


CENTER FOR
CANCER
RESEARCH

Connecting the Cancer Community






• Innovative Science


• Breakthrough Therapies

• Clinical Advances

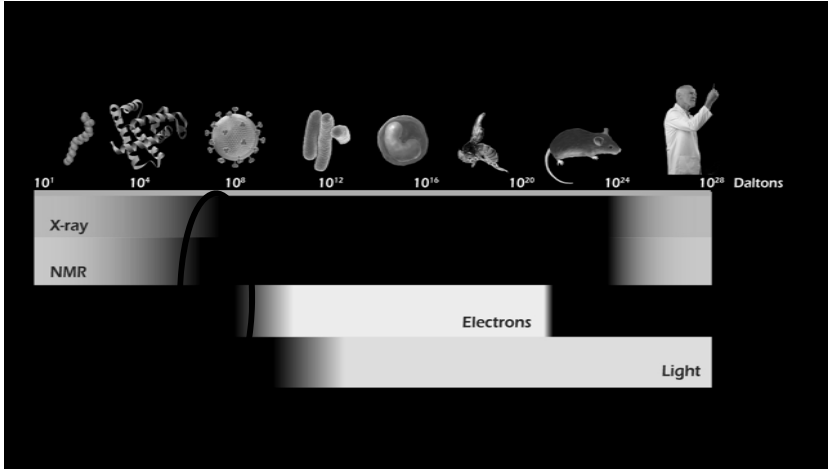
**Nanoscale Diagnostics for Cancer using Ion
Abrasion Scanning Electron Microscopy**

Sriram Subramaniam
September 25, 2007

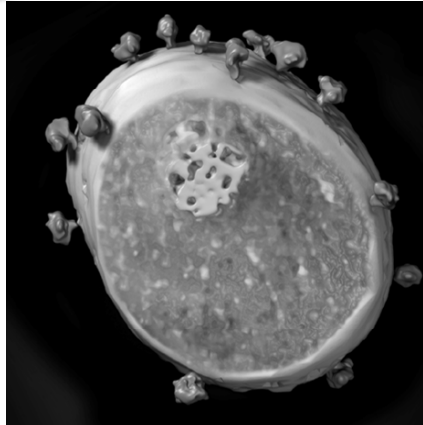


Bridging the imaging gap

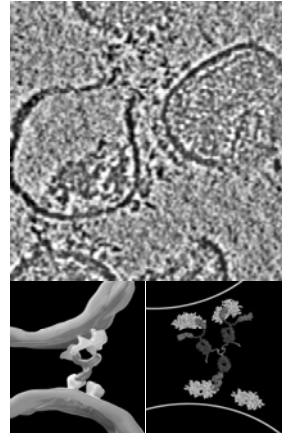


with 3D electron microscopy

Imaging retroviruses at molecular resolution with electron tomography

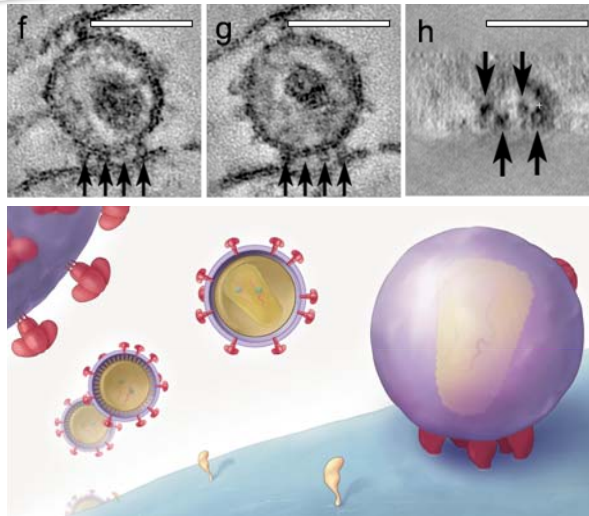


Complex Architecture of Immunodeficiency Viruses

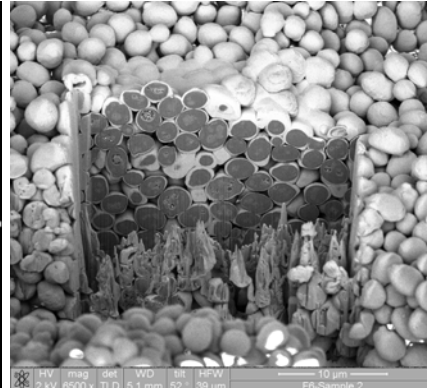
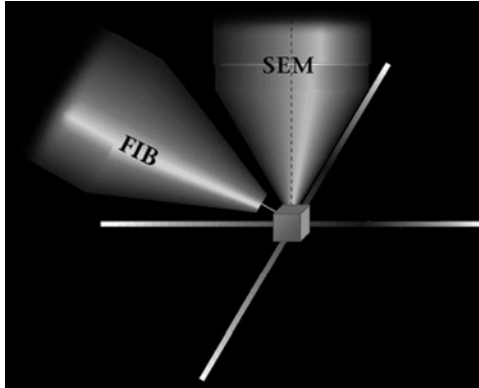


Molecular footprint of AIDS virus neutralization

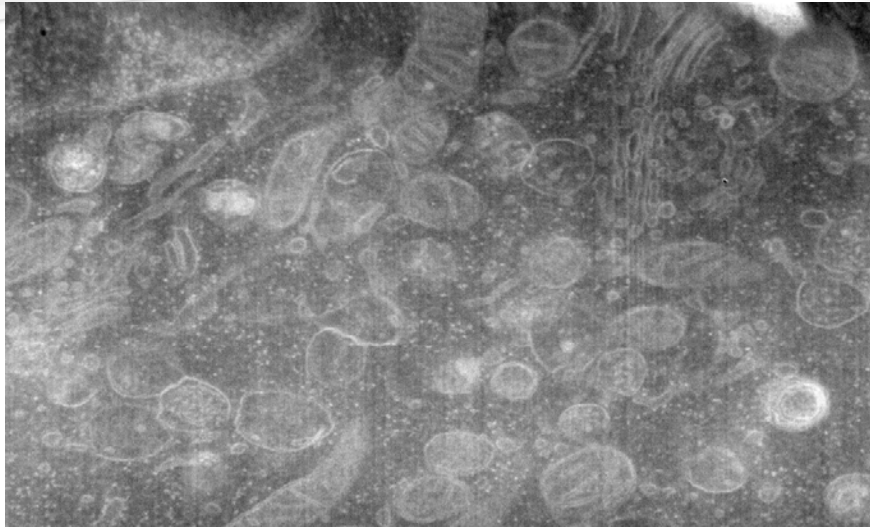
The HIV entry claw



Ion-abrasion scanning electron microscopy



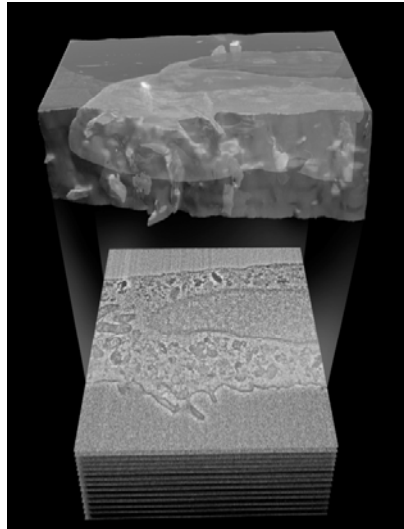
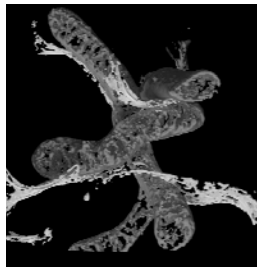
3D imaging of melanoma cells at 30 nm resolution



Mapping distribution of mitochondria and melanosomes in 3D



QuickTime™ and a
Sony Vegas 2 decompressor
are needed to see this picture.



Applications



- **Vaccine design**
- **Structure derived entry inhibitors**
- **Mapping drug and protein distribution in 3D**
- **Structural markers for cancer**
- **Mitochondrial profiling**

Contact Information

**Sriram Subramaniam
Bldg. 50, Rm. 4306
Laboratory of Cell Biology
Center for Cancer Research
National Cancer Institute, NIH
Bethesda, MD 20892**

**Tel: 301 594 2062
Fax: 301 480 3834
E-mail: ss1@nih.gov
Web:
<http://electron.nci.nih.gov>**

