



2005 Visualization Challenge

Some of science's most powerful statements are not made in words. From the diagrams of DaVinci to Hooke's microscopic bestiary, the beaks of Darwin's finches, Rosalind Franklin's x-rays, or the latest photographic marvels retrieved from the remotest galactic outback, visualization of research has a long and literally illustrious history. To illustrate is, etymologically and actually, to enlighten.

You can *do* science without graphics. But it's very difficult to *communicate* it in the absence of pictures. Indeed, some insights can only be made widely comprehensible as images. How many people would have heard of fractal geometry or the double helix or solar flares or synaptic morphology or the cosmic microwave background if they had been described solely in words?

To the general public, whose support sustains the global research enterprise, these and scores of other indispensable concepts exist chiefly as images. They become part of the essential iconic lexicon. And they serve as a source of excitement and motivation for the next generation of researchers.

The National Science Foundation (NSF) and *Science* created the Science and Engineering Visualization Challenge to celebrate that grand tradition—and to encourage its continued growth. In a world where science literacy is dismayingly rare, illustrations provide the most immediate and influential connection between scientists and other citizens, and the best hope for nurturing popular interest. Indeed, they are now a necessity for public understanding of research developments: In an increasingly graphics-oriented culture, where people acquire the majority of their news from TV and the World Wide Web, a story without a vivid and intriguing image is often no story at all.

We urge you and your colleagues to contribute to the next competition, details of which will be available on NSF's Web site (www.nsf.gov), and to join us in congratulating the winners.

Susan Mason of NSF organized this year's challenge; Carolyn Gramling of *Science*'s news staff wrote the text that accompanies the winning images displayed in the following pages; and *Science*'s online editor Stewart Wills put together a special Web presentation at www.sciencemag.org/sciext/vis2005. In addition, Graham Johnson, who won first place in the Illustration category, is profiled on *Science*'s Next Wave (www.nextwave.org).

Curt Suplee, Director, Office of Legislative and Public Affairs, NSF
Monica Bradford, Executive Editor, *Science*



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PANEL OF JUDGES (left to right)

Gary Lees

Chair and Director,
Department of Arts as Applied to Medicine
Johns Hopkins University
Baltimore, Maryland

Thomas Lucas

Thomas Lucas Productions
New York, New York

Felice Frankel

Research Scientist,
Massachusetts Institute of Technology
Cambridge, Massachusetts

Donna J. Cox

Professor, School of Art & Design
University of Illinois, Urbana-Champaign

Michael Keegan

Assistant Managing Editor, News Art
The Washington Post
Washington, D.C.

