THE RIGHT CONNECTION | CENIC 2.0

2017 Innovations in Networking Awards

Tom DeFanti Awarded Innovations In Networking Award for Outstanding Individual Contributions

In recognition of his work to develop next generation networks, advance the mission of Calit2, and shape collaborations across organizations, CENIC recognizes Tom DeFanti, an internationally recognized pioneer in visualization and virtual reality technologies at Calit2, University of California San Diego, as the recipient of the 2017 Innovations in Networking Award for Outstanding Individual Contributions.

Tom's commitment to advance both technology and the common good is evident to all who are fortunate to work with him. Maxine Brown has worked with Tom DeFanti since 1977, and is now Director of the Electronic Visualization Laboratory at the University of Illinois at Chicago, which Tom co-founded with art professor Dan Sandin in 1973. Maxine recalls that "Advanced networking was an obvious extension of Tom's passion for real-time interactive computer graphics, with emphasis on 'real time,' whether images and animations are viewed locally or over distance."

Tom's interest in networking began when SIGGRAPH, the world's largest, most influential annual conference and exhibition in computer graphics and interactive techniques, was held in Chicago in 1992. In partnership with Larry Smarr, then at the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign, and Rick Stevens of Argonne National Laboratory, Tom's work enabled researchers to connect supercomputers and instruments back home and virtually bring their laboratories to the conference site.

In 1995, Tom, Larry, and Rick organized the first IEEE/ACM Supercomputing (SC) I-WAY event, interconnecting Federal agency advanced networks and enabling 60 distributed, high-performance computing and visualization projects throughout the U.S. to be showcased at the conference site in San Diego. The National Science Foundation (NSF) noticed, and Steve Goldstein, NSF Program Director for Interagency and International Networking Coordination, contacted Tom to do the same for international advanced networks, saying that Tom, as a user of networks, would make sure these networks not only interconnected, but interoperated as well.

In partnership with Joe Mambretti, who had created the Metropolitan Research and Education Network in Chicago, Tom spearheaded the NSF STAR TAP international connection point, which has evolved into today's StarLight. "Over the past 25 years, Tom continues to push the limits of big networks, as big resolution instruments, sensors and simulations generate big visualization and virtual-reality data that scientists want to access, display, and share on big displays," said Mambretti, Director of the International Center for Advanced Internet Research at Northwestern University.

With his work in visualization and virtual reality technologies recognized around the world, Tom was instrumental in developing the new Media Arts Wing at Calit2. One of the most advanced facilities of its kind in the world, the high-end visualization and virtual reality experiments conducted in this facility engage students, researchers, and faculty members and provide a real sense of what the future can hold.

"Tom has been one of my closest collaborators for three decades. He was a driver of the innovation at NCSA and Calit2 in virtual reality, scalable visualization, green IT, and optical networking." said Larry Smarr, Founding Director of CalIT2 and Harry E. Gruber Professor of Computer Science, UC San Diego.

From his work with GreenLight Instruments, enabling scientists from diverse disciplines to measure and then minimize energy consumption, to his work with National Lambda Rail, a 12,000-mile high-speed national network infrastructure owned and operated by the U.S. research and education community, Tom's contributions to the development of next-generation networks and applications to advance science have been profound.

Innovations in Networking Awards are presented each year by CENIC to highlight the exemplary innovations that leverage ultra-high bandwidth networking, particularly where those innovations have the potential to transform the ways in which instruction and research are conducted or where they further the deployment of broadband in underserved areas.

About CENIC • www.cenic.org

CENIC connects California to the world—advancing education and research statewide by providing the world-class network essential for innovation, collaboration, and economic growth. The nonprofit organization operates the California Research and Education Network (CalREN), a high-capacity network designed to meet the unique requirements of over 20 million users, including the vast majority of K-20 students together with educators, researchers, and individuals at other vital public-serving institutions. CENIC's Charter Associates are part of the world's largest education system; they include the California K-12 system, California Community Colleges, the California State University system, California's public libraries, the University of California system, Stanford, Caltech, the Naval Postgraduate School, and USC. CENIC also provides connectivity to leading-edge institutions and industry research organizations around the world, serving the public as a catalyst for a vibrant California.

About Calit2 • www.calit2.net

The California Institute for Telecommunications and Information Technology (Calit2) is an academic research institution jointly run by the University of California San Diego and the University of California Irvine. Calit2 was established in 2000 as one of the four UC Gray Davis Institutes for Science and Innovation. As a multidisciplinary research institution, it is conducting research discovering new ways in which emerging technologies can improve the state's economy and citizens' quality of life. Keeping in mind its goal of addressing large-scale societal issues, Calit2 extends beyond education and research by also focusing on the development and deployment of prototype infrastructure for testing new solutions in real world environments. Calit2 also provides an academic research environment in which students can work alongside industry professionals to take part in conducting research and prototyping and testing new technologies.