

CMPE 466

COMPUTER

GRAPHICS

Chapter 1

A Survey of Graphics Applications

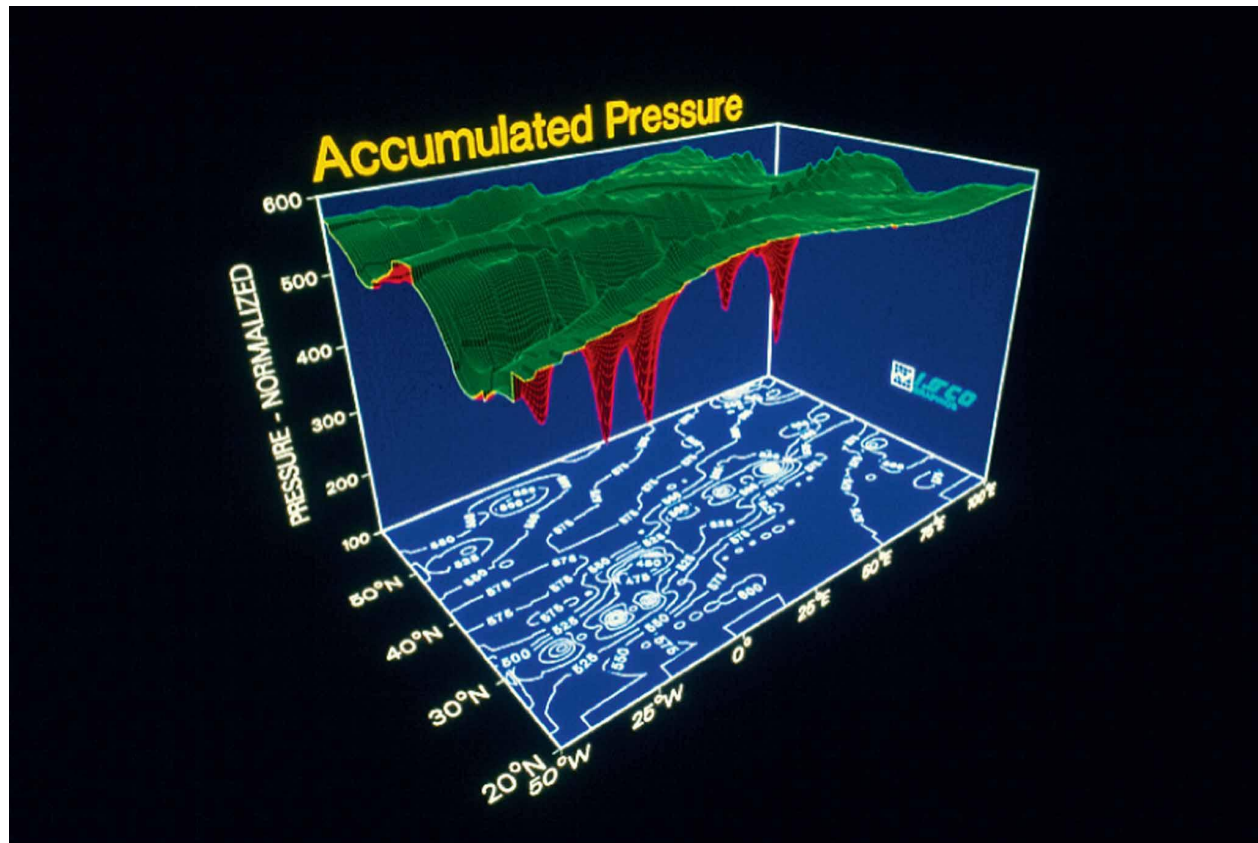
Instructor: D. Arifler

Material based on

- *Computer Graphics with OpenGL*®, Fourth Edition by Donald Hearn, M. Pauline Baker, and Warren R. Carithers
- *Fundamentals of Computer Graphics*, Third Edition by Peter Shirley and Steve Marschner

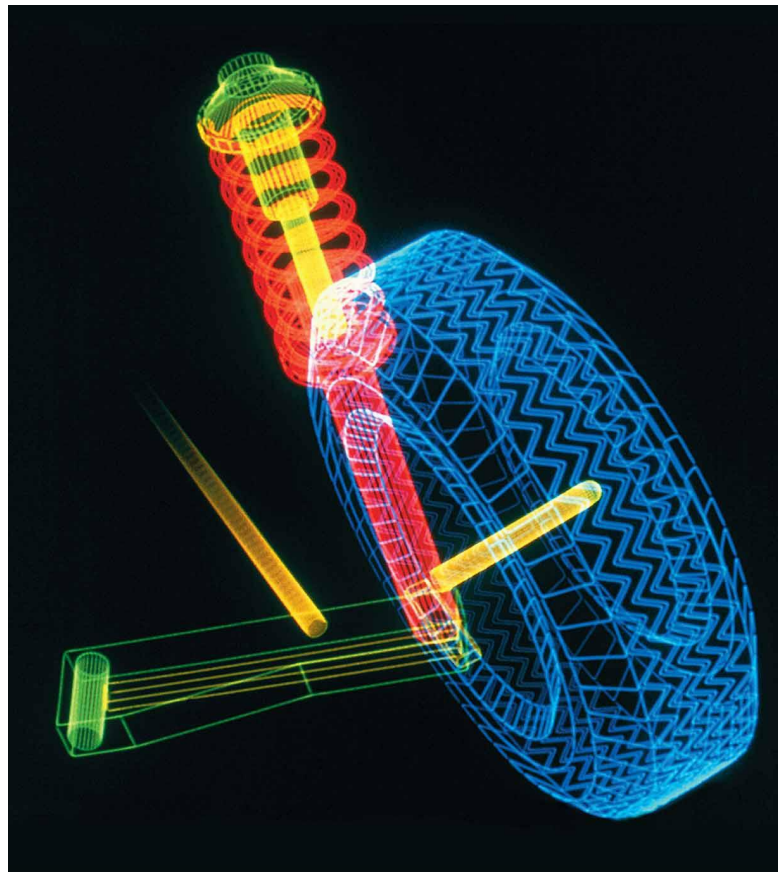
Graphs and charts

Color Plate 1 Plotting two-dimensional contours in a ground plane, with a height field plotted as a surface above the ground plane. (Reprinted with permission from ISSCO Graphics, San Diego, California.)



Computer-aided design

Color Plate 2 Color-coded, wire-frame display for an automobile wheel assembly. (*Courtesy of Evans & Sutherland.*)



Computer-aided design

Color Plate 3 Three-dimensional renderings of building designs. (a) A cross-sectional model of a house with structural problems (*Dorling Kindersley.*) (b) An exterior view of a modern luxury house (*Zastol'skiy Victor Leonidovich/Shutterstock.*)



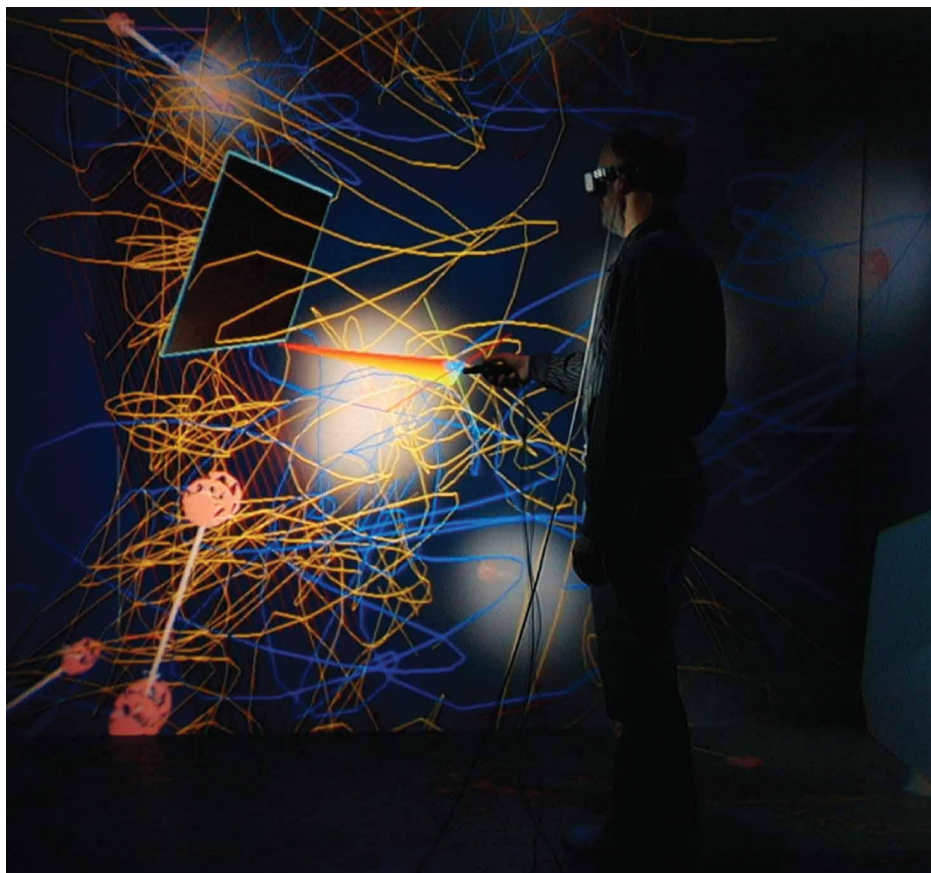
(a)



(b)

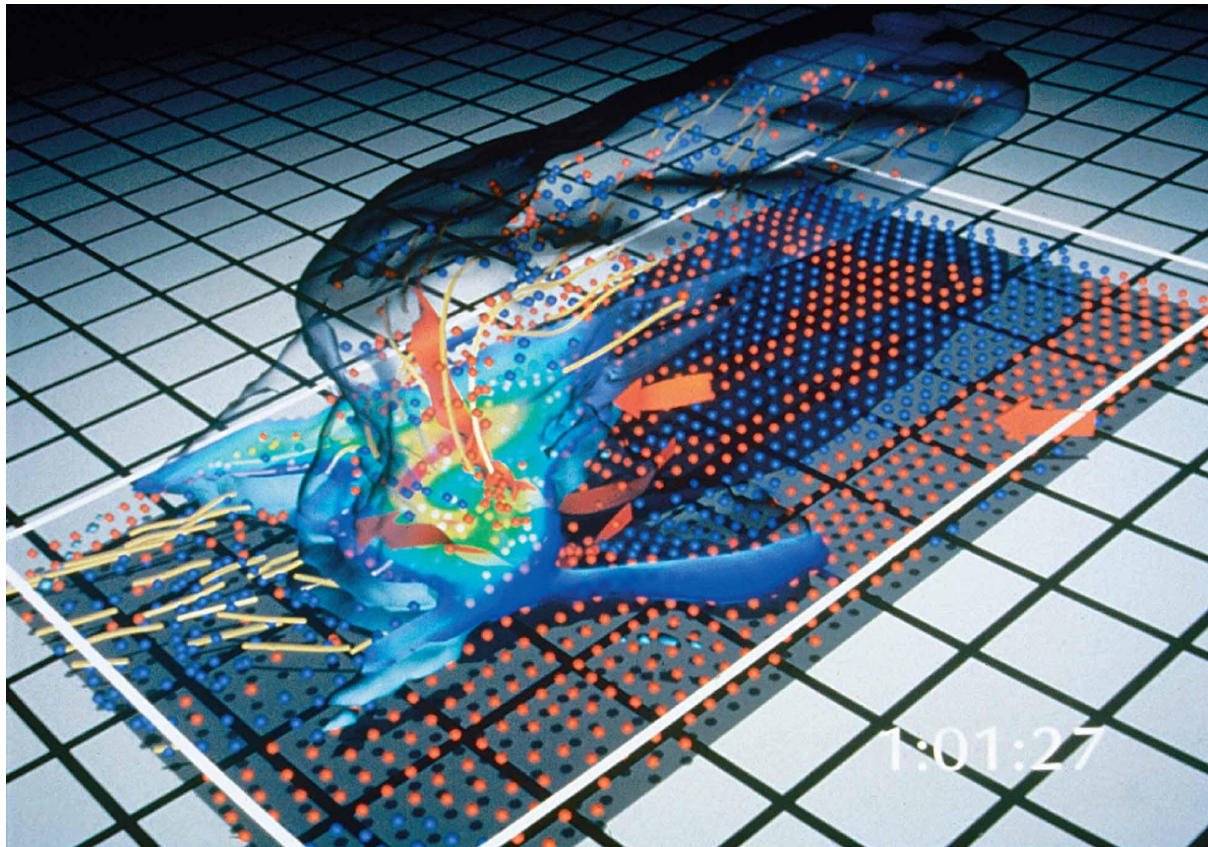
Virtual-reality environments

Color Plate 5 A scientist interacting with stereoscopic views of molecular structures within a virtual-reality environment called the “CAVE.” (Courtesy of the National Center for Supercomputing Applications (NCSA) and the Board of Trustees of the University of Illinois.)



Data visualizations

Color Plate 4 Numerical model of airflow inside a thunderstorm. (Courtesy of the National Center for Supercomputing Applications (NCSA) and the Board of Trustees of the University of Illinois.)



Education and training



<http://www.x-plane.com>

Computer art

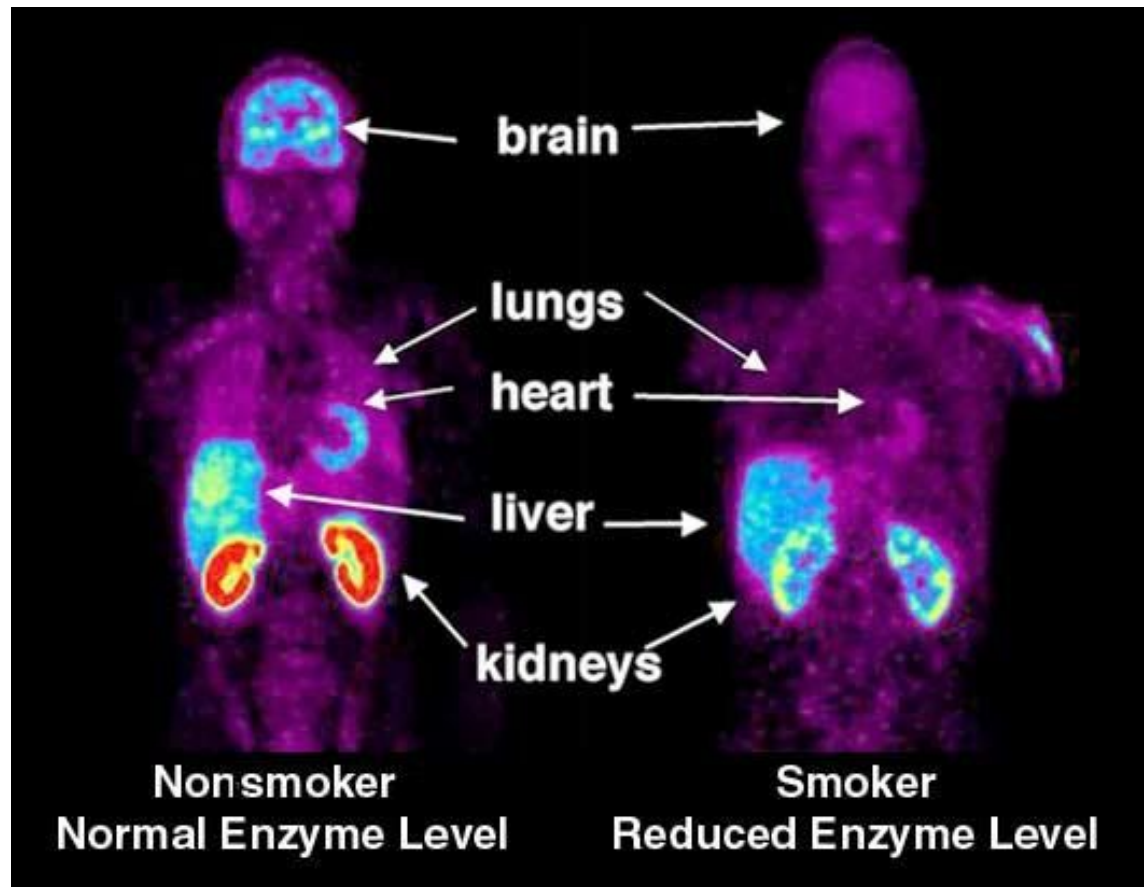
Color Plate 6 An electronic watercolor, painted by John Derry of Time Arts, Inc., using a cordless, pressure-sensitive stylus and Lumena gouache-brush software. (*Courtesy of John Derry. Reprinted by permission of the artist.*)



Entertainment



Image processing



<http://imagebank.nih.com>

Graphical user interfaces



<http://www.apple.com>