BANQUET TALK Tuesday, Nov 7, 2006 *8PM–9PM*

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Visualizing the Future

Chris Johnson Director, Scientific Computing and Imaging Institute Distinguished Professor, School of Computing University of Utah

Abstract

Computers are now extensively used throughout science, engineering, and medicine. Advances in computational geometric modeling, imaging, and simulation allow researchers to build and test models of increasingly complex phenomena and thus to generate unprecedented amounts of data. These advances have created the need to make corresponding progress in our ability to understand large amounts of data and information arising from multiple sources. In fact, to effectively understand and make use of the vast amounts of information being produced is one of the greatest scientific challenges of the 21st Century.

Visual computing, which relies on and takes advantage of, the interplay among techniques of visualization, computer graphics, virtual reality, and imaging and vision, is fundamental to understanding models of complex phenomena, which are often multi-disciplinary in nature. In this talk, I will first provide several examples of ongoing visual computing research at the Scientific Computing and Imaging (SCI) Institute as applied to problems in computational science, engineering, and medicine, then discuss future research opportunities and challenges.



Speaker Bio-Sketch: Professor Johnson directs the Scientific Computing and Imaging Institute at the University of Utah where he is a Distinguished Professor of Computer Science and holds faculty appointments in the Departments of Physics and Bioengineering. His research interests are in the areas of scientific computing and scientific visualization. Dr. Johnson founded the SCI research group in 1992, which has since grown to become the SCI Institute employing over 100 faculty, staff and students. Professor Johnson serves on several international journal editorial boards, as well as on advisory boards to several national research centers. Professor Johnson has received several awards, including the NSF Presidential Faculty Fellow (PFF) award from President Clinton in 1995 and the Governor's Medal for Science and Technology from Governor Michael Leavitt in 1999. In 2003 he

received the Distinguished Professor Award from the University of Utah. In 2004 he was elected a Fellow of the American Institute for Medical and Biological Engineering (AIMBE) and in 2005 he was elected a Fellow of the American Association for the Advancement of Science(AAAS).