CONFERENCE PROGRAM SIGGRAPH

SIGGRAPH '77
July 20-22, 1977
San Jose Hyatt House

WEDNESDAY, July 20	THURSDAY, July 21	FRIDAY, July 22
		GRAPHICS RESEARCH Mediterranean Center 8 - 9:30 AM
APPLICATIONS Mediterranean Center 8:30 - 10 AM	**STATUS REPORT OF THE GRAPHIC STANDARDS PLANNING COMMITTEE OF THE ACM/SIGGRAPH** Mediterranean Center 8:30 - 11:30 AM	**DATA BASE GRAPHICS** Mediterranean Center 9:30 - 10:15 AM
GRAPHIC LANGUAGES Mediterranean Center 10:15 - 11:15 AM		**ALGORITHMS** Mediterranean Center 10:30 AM - 12:15 PM
VISUAL DYNAMICS Mediterranean Center 11:15 AM - 12 Noon		
LUNCHEON & FASHION SHOW Poolside 12 Noon - 1:45 PM	**POSTER SESSION** Mediterranean Center 12:45 - 2:15 PM	**TUTORIALS** Mediterranean Center 1:15 - 2:15 PM
RECENT DEVELOPMENTS IN RASTER SCAN GRAPHICS Mediterranean Center 1:45 - 3:15 PM	**3-D INPUT TECHNIQUES** Mediterranean Center 2:15 - 3:15 PM	**EDUCATION** Mediterranean Center 2:15 - 3:15 PM
BUSINESS Mediterranean Center 3:30 - 4:30 PM	**CARTOGRAPHY** Mediterranean Center 3:30 - 5:00 PM	**LOW COST COMPUTER GRAPHICS** Mediterranean Center 3:30 - 6 PM
ANIMATION Mediterranean Center 4:30 - 5:30 PM		
	RECEPTION & BARBECUE Poolside and Plaza del Oro 6 - 8:30 PM	
MEDIA SPECTACULAR Mediterranean Center 8:30 - 10:30 PM	**ACM/SIGGRAPH BUSINESS MEETING** Governor's House 8:30 - 10 PM	

VENDOR EXHIBITS: The exhibitor area, located in the Mediterranean Center, will be open Wednesday and Thursday, 10 AM - 6 PM, and Friday, 9 AM - 12 Noon. Please feel free to wander in at your leisure and peruse the latest and greatest in graphics hardware equipment.

CONFERENCE PAPER PRESENTATIONS

APPLICATIONS
D. Kasik, Batelle Columbus Labs
Wednesday, July 20, 8:30 AM

"ECOSITE: An Application of Computer-Aided Design to the Composition of Landforms for Reclamation," R. Mallary and M. Ferraro, University of Massachusetts

"Graphical Pre- and Post-Processors for 2-Dimensional Finite Element Method Programs," F. T. Tracy, Department of the Army, Waterways Experiment Station

"CASS - Computer Assisted Stereotaxic Surgery," P. A. Hawrylyshyn, R. R. Tasker and L. W. Organ, University of Toronto

GRAPHIC LANGUAGES
A. P. Lucido, Ohio State University
Wednesday, July 20, 10:15 AM

"Association of Graphic Images and Dynamic Attributes," S. Bergman and A. Kaufman, Ben-Gurion University

"Language for a Design Information System," C. Eastman and M. Henrion, Carnegie-Mellon University

VISUAL DYNAMICS
Wednesday, July 20, 11:15 AM

Opening session remarks by S. R. Levine, General Conference Chairperson, Lawrence Livermore Laboratory and J. George, Program Chairperson, Los Alamos Scientific Laboratory

RECENT DEVELOPMENTS IN RASTER SCAN GRAPHICS
W. Newman, Xerox Palo Alto Research Center
Wednesday, July 20, 1:45 PM

Panelists

"On the Realism of Digitally Synthesized Images," M. Newell, Xerox Palo Alto Research Center

"Real Time Digital Image Generation," N. Szabo, Link Division, Singer Corporation

"Raster Displays and Sampled Images," J. Maleson, University of Rochester

"High Quality Computer Animation," E. Catmull, New York Institute of Technology

BUSINESS
J. S. Potts, Social Security Admin.
Wednesday, July 20, 3:30 PM

"Interactive Graphics: An Aid to Health Planning and Decision Making," C. G. Willard and J. R. Hamann, University of Minnesota

"Computer Graphics for Facilities Management," N. V. Renfrow, Cost, Planning and Management International, Inc.

"Interactive Analysis and Display of Tabular Data," W. H. Benson and B. Kitous, Lawrence Berkeley Laboratory

ANIMATION
C. Csuri, Ohio State University
Wednesday, July 20, 4:30 PM

"ANIMA II: A 3-D Color Animation System," R. J. Hackathorn, Ohio State University

"A Color Animation System Based on the Multiplane Technique," M. Levoy, Cornell University

"Real-Time Playback in Animation Systems," M. J. Potel, University of Chicago

STATUS REPORT OF THE GRAPHIC STANDARDS PLANNING COMMITTEE OF ACM/SIGGRAPH
B. Herzog, University of Colorado and R. Dunn, U. S. Army Electronics Command
Thursday, July 21, 8:30 AM

"Introduction," R. Dunn, U. S. Army Electronics Command

"State-of-the-Art of Graphic Software Packages," R. Ewald, Los Alamos Scientific Laboratory, and R. Fryer, Department of the Navy

"Report on Methodology," W. Newman, Xerox Palo Alto Research Center

"Interface Considerations," R. Puk, Sandia Laboratories

"Report on Core Functions and Issues," J. D. Foley, Census Bureau, and R. D. Bergeron, University of New Hampshire

"Evaluation of the Core Using Criteria Developed by the State-of-the-Art Evaluation," R. Ewald, Los Alamos Scientific Laboratory, and R. Fryer, Department of the Navy

Panel Discussion and Questions
R. D. Bergeron, University of New Hampshire
R. Ewald, Los Alamos Scientific Laboratory
J. D. Foley, Census Bureau
R. Fryer, Department of the Navy
B. Herzog, University of Colorado
W. Newman, Xerox Palo Alto Research Center
R. Puk, Sandia Laboratories

"What's Next?," R. Dunn, U. S. Army Electronics Command

POSTER SESSION
T. Wright, National Center for Atmospheric Research and D. Weller, IBM Research
Thursday, July 21, 12:45 PM

"The Buffalo Crime Mapping System: A Design Strategy for the Display and Analysis of Spacially Referenced Crime Data," K. E. Brassel, J. J. Utano, and P.O. Hanson, State University of New York at Buffalo

"TRANS — Use of Graphics in the Study of Transformations," E. Hefez, L. Dror and P. Nesher, University of Haifa

"An Interdisciplinary Laboratory for Graphics Research and Applications," D. P. Greenberg, Cornell University

"Techniques for the Display of Ocean Data on a Raster Driven Color CRT," L. E. McCleary, Naval Ocean Systems Center

"A Practical Approach to Implementing Line Printer Graphics," J. R. Rumsey, Harris Corp., and R. S. Walker, University of Texas at Arlington

"A Simple Approach to Computer-Aided Milling with Interactive Graphics," S. G. Satterfield, F. Rodriquez and D. F. Rogers, U. S. Naval Academy

"GPGS — A Device-independent General Purpose Graphic System for Stand-alone and Satellite Graphics," J. Van den Bos, L. C. Caruthers, Nijmegen University and A. Van Dam, Brown University

"Moving, Computer-Generated Images via Integral Holography," D. L. Vickers, G. S. Smith, S. R. Levine, Lawrence Livermore Laboratory, and L. G. Cross, The Multiplex Company

"A FORTRAN IV Program for Enhanced Graphic Characters," N. M. Wolcott and F. L. McCrackin, National Bureau of Standards

"Machine-Independent Metacode Translation," T. Wright, National Center for Atmospheric Research

3-D INPUT TECHNIQUES
D. P. Greenberg, Cornell University
Thursday, July 21, 2:15 PM

"An Interactive Computer Graphics Approach to Surface Representation," S. Wu, J. F. Abel and D. P. Greenberg, Cornell University

"Visual Interaction with Overhauser Curves and Surfaces," J. A. Brewer and D. C. Anderson, Purdue University

"A System for Sculpting 3-D Data," R. E. Parent, Ohio State University

CARTOGRAPHY
H. Moellering, Ohio State University
Thursday, July 21, 3:30 PM

"Structuring Cartographic Data within a Digital Cartographic Data Base," D. T. Edson and G. Y. G. Lee, U. S. Dept. of Interior, Geological Survey

"An Extensible Approach to Imagery of Gridded Data," G. Dutton, Harvard University

"Automated Contour Mapping Using Triangular Element Data Structures and an Interpolant Over Each Irregular Triangular Domain," C. M. Gold, University of Alberta, T. D. Charters, Alberta Environment and J. Ramsden, Alberta Research

GRAPHICS RESEARCH
D. Evans, Evans and Sutherland Computer Corp.
Friday, July 22, 8:00 AM

Panelists

"Dynamic Modeling," J. E. Warnock, Evans and Sutherland Computer Corp.

"A System for Interactive Definition and Depiction of Sculptured Surfaces," K. Knowlton, Bell Laboratories

"Towards a Unified Approach to 2-D Picture Manipulation," R. G. Shoup, Xerox Palo Alto Research Center

DATA BASE GRAPHICS
R. L. Phillips, University of Michigan
Friday, July 22, 9:30 AM

"A Query Language for a Network Data Base with Graphical Entities," R. L. Phillips, University of Michigan

"GEO-QUEL: A System for the Manipulation and Display of Geographic Data," R. R. Berman and M. Stonebraker, University of California, Berkeley

ALGORITHMS
R. Clark, Argonne National Laboratory
Friday, July 22, 10:30 AM

"Models of Light Reflection for Computer Synthesized Pictures," J. F. Blinn, University of Utah

"Line Tracking for Incremental and Raster Devices," R. A. Earnshaw, University of Leeds

"Raster-Scan Hidden Surface Algorithm Techniques," G. Hamlin, ICASE, and C. W. Gear, University of Illinois

"Hidden Surface Removal Using Polygon Area Sorting," K. Weiler and P. Atherton, Cornell University

"A Graph-Theoretic Real-Time Visible Surface Editing Technique," S. L. Tanimoto, University of Connecticut

"General Clipping on an Oblique Viewing Frustrum," R. F. Puk, Sandia Laboratories

"Optimal Surface Reconstruction from Planar Contours," H. Fuchs, M. Kedem, and S. P. Uselton, University of Texas at Dallas

TUTORIALS
D. Bergeron, University of New Hampshire
Friday, July 22, 1:15 PM

"A Homogeneous Formulation for Lines in 3 Space," J. F. Blinn, University of Utah

"Shadow Algorithms for Computer Graphics," F. C. Crow, University of Texas at Austin

EDUCATION
R. Puk, Sandia Laboratories
Friday, July 22, 2:15 PM

"Computer Art for Computer People - A Syllabus," G. C. Hertlein, California State University, Chico

"Automated Display Techniques for Linear Graphs," R. B. Maguire, University of Regina

LOW COST COMPUTER GRAPHICS
W. Etra, New School for Social Research
Friday, July 22, 3:30 PM

"Real-time Graphics in an Analog/Digital Graphics Habitat," T. DeFanti, University of Illinois

"Some Notes on Designing Inexpensive Computer Video Peripherals," L. Felsenstein, Loving Grace Cybernetics, Inc.

"What You Can Do With All This Stuff," L. Katz, Columbia University

"Color Graphics with Micro-computers: The Architecture of the Dazzler and Super-Dazzler," R. Melen, Cromemco, Inc.

"The Computer as a Compositional Tool for Video," W. Etra, New School for Social Research

"A Low Cost, High Quality Graphics Terminal," M. Fischer, Child, Inc.

"Chip Design Development for Low Cost Graphics," S. Beck

"The SOL Terminal Computer (Software for Videographics Systems)," S. Dompier, Processor Technology, Inc.