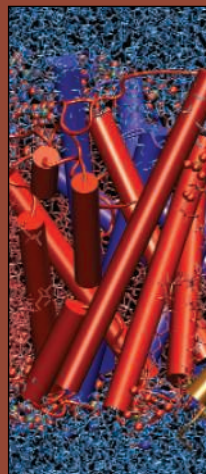
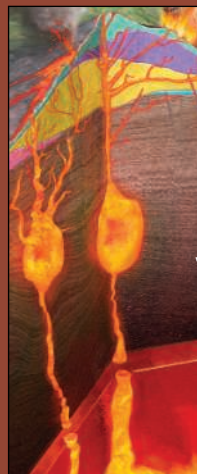


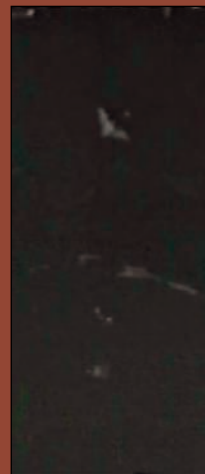
Photography



Illustration



Informational Graphics



Multimedia



### PANEL OF JUDGES

#### Donna J. Cox

Professor, School of Art and Design,  
University of Illinois, Urbana-  
Champaign  
*Specialist in three-dimensional  
computer animation*

#### Felice Frankel

Research Scientist, Massachusetts  
Institute of Technology, Cambridge  
*Science photographer and director,  
Envisioning Science Project*

#### Gary Lees

Chair and Director,  
Department of Art as Applied to  
Medicine, Johns Hopkins University,  
Baltimore, Maryland  
*Specialist in medical illustration*

#### Thomas Lucas

Thomas Lucas Productions,  
New York City  
*Producer of science documentaries*

#### Boyce Rensberger

Director, Knight Science Journalism  
Fellowships, MIT  
*Science journalist formerly  
at The Washington Post and  
The New York Times*

## 2004 VISUALIZATION CHALLENGE

A multicolored deer tick latched onto the ear of a hamster ... water molecules shuttling across a cell membrane ... a bat's sonar locking onto its prey ... the cauldron of Mount Etna getting ready to rumble. The following pages bring to life intricate interactions, from the workings of cells to the geological processes that threaten cities. These stunning visualizations won top honors in the second Science and Engineering Visualization Challenge, co-sponsored by *Science* and the National Science Foundation (NSF).

We launched this annual international competition last year to showcase and encourage an increasingly important aspect of science: the ability to convey the essence and excitement of research in digitized images, color diagrams, and even multimedia presentations. Investigators at the outermost frontiers of science and engineering frequently study phenomena that are extremely difficult even for most scientists to visualize—and downright formidable for the general public that ultimately supports the global research enterprise. When that research is depicted vividly and comprehensibly in pictures, everybody benefits.

For this year's challenge, we invited submissions in five categories: photography, illustration, informational graphics, and two kinds of multimedia: interactive and noninteractive. Entries were screened by a committee from NSF and *Science*. Then an independent panel of experts in scientific visualization reviewed the 50 finalists and selected the best, which appear in these pages. (This year, the judges decided not to name an overall winner in interactive graphics in part because they felt that no single entry combined excellent graphics with full interactivity.) We congratulate the winners and all the other entrants.

Susan Mason of NSF organized this year's challenge; David Grimm of *Science's* News staff wrote the text that accompanies the winning images. Stewart Wills of *Science* has put together a special Web presentation, including audiovisual clips, at [www.sciencemag.org/sciext/vis2004](http://www.sciencemag.org/sciext/vis2004). Winning submissions will also be featured at the AAAS annual meeting in February.

Entries for 2005 are being solicited now through announcements in *Science* and on the NSF Web site. We urge all researchers and science communicators to participate in this unique and inspiring competition.

CURT SUPLEE, DIRECTOR, OFFICE OF LEGISLATIVE AND PUBLIC AFFAIRS, NSF  
MONICA BRADFORD, EXECUTIVE EDITOR, *SCIENCE*