



### **Real-Time Simulation in the Real World**

*Chair:* Zsuzsanna Molnar (Silicon Graphics, Inc.)

*Panelists:* Pieter Buning (NASA Ames Research Center)  
Peter Doenges (Evans and Sutherland Computer Corporation)  
Robert Langridge (University of California, San Francisco)  
Tom Lasinski (NASA Ames Research Center)  
Randy Smith (SRI International)

Flight simulation was the first well-known real-time simulation application using computer graphics. New computer architectures, combined with fast interactive graphics, extend the scope of simulation to encompass ever more realistic visual simulation as well as the modeling of objects and processes: computer prototyping. Panelists will discuss evolutionary trends, costs and effectiveness of real-time simulation citing examples from flight simulation, drug design, wind tunnel simulation, the testing of on-the-road car behavior and robotics.

### **Fundamental Algorithms: Retrospect and Prospect**

*Chair:* Rae A. Earnshaw (George Washington Univ. and the Univ. of Leeds)

*Panelists:* James H. Clark (Stanford University and Silicon Graphics, Inc.)  
A. Robin Forrest (University of East Anglia)  
Robert D. Parslow (Brunel University)  
David F. Rogers (U.S. Naval Academy)

Many advances and innovations have been made since the earliest line generation algorithm formulated by Bresenham in 1963. Extensions have been devised to allow the generation of arcs, conics and curves, and the exploitation of gray scale and color. Solutions to the aliasing problem have been devised; good quality pictures can now be produced on inexpensive displays. More recently, a study of program transformations has suggested new ways for the automatic generation of algorithms. Current progress will be reviewed and possible new developments and advances will be discussed.