Image and Meaning 2005 Application

Lydia Jablonski, Scientific Graphic Artist
Molecular Probes Labeling and Detection Technologies
Invitrogen Corporation
29851 Willow Creek Road
Eugene, OR 97402, USA
phone: +1 541-335-0364
lydia.jablonski@invitrogen.com

Background

I am a graphic artist with a background in fine arts and physics and specialize in 3D modeling, and animation. I work with R&D scientists (Cell Biology, Microbiology, Genomics, Proteomics) to create figures and animations that explain scientific concepts and procedures associated with our products.

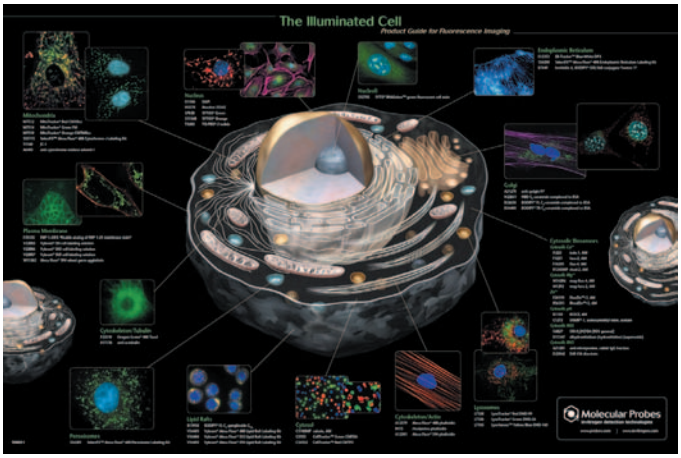


Figure 1. "The Illuminated Cell", 20" x 30" glossy poster

General Challenges

How does an artist judge the accuracy of a scientific image? An artist can face a range of opinions from scientists. Some scientists understand the need to maintain clarity, but others insist that every piece of information be included in the piece. Between complexity and oversimplification, information can be lost or misrepresented.

Specific Challenges

1. How do you represent the dynamic range of a fluorescence image in a presentation when you are limited by the dynamic range of the projector used? Adjusting levels on the image itself can make 10-20% intensity differences finally perceptible on the screen, but doesn't this defeat the point of showing a subtle difference? 2. When there is controversy on how a step in process actually happens, is it OK to do some animation-hand waving (zoom out, speed up, fade in/fade out) during this step? 3. Do you represent something as it really looks according anatomical dissection or electron micrographs? Or do you use shorthand symbols and idealized representations (sometimes misleading or downright wrong) because that is the convention and what the audience expects?

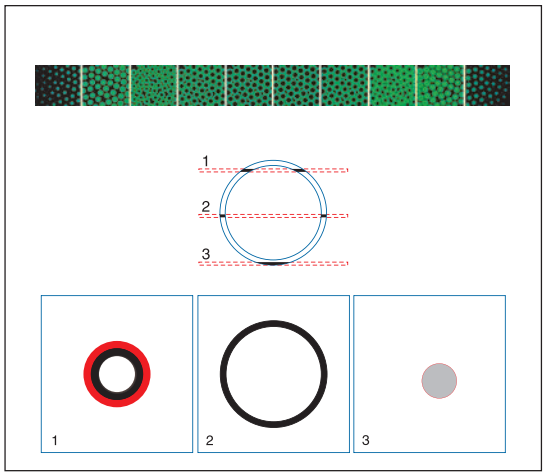
Example Image

I created the detailed 3D model of a cell that is used as the centerpiece Figure 1. The insets on the poster showing the range of fluorescent images created with our products help to associate products with cell organelles that they label, stain and visualize.

Problematic Image

Figure 2 (top half) tries to show how the diameter of the fluorescent ring seen in the microscope is dependent on the depth of the optical focal plane, however showing only orthogonal views obscures the reason for the change in ring diameter and thickness. My redesign of the figure is shown at the bottom.

Problematic Figure



Redesigned Figure

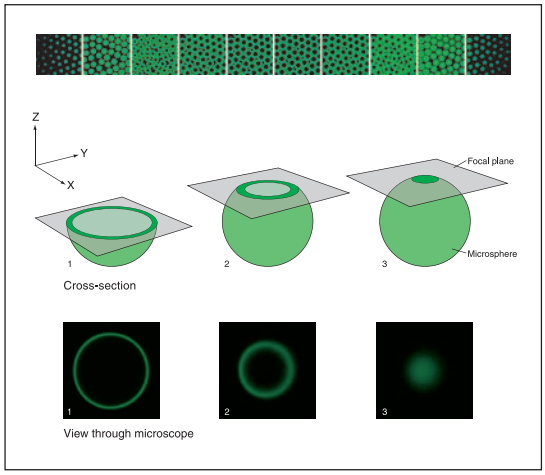


Figure 2. Serial optical sectioning along z-axis of ring-stained microspheres, revealing a continuous pattern of disc-to-ring-to-disc images