



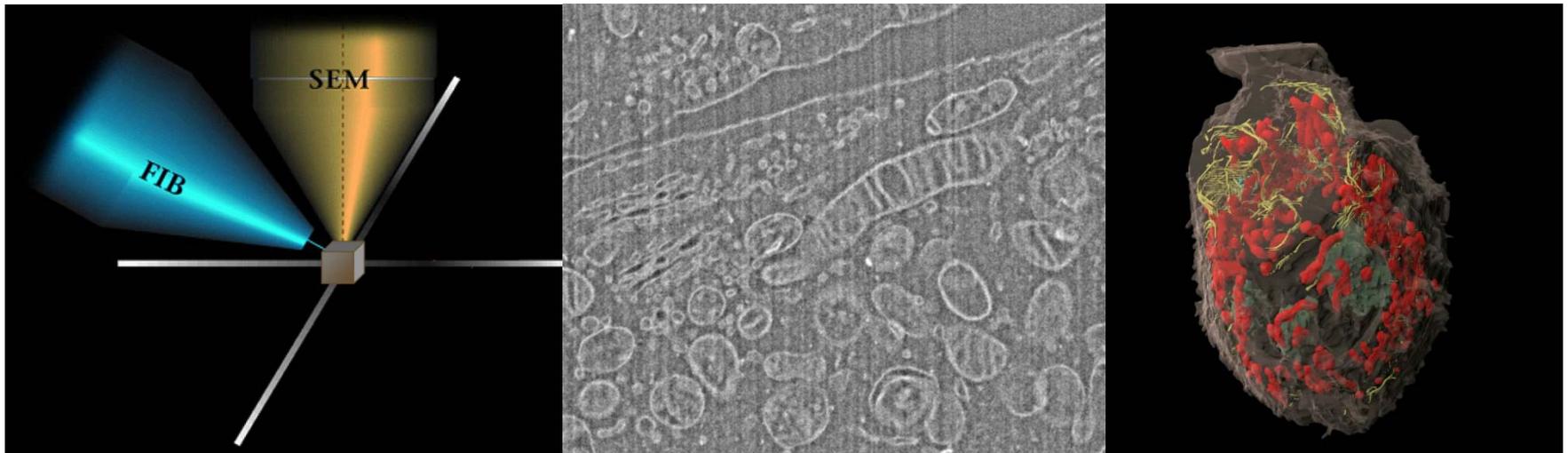
# *Compositional Mapping of Cells and Viruses at Molecular Resolution*

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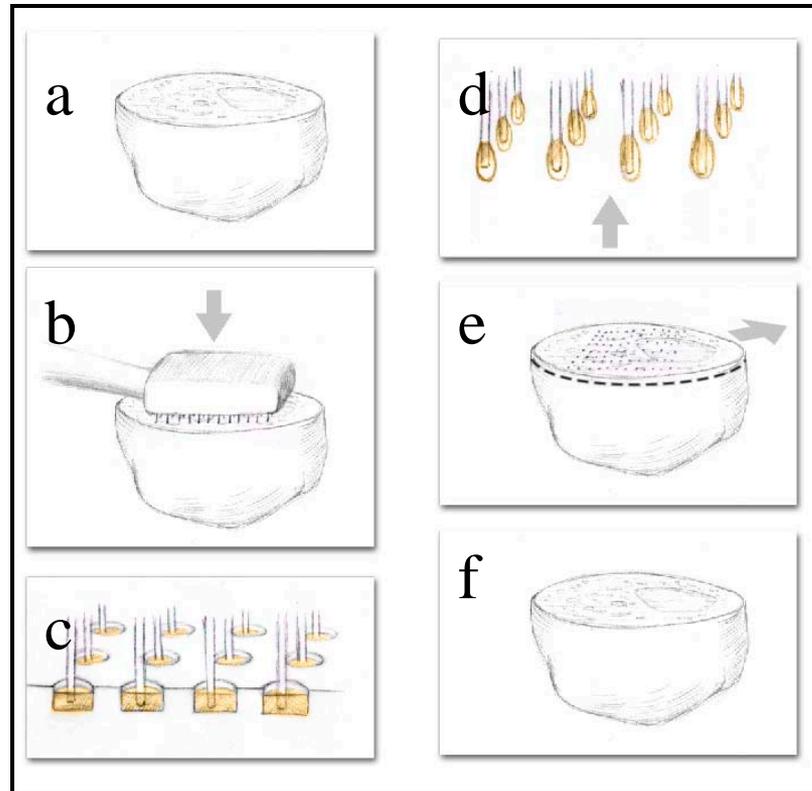
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# *Nanoscale 3D mapping of cellular composition*

The challenge: To develop technologies for rapid 3D mapping of protein and drug localization in cells that combine the high spatial resolutions achievable with electron and light microscopy with the high sensitivity of mass spectrometry



# “Slice-and-dice”: A novel approach to compositional mapping



*S. Subramaniam; provisional patent filed;  
60/970,070 and 60/974,686 filed Sept. 2007*

# *Commercial Applications*

- ➊ Recent advances in technology for 3D cellular imaging using light and electron microscopy can be combined with advances in mass spectrometry to develop robust, automated technologies for the site-specific mapping of cellular architecture at molecular resolution.
- ➋ The development of such technologies could have a profound impact on drug discovery by allowing rapid localization of drugs and their cellular targets, and on methods for protein capture combined with structural analysis at molecular resolution.

# Technology

## Advantages

- Ability to rapidly create three-dimensional cellular images
- Ability to map cells and tissues at nanometer resolution

## Further R&D Needed

- Development of commercially-viable three-dimensional protein mapping

## R&D Status

- Pilot experiments are ongoing for the development and optimization of the technology using commercially available components. Clinical applications for the diagnosis of tissue specimens are also being explored

# Contact Information

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