



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

Standards for Quantitative CT and PET Imaging

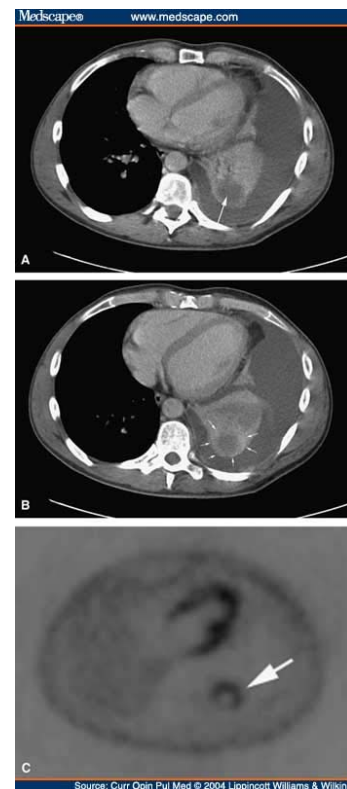
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Chief, Ionizing Radiation Division

NIST

**Do you see it? What is it? Where is it?
Has it changed? What's it up to?
Just how much radiation do I have to get???**

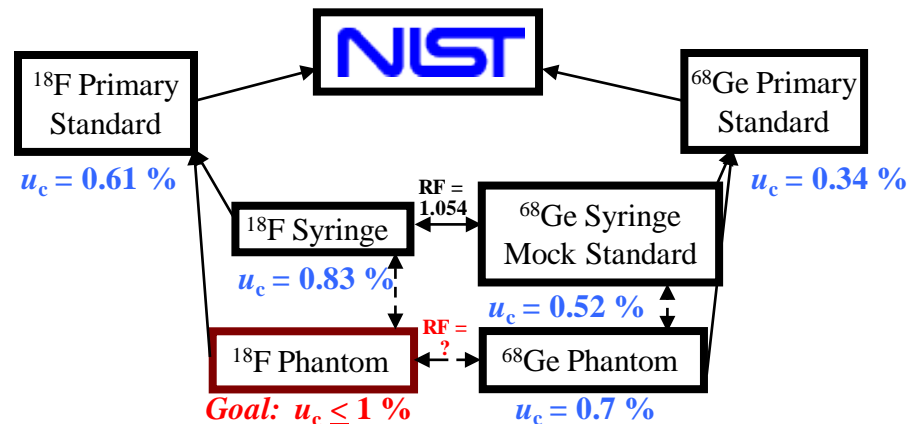
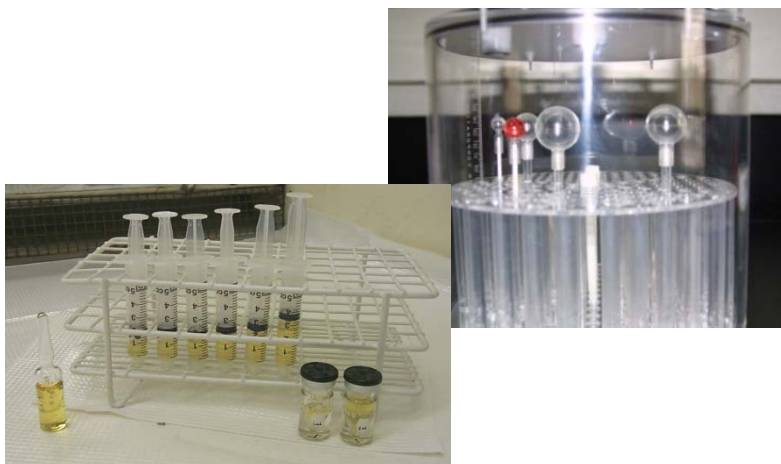
- ✚ *Quantitative* imaging needed for treatment planning, patient evaluation, drug development, clinical trials



NIST *NIST's Response*

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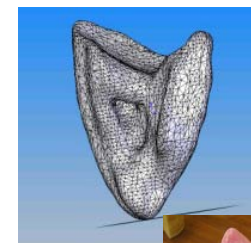
- Small (cm) devices, usable for calibrating medical CT
- Measurement traceability of radioactivity for instrument calibrations
 - New National standards, different geometries
 - Developing anthropomorphic phantoms



NIST *Commercial Applications*

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- Redesigned CT phantom* (looking to evaluate in clinical trial using CT)
- Assessment of dose calibrators in clinical setting**
- Anthropomorphic phantoms for PET and CT to establish a “virtual calibration phantom library”***



Collaborations:

*Cornell University Weill Medical; **RadQual; *** RPI

NIST *Collaboration Opportunities*

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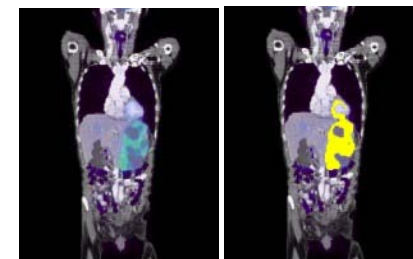
- Planned expansion (DXA, PET/MRI, personalized nuclear medicine, and change analysis)
- Interactions with other agencies and stakeholders to address clinical needs (FDA, NIH, NCI, CIRMS)
- Established and growing laboratory facilities for
 - Guest researcher opportunities (visiting scientist)
 - Technical discussions, combined “problem solving”
 - Cooperative research (“CRADA”)
 - Measurement traceability and SRMs in-place
 - Planned acquisition of PET/CT scanner
- Long-standing international interactions



radioactivity



contrast



“closing the loop”

✚ For further information contact:

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