Mayo Clinic Urolithiasis O’Brien Grant Imaging Core

Director: Cynthia H. McCollough, PhD
Purpose of Imaging Core ...

• Provide five key functions in support of Mayo’s O’Brien Urology Cooperative Research Center
• Directly support Projects 1, 2, and 3
  – Provide support for pilot projects, when applicable
• Four key functions:
  – 1) Dual-energy CT scanning of specimens or patients
  – 2) Dual-energy CT analyses using custom software
  – 3) Spectral CT scanning of ex-vivo specimens
  – 4) Coordination of micro-CT scanning with Dr. Jim Williams (Indiana University)
In-house developed stone analysis software
In-house software measurements

• Stone volume
• Max stone dimension
• Stone height, width and length
• Dual energy ratio (related to stone type)

• Surface curvature (related to stone type)
**Shape index: Quantifies surface morphology**

**Shape index**

≡ Full width at half maximum

Surface curvature map    Surface curvature histogram
For additional information, please visit
http://mayoresearch.mayo.edu/ctcic