

# IOWA STATE UNIVERSITY

**Department of Computer Science**

**2012 Robert Stewart Distinguished Lecture  
and 2012 HCI Emerging Technologies Conference Keynote Lecture**



## Larry Smarr

<http://lsmarr.calit2.net/>

**California Institute for Telecommunications  
and Information Technology**

**Thursday April 19, 2012**

**3:40pm**

**Howe Hall Alliant Energy**

**Lee Liu Auditorium**

## ***An End-to-End Campus-Scale High Performance Cyberinfrastructure for Data-Intensive Research***

Campuses are experiencing an enormous increase in the quantity of data, generated by scientific instruments and computational clusters, which are stored in massive data repositories. The shared Internet, engineered to enable interaction with megabyte-sized data objects is not capable of dealing with the gigabytes to terabytes of modern scientific data. Instead, a high performance end-to-end cyberinfrastructure built on 10,000 Mbps optical fibers is emerging to support data-intensive research. I will give examples of early prototypes which integrate scalable data generation, transmission, storage, analysis, visualization, and sharing, driven by applications as diverse as genomics, medical imaging, cultural analytics, earth sciences, and cosmology.

### ABOUT LARRY SMARR

Larry Smarr is founding Director of the California Institute for Telecommunications and Information Technology and holds the UCSD's Computer Science Department Harry E. Gruber professorship. Previously he was founding Director of the National Center for Supercomputing Applications. He is a member of the National Academy of Engineering, as well as a Fellow of the American Physical Society and the American Academy of Arts and Sciences. In 2006 he received the IEEE Computer Society Tsutomu Kanai Award for lifetime achievement in distributed computing systems. He serves on NASA's Advisory Council, DOE's ESnet Policy Board, and chairs NSF's Advisory Committee on Cyberinfrastructure.

The Robert Stewart Distinguished Lecture in Computer Science is made possible by the generous contribution of Dr. Long Nguyen, who received his doctorate from the ISU Computer Science Department in 1975. It is in honor of his mentor, Dr. Robert Stewart, Professor Emeritus and the first Department Chair of Computer Science at Iowa State University.

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