CMPE 466 COMPUTER GRAPHICS

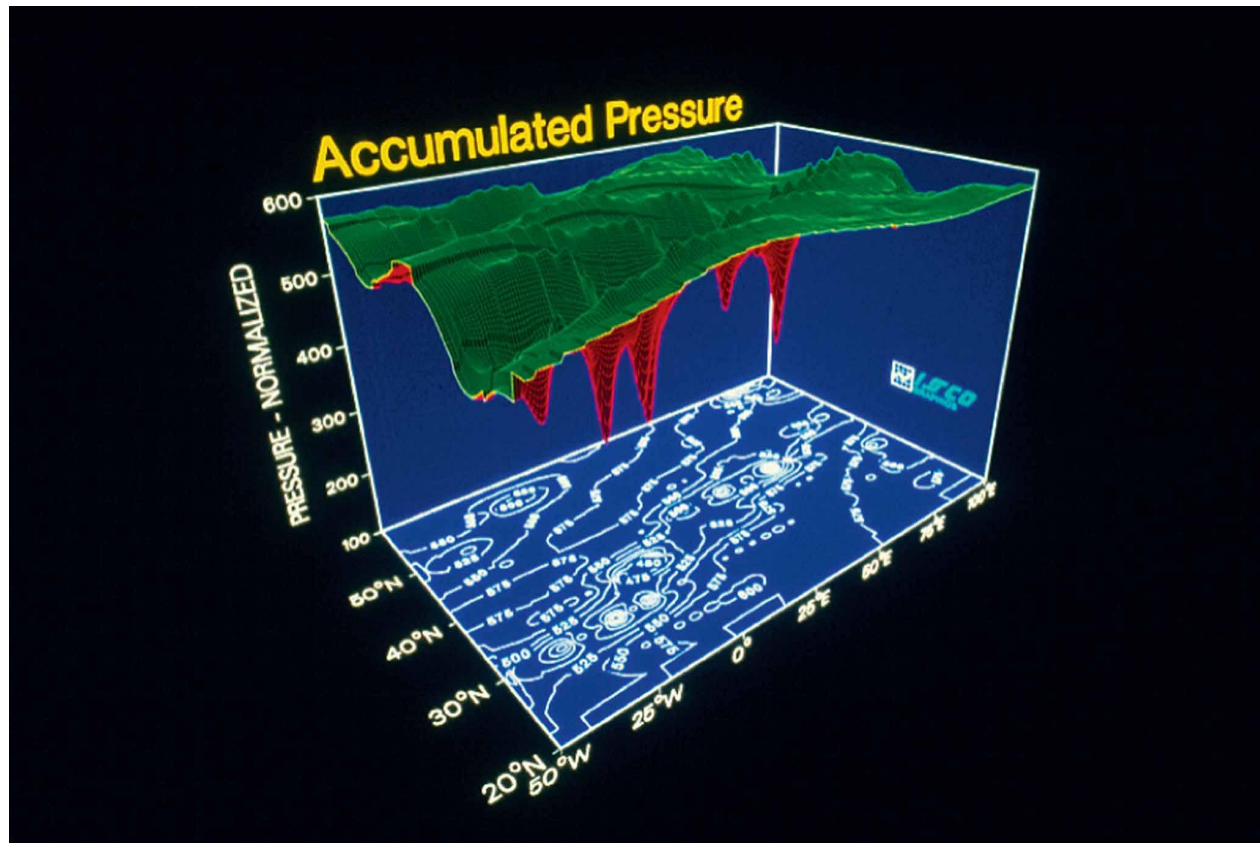Chapter 1

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
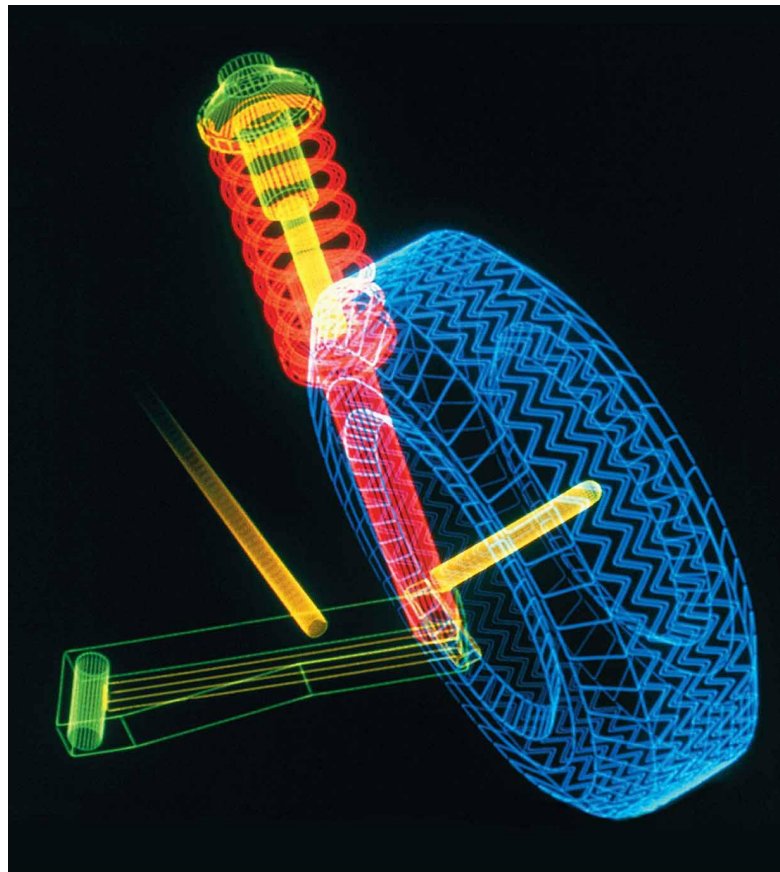- *Fundamentals of Computer Graphics*, Third Edition by by Peter Shirley and Steve Marschner

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.*)
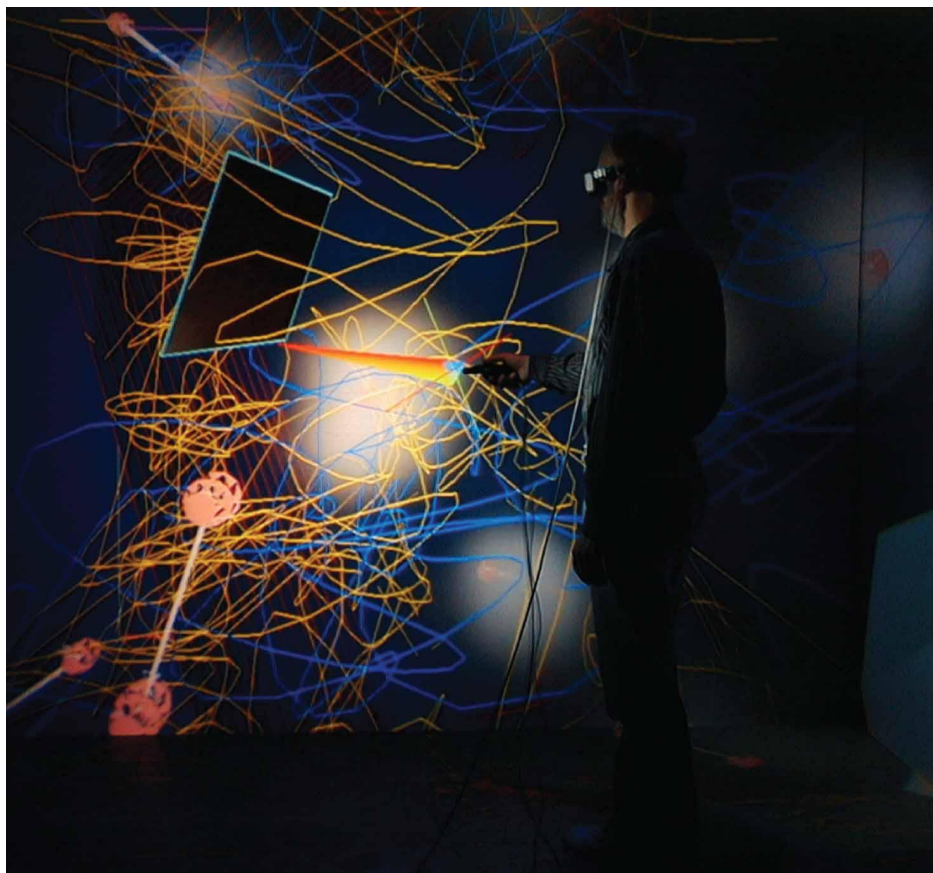

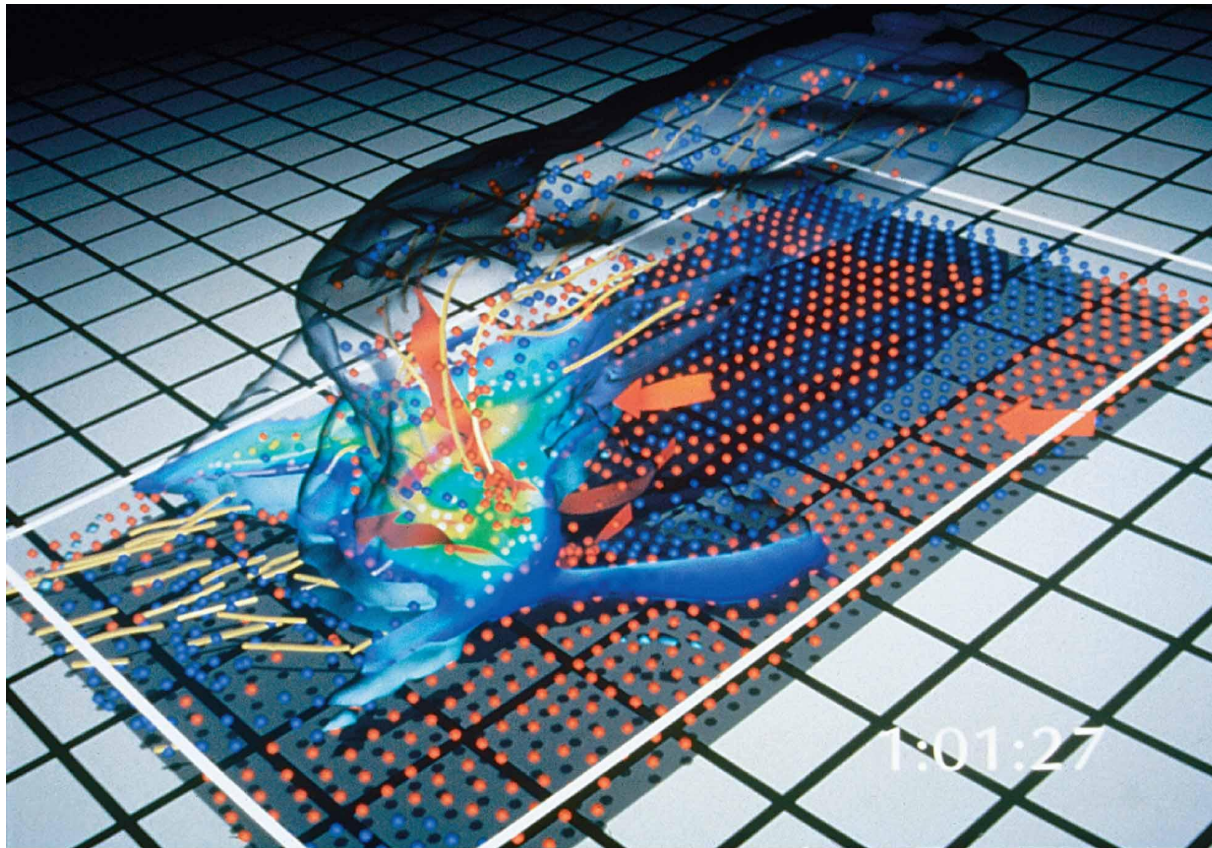(a)

(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.*)
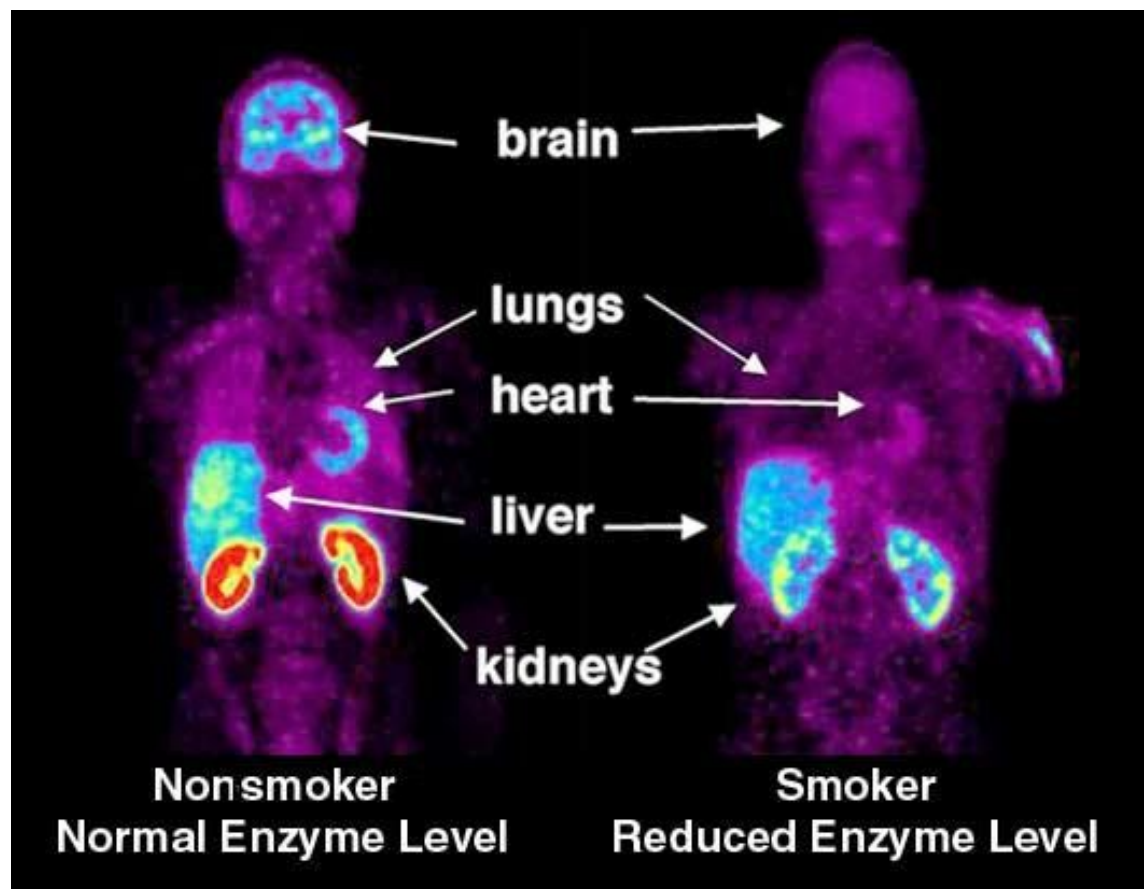
Entertainment

Image processing

http://imagebank.nih.com

Graphical user interfaces

http://www.apple.com