# Medical Metrology and Standards for American Healthcare and Commerce

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Project Leader, Quantitative MRI

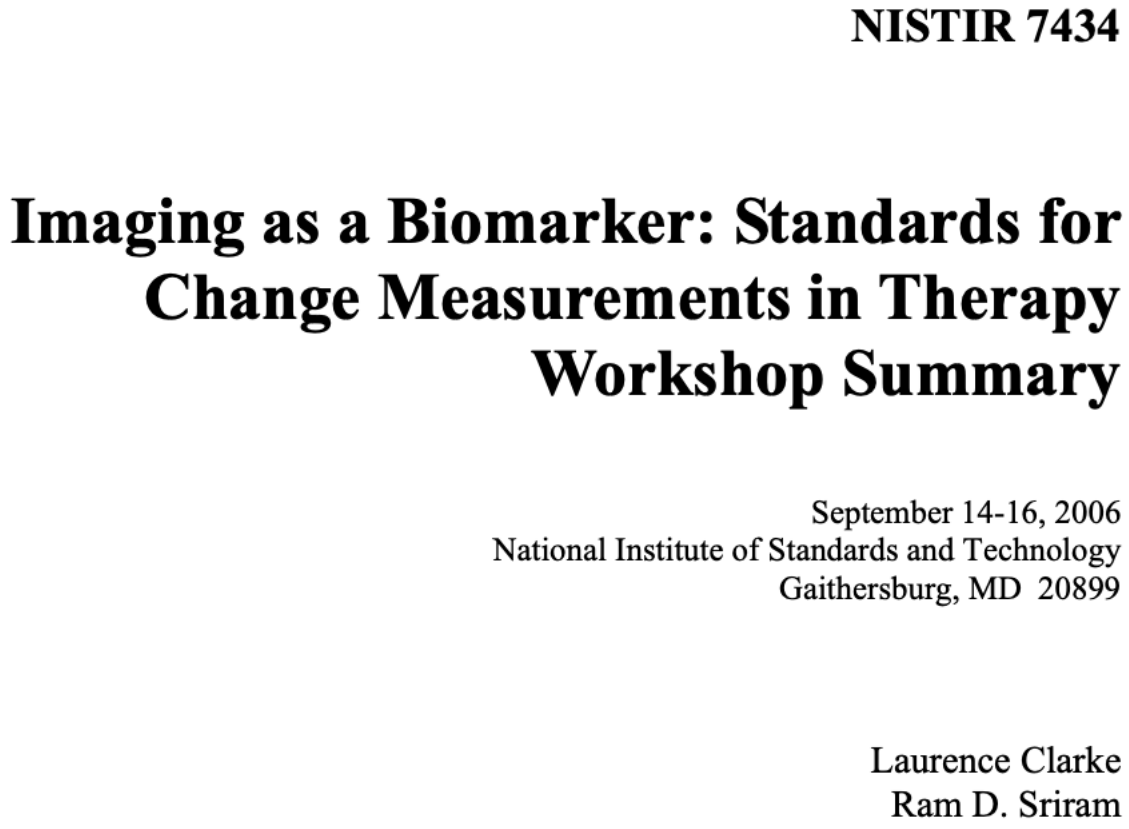


National Institute of Standards and Technology
U.S. Department of Commerce

# September 2006 to September 2026

**Expectation of reference objects and understanding of measurement accuracy and precision**

- Grant applications, journal articles
- Validation of new imaging methods
- Submissions to FDA
- Collaboration across government agencies
- NCI QIN and others
- RSNA QIBA and others
- FDA's Biomarker Qualification Program



NISTIR 7434

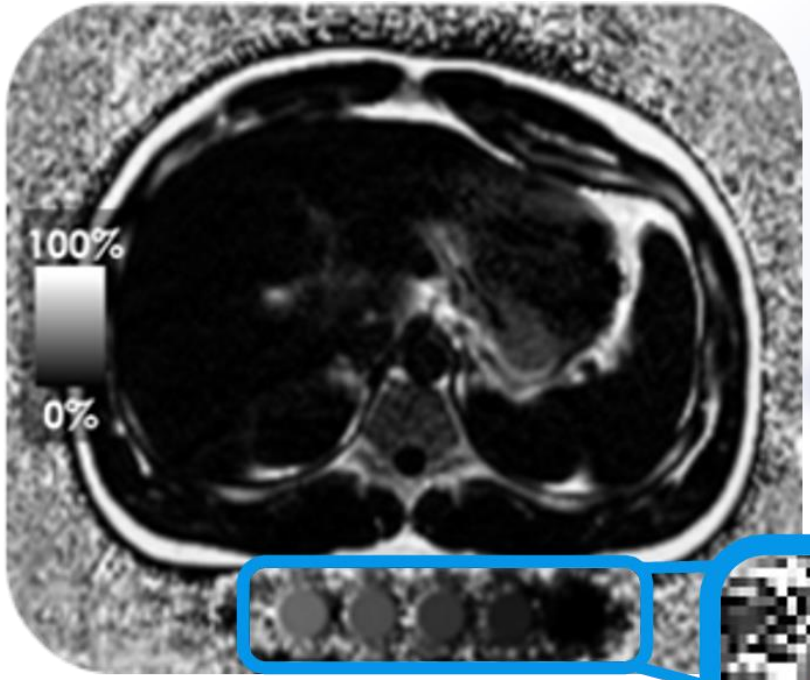
**Imaging as a Biomarker: Standards for Change Measurements in Therapy Workshop Summary**

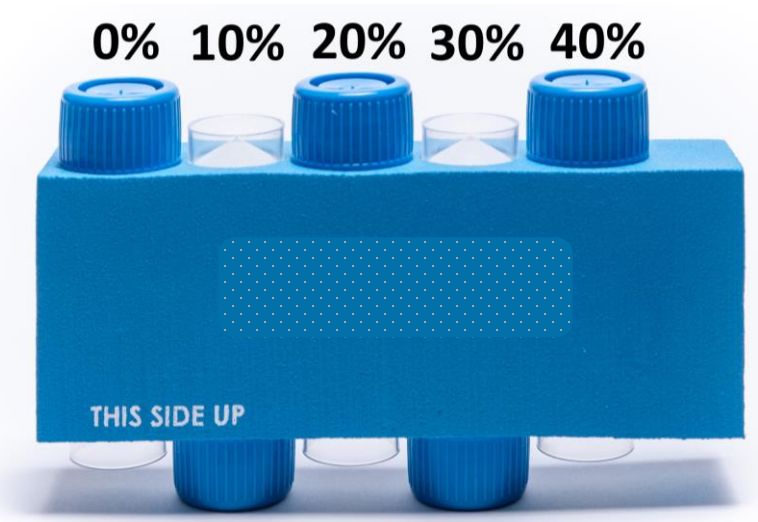
September 14-16, 2006
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Gaithersburg, MD 20899

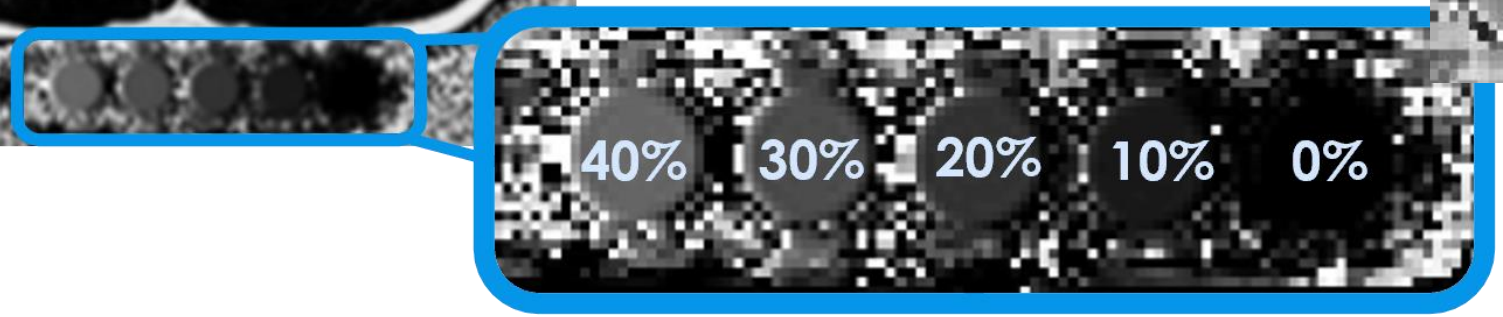
Laurence Clarke
Ram D. Sriram

# Clinical trials use phantoms

## Liver Fat Fraction

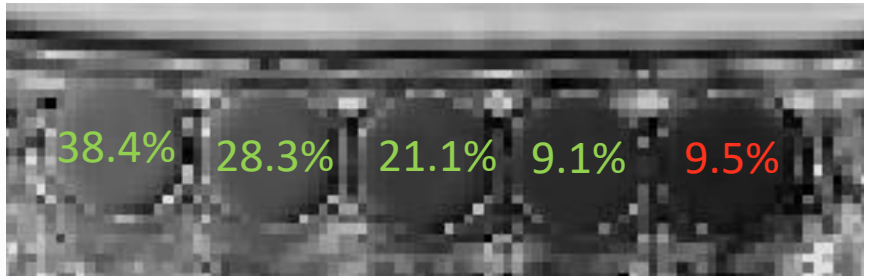


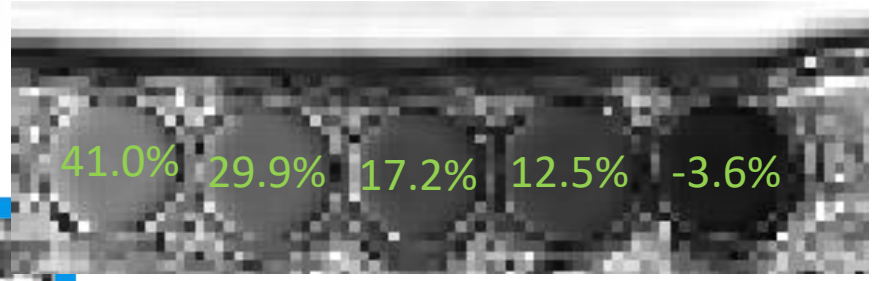




Nominal Values

Inadequate acquisition (failed)




Correct acquisition (passed)




Keenan et al, MAGMA 2024

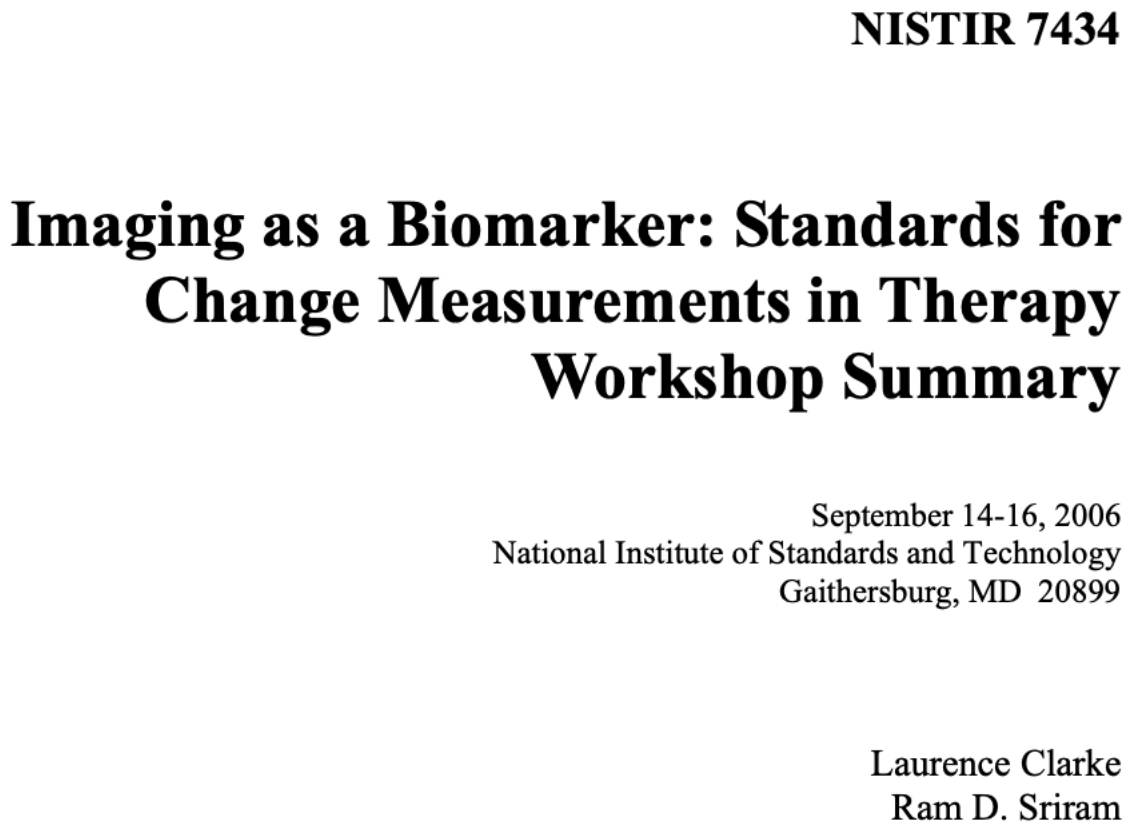
# September 2006 to September 2026

## Created an ecosystem of Medical Imaging Metrology

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# From September 2026 to the future

- Standards in Medical Imaging
  - Standard of care
  - Standard procedures
  - Consensus standards: IEEE, AAPM, DICOM, ACR
  - Required safety standards
- Comparability, consistency of measurements
- Enable interoperability and safety
- Improve diagnostics and treatment

***[Descriptive words]* standards**

**Standards support medical imaging innovation and clinical use**

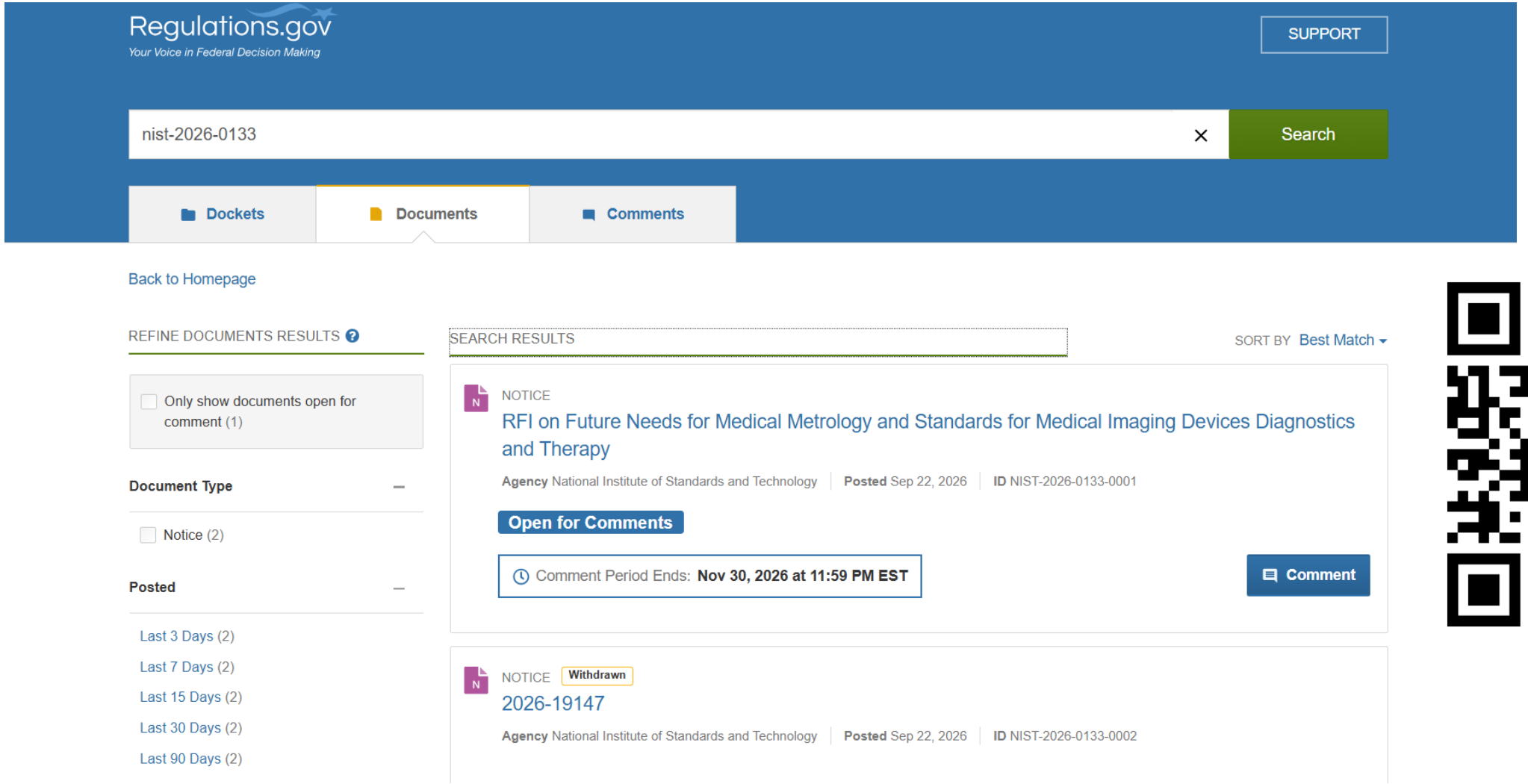
# Starting now

- What benchmarks are needed to drive innovation in medical imaging?
- What tools should the standards community develop to enable data quality understanding and creation of data record?
- How can we serve you to improve healthcare and support industry?

- Share your ideas and respond to the RFI

**New roadmap to set directions for the next 20 years**

# New roadmap to set directions for the next 20 years




regulations.gov/document/NIST-2026-0133-0001