform has received two FDA 510(k) clearances and is rapidly growing in its clinical adoption with over 200 users. Dr. Akella has mentored more than 100 biomedical engineers, imaging scientists, and emerging leaders across academia and industry. He is a member of the North American Spine Society and the Radiological Society of North America and serves on the external advisory board of the BME department at UAB, his alma mater.