# Image Archives

## Where are they? What's next?

## Lung Cancer Workshop

May 2 - 3, 2011

NIST Biochange:
Charles Fenimore, John Lu, Jim Filliben

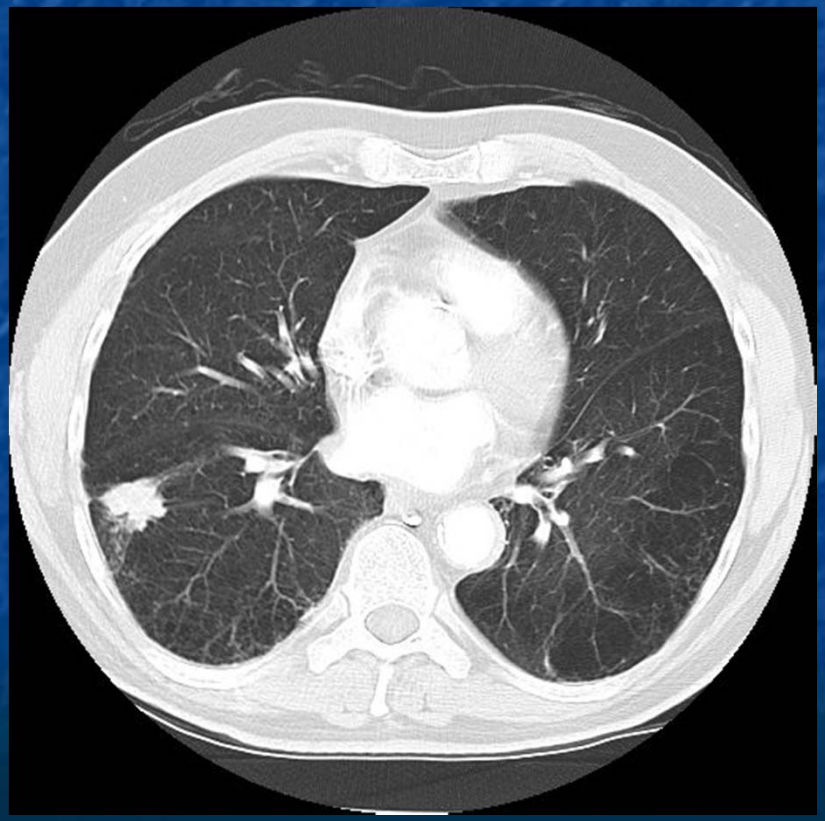
# Publicly available archives

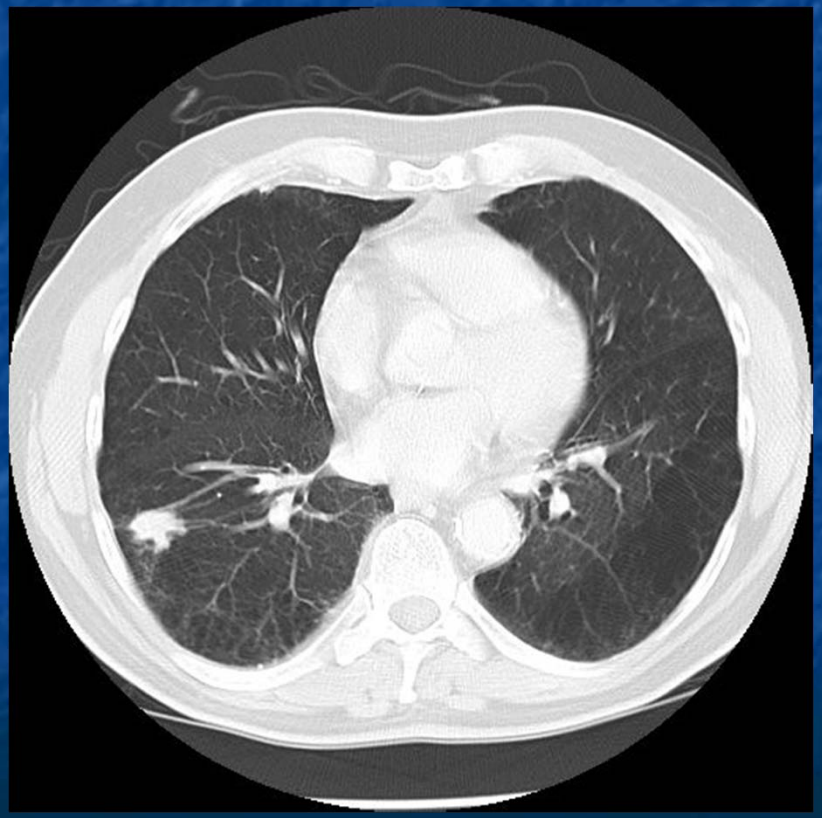
- NBIA collections
  - Used in biochange benchmarking challenges
  - Growing with additions from FDA & QIBA
- IELCAP / Cornell / Mount Sinai
  - Volcano ’09
- Give-A-Scan
- Potential – NLST imagery, NELSON trial, Pharma contributions, QIN

# NBIA collections

- Growing with QIBA
- Public access
  - CT Colonography ACRIN
  - CT - LIDC (public) + IDRI (limited access)
  - NCRI (National Cancer Research Institute) – MR (NHS pilot)
  - Phantom - University of Washington Public
  - CT Phantom, FDA Public
  - QIBA DCE-MRI - ~5 Supplying Sites and 1 Analysis site. Limited
  - RIDER (MSKCC, MDACC, UWashington, Duke, UMichigan) (322 patients)
  - CT - Roswell Strong (ROSWELL-STRONG)
  - MR - TCGA Henry Ford, USCF
  - VASARI TJU, Henry Ford
  - Virtual Colonoscopy WRAMC, San Diego

# Use of RIDER in Biochange Challenge Single Slices from Validation CTs



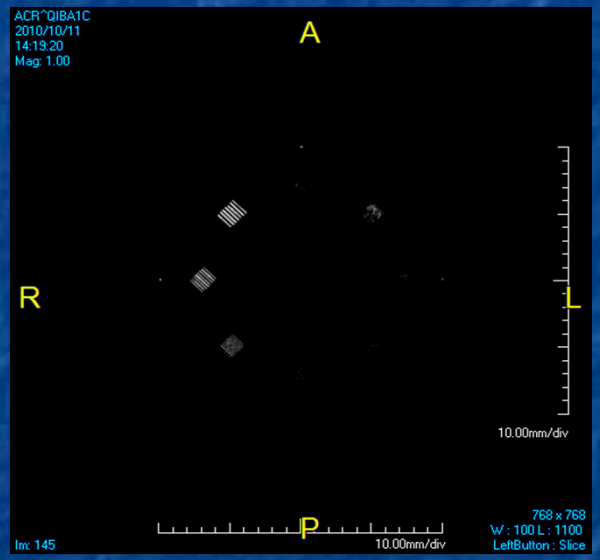


# New phantom imagery
# QIBA vCT 1C

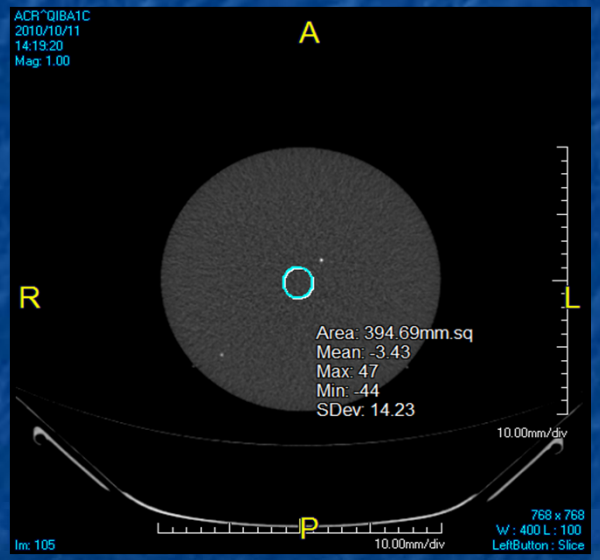
- Develop and apply two arms of the Imaging Protocol
  - ACRIN Study (6678)
  - Quality-based protocol: Aim is constant image quality across scanners
- Image anthropomorphic phantom at five imaging sites
  - 5 sites with 5 scanners from 4 manufacturers
  - Phantom to have 12 nodules with spherical and spiculated shapes
- Clinicians measure synthetic nodules
  - Semi-automated 3-D volume & derived 1- & 2-D sizing
- Analysis
  - Variability between scanners, arms of protocol & sizing measures
  - Inter-reader variation

# QIBA vCT 1C

- Determining the image quality/performance-Based arm of protocol, device-independence




Target: 6 lp/mm




Target; 17 ± 1HU

# QIBA 1C Groundwork

- Scanners
  - GE VCT 64, Philips Brilliance 16, Philips Brilliance 64, Siemens Sensation 64, Toshiba Aquilion
- Status
  - Anthropomorphic phantom data and Gammex CT phantom data collect on all scanners – 210 series
  - Reader study under development

# QIBA 1C sample imagery