STEREOGRAPHICS

COURSE # 24

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SPEAKERS:

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COURSE CHAIR'S PREFACE

Welcome to *Stereographics*. The precursor of this course was first taught in 1985 as a half-day course at SPIE East in Arlington, Virginia. Later that year it was presented as a full day course at SIGGRAPH '85 under the title: "Three-Dimensional Display Technology and Techniques for Computer Generated Images." Since 1985 the course has been taught at either SIGGRAPH or the SPIE O-E Lase Symposium a total of eight times. Each version of the course has been updated with new material and new participants. This year, in addition to the note chapters contributed by the speakers, chapters have also been contributed by Richard DeHoff, Edwin R. Jones, Jr., A. Porter McLaurin, Lawrence D. Sher, Richard A. Steenblik, and Homer Tilton. By my count, well over two dozen different people have contributed their time during the past five years as course speakers, contributors to the notes, and to present demonstrations of 3-D display devices and techniques. Each of them has taught me something new about 3-D display. My thanks to all of them, especially: John Baker, Barbara Hall, David Butts, Richard DeHoff, Robert Fornaro, Phil Johnson, Edwin R. Jones, Olin Lathrop, James Lipscomb, Lenny Lipton, Shaun Love, Grayson Marshall, Chris Mayhew, David McAllister, A. Porter McLaurin, John Merritt, Kathy Middo, Lowell Noble, Matt Rebholz, Woodrow Robbins, John Roese, Dan Sandlin, Ellen Sandor, Lawrence Sher, Richard Steenblik, Homer Tilton, Larry Virgin and Steve Wixson.

Larry F. Hodges

COURSE ABSTRACT

Although 3-D graphics creates and interacts with data in three dimensions, the majority of display devices allow only perspective rendering of images in two dimensions. In this course we provide a detailed introduction to the rapidly growing area of stereographics and other 3-D display techniques. Topics covered will include: 1) perceptual and human factor issues in 3-D display, 2) in-depth material on the design and display characteristics of time-multiplexed stereoscopic display systems, 3) computing stereographic views, 4) 3-D hardcopy techniques, and 5) overview of other 3-D display techniques including varifocal mirrors, chromostereoscopy, alternating pairs, and the Pulfrich phenomenon.

SPEAKER BIOGRAPHIES

Larry F. Hodges is currently an Assistant Professor in the School of Information and Computer Science at Georgia Institute of Technology. He received his Ph.D. in computer engineering at North Carolina State University in 1988. He also holds a MS in computer studies from NCSU and a BA with a double major in mathematics and physics from Elon College. His professional interests are in computer graphics, three-dimensional display and scientific visualization. Dr. Hodges has presented numerous technical courses and invited talks in raster graphics, true 3-D display technologies, and stereographics and is the National Chair for the Society for Information Display's Special Technology Committee on 3-D Display and Visualization. He is a member of the ACM, IEEE-CS, SID, and SPIE.

Phil Johnson is program manager of the liquid crystal shutter group at Tektronix. He received his BS in physics from Albion College in 1964. He has been with Tektronix since 1964 where he has worked with various display technologies and published papers on displays and liquid crystal technology. Mr. Johnson is the coinventor of the π-cell, a fast-switching liquid-crystal device that is the basis for the stereoscopic shutter system used by Tektronix and several other workstation vendors.

Shaun Love is a visiting instructor in Computer Science at North Carolina State University. His research interests include computer graphics and holography. He has written papers on computer generated holography and true 3D display. Mr. Love received his BA from the University of North Carolina, Chapel Hill and the MS degree in Computer Studies from North Carolina State University. He is currently a Ph.D. candidate in Computer Engineering at NCSU. He is a member of ACM, SPIE and Upsilon Pi Epsilon.

David F. McAllister is a Professor in the Computer Science Department of North Carolina State University. He has developed and taught short courses in graphics for industry and major computer science and display technology conferences. He is the author of numerous papers on curve and surface representation and three-dimensional display technology. His research interests include computer graphics and software reliability. Dr. McAllister received his MS and BS in mathematics from Purdue University and the University of North Carolina, Chapel Hill, respectively. He obtained his Ph.D. in Computer Science from the University of North Carolina, Chapel Hill in 1972. He is a member of ACM, IEEE, and SPIE.

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