



Stony Brook **Medicine**  
*Department of Pathology*

# Research



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Professor and Chief of Cytopathology

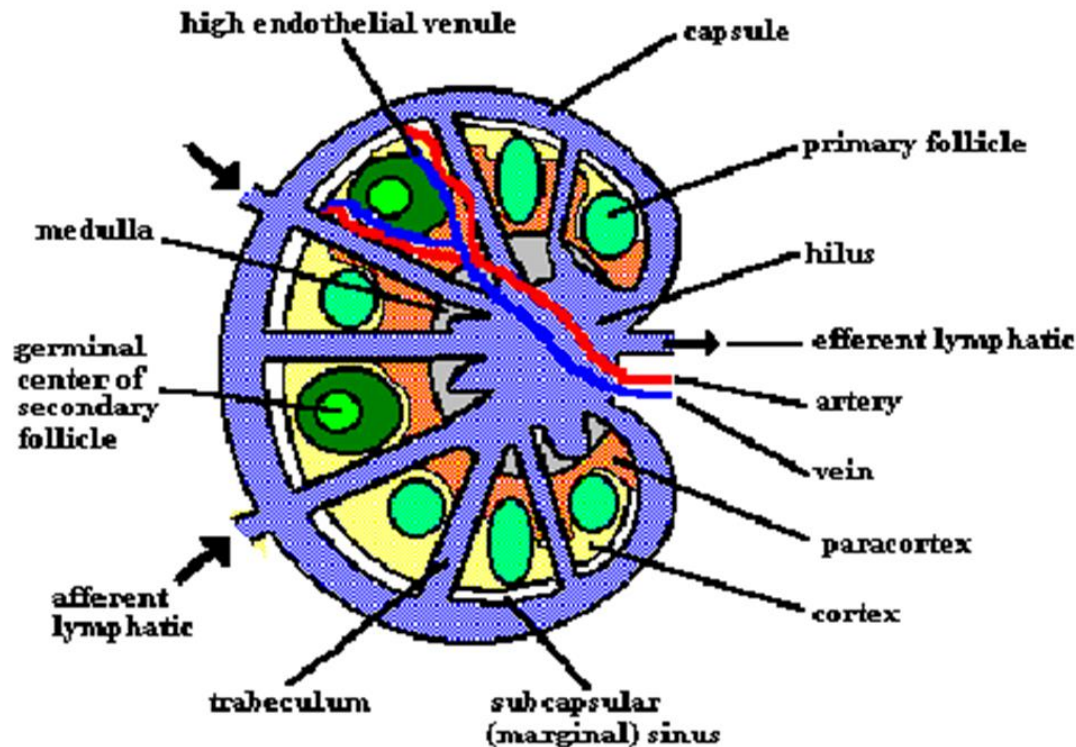
# **Overall Mission Statement**

***To make accurate pathological /medical diagnosis with minute sample using minimally invasive biopsy procedure or with non-invasive techniques***

# Projects

- **Funded Project (5 year grant, NIH R01)**
  - Detection of Metastases in Lymph Nodes Using Quantitative-Ultrasound
- **General Interests:**
  - Molecular Marker Studies with Cytology Samples
  - Live Cell Imaging and Drug Sensitivity Testing from Fine Needle Aspiration (FNA) Biopsy Samples

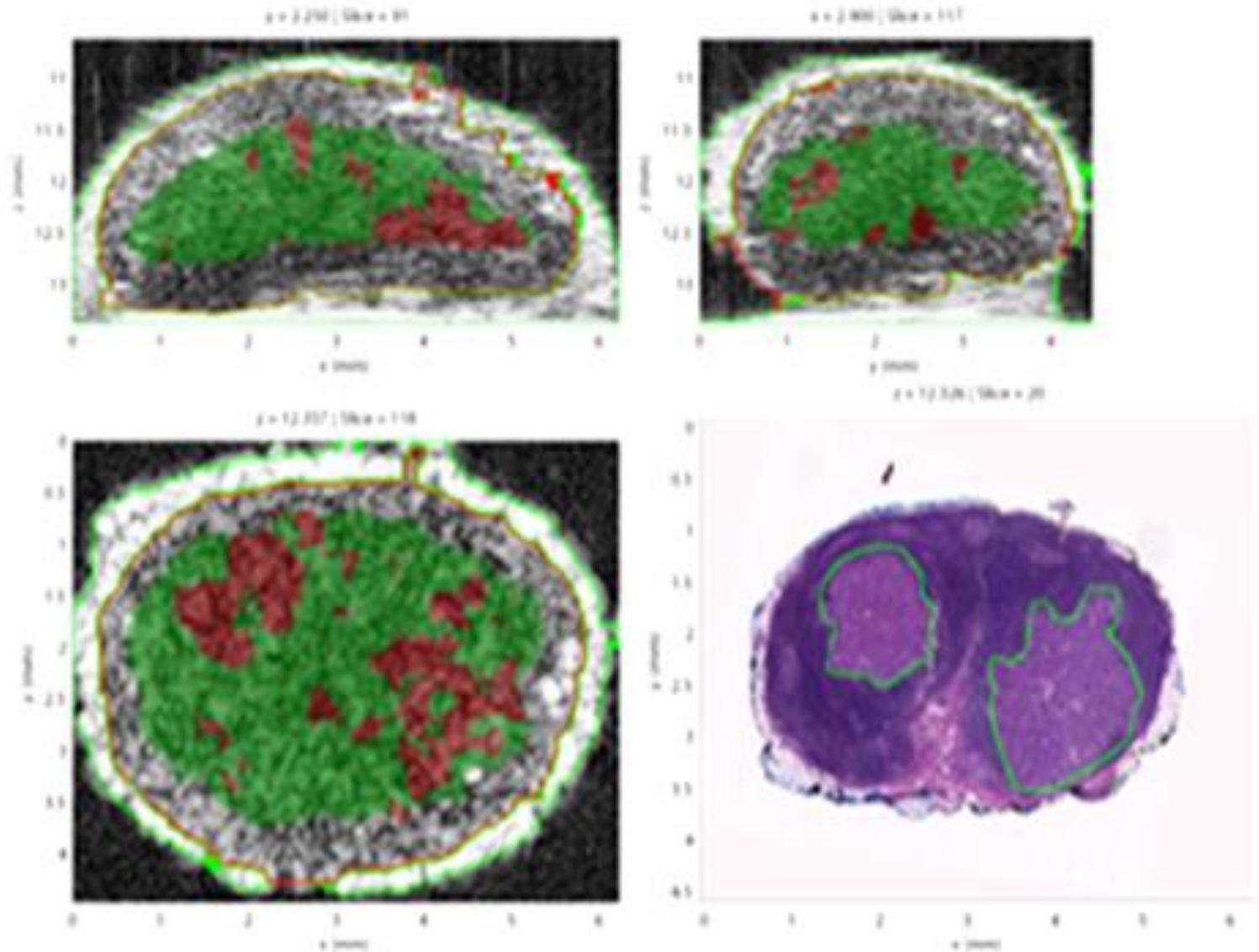
# Detection of Metastases in Lymph Nodes Using Quantitative-Ultrasound



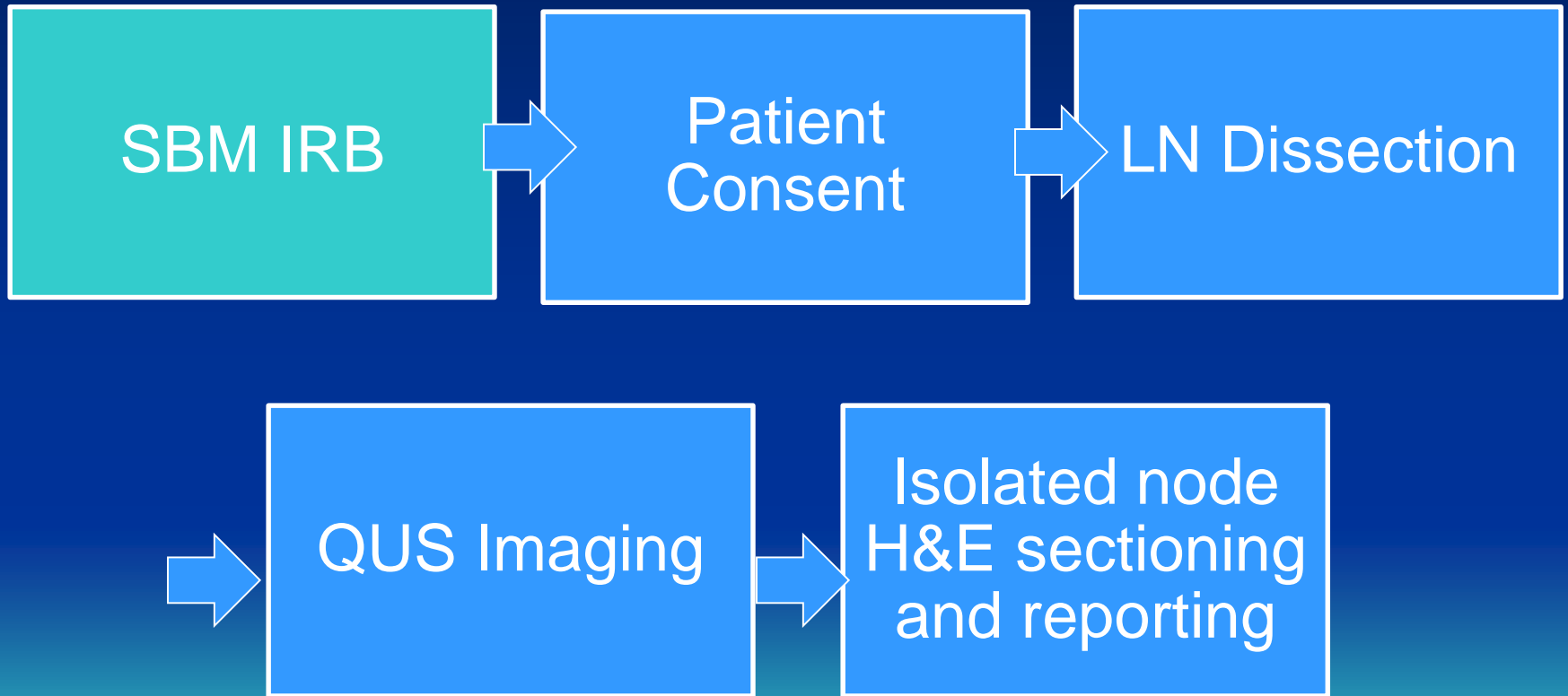
# QUS Scanning Apparatus



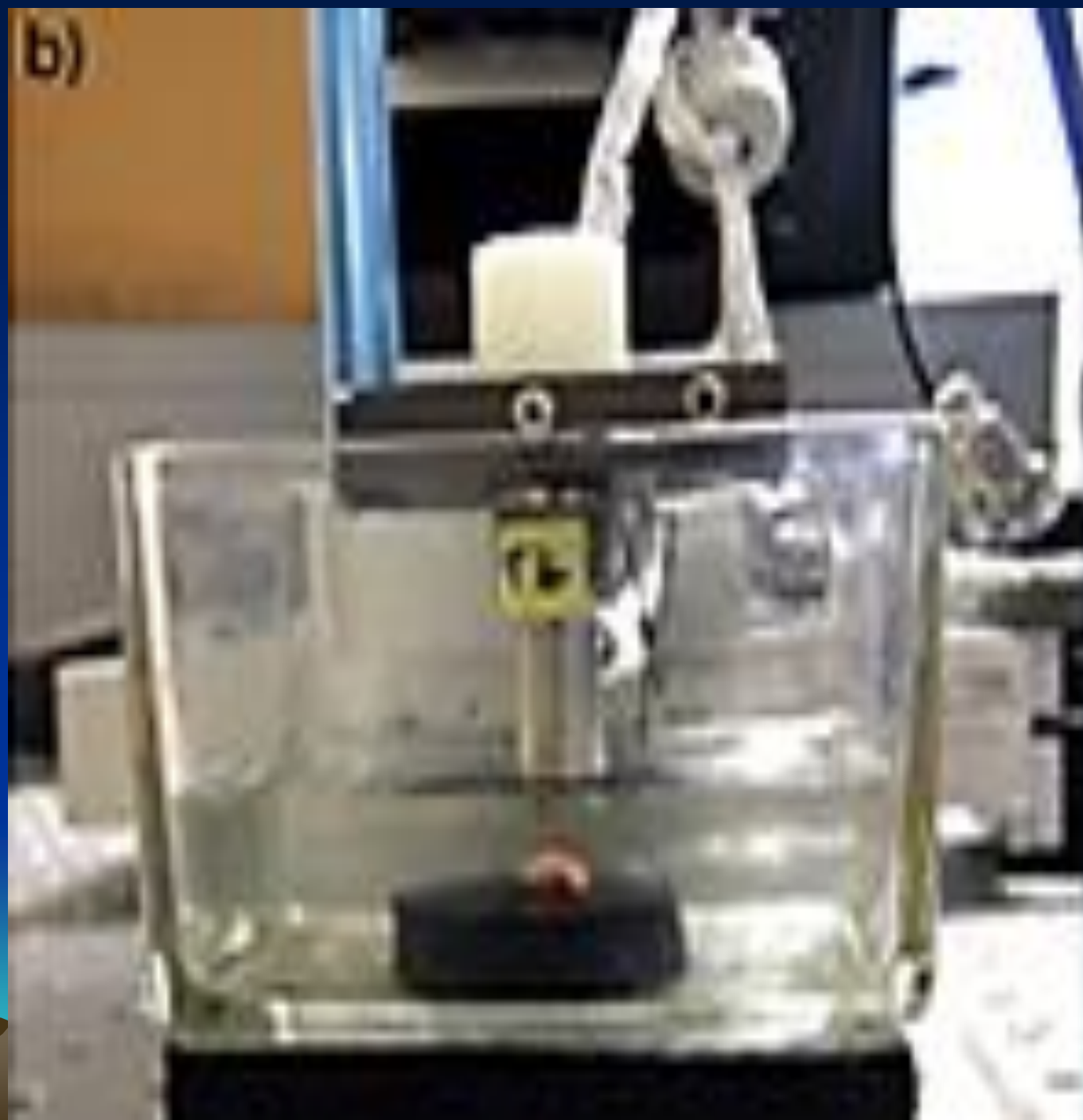
# 3D Depiction of QUS characterized LN showing high probability of cancer in red; matching histology showing cancer foci



# Phase 1. Isolated Node Study



b)





# Phase 2. To use GE QUS machine to study surgically excised specimen with lymph nodes



# Phase 3. To use GE QUS machine to detect metastasis in Patient's Lymph Nodes



# Cancer Marker Studies for Diagnosis and Treatment using small Cytology Samples by various Modern Technologies

- Next Generation Sequencing (NGS)
- Fluorescent In-Situ Hybridization (FISH)
- Immunohistochemical staining (IHC)



# Live Cell Imaging and Drug Sensitivity Testing from FNA Biopsy Samples

- [http://www.essenbioscience.com/essen-products/incucyte/?gclid=CLKWg\\_nEyMoCFc4XHwodZOIK0Q](http://www.essenbioscience.com/essen-products/incucyte/?gclid=CLKWg_nEyMoCFc4XHwodZOIK0Q)

