



## LEADING THE WAY TO TOMORROW'S INTERNET


 
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### Quote of the Month

"We have a dynamite program planned for CENIC 2002 that should draw a very diverse group of participants from our universities, community colleges and K-12."  
--Tom West, President/Executive Director, CENIC

### CENIC News

#### Larry Smarr to Address CENIC 2002 Attendees

Larry Smarr, Director of the California Institute for Telecommunications and Information Technology, will give a keynote address on day 1 of the CENIC 2002 conference called *Networking and Applications for Future Generations*.

Dr. Smarr, an internationally known and down-to-earth technologist, is a pioneer in prototyping a national information infrastructure to support academic research, governmental functions, and industrial competitiveness. In 1985, Dr. Smarr became the founding Director of the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana-Champaign (UIUC). In 1997, he became in addition the founding Director of the National Computational Science Alliance, comprised of over fifty universities, government labs, and corporations linked with NCSA in a national-scale virtual enterprise to prototype the information infrastructure of the 21st Century. Most recently, Dr. Smarr became the founding Director of the California Institute for Telecommunications and Information Technology, which spans the Universities of California at San Diego and Irvine. Dr. Smarr received his Ph.D. from the University of Texas at Austin and conducted observational, theoretical, and computational based astrophysical sciences research for fifteen years before becoming Director of NCSA. He is a member of the National Academy of Engineering and a Fellow of the American Physical Society and the American Academy of Arts and Sciences. In 1990 he received the Franklin Institute's Delmer S. Fahrney Gold Medal for Leadership in Science or Technology. Dr. Smarr is a member of the President's Information Technology Advisory Committee.

#### Noted Expert to Speak About the Future of Optical Communications

Alan Willner, Professor of Electrical Engineering - Systems, University of Southern California and Associate Director for the USC Center for Photonics Technology, will kick off the 2nd day of CENIC 2002 with a keynote address on the Future Revolution in Optical Communications and Networking. Prof. Willner is a highly requested speaker and has over 300 publications, including 1 book. His research is in the area of optical fiber communication systems, wavelength-division multiplexing, optical amplification, optical networks, optical switching, and optical interconnections.

Prof. Willner has received a number of awards including the Presidential Faculty Fellows Award from the White House, the David and Lucile Packard Foundation Fellowship in Science and Engineering, the National Science Foundation National Young Investigator Award, the Fulbright Foundation Senior Scholar Fellowship, the Institute of Electronic and Electrical Engineers Lasers and Electro-Optics Society (IEEE LEOS) Distinguished Lecturer Award, the USC/Northrop Outstanding Junior Engineering Faculty Research

Award, the USC/TRW Best Engineering Teacher Award, and the Armstrong Foundation Memorial Prize for the highest-ranked EE graduate student at Columbia University. He is a Fellow of the Optical Society of America (OSA) and was a Fellow of the Semiconductor Research Corporation.

#### **CENIC 2002: CalREN - Catalyze, Connect, Collaborate**

CENIC invites you to its 6th Annual Conference - linking you and other key players in advancing high performance networking in California. CENIC 2002 will be held on May 5 through 7, 2002 at the Paradise Point Resort in San Diego, California. This is always a great event to learn about new technologies, new networking applications, and meet with your colleagues in a relaxed environment. Additionally, this year there will be joint sessions with the Internet 2 conference in Virginia.

- Join network leaders in California's research and education communities to catalyze, connect and collaborate.
- Discover how CENIC's new optical backbone is enhancing education for all students, educators, faculty, and researchers in California's education and research institutions.
- Learn how CENIC's activities synch with national and international initiatives in networking.
- Connect with your colleagues for conversation and fun in beautiful San Diego, California.

REGISTER TODAY AT <http://www.cenic.org/CENIC02/CENIC2002.html>

CENIC 2002 is generously sponsored by Cisco, SBC Pacific Bell, Juniper, Qwest, Level 3, Vega Business Technologies, and Stratacache.

#### **National Networking News**

##### **Stanford Researchers Plan to Use Internet2 to Train Medical Students**

SUMMIT (Stanford University Medical Media and Information Technologies) is a research and development center in the School of Medicine at Stanford University. Working in partnership with faculty, students and research groups, SUMMIT fosters Stanford's educational presence through research and curricular project development. SUMMIT is currently in the process of developing an architecture that leverages the bandwidth of Internet2 and the Next Generation Internet (NGI) for teaching anatomy and surgical procedures, through manipulation of virtual anatomical models with haptic feedback. This architecture will require the bandwidth, quality-of-service, data-privacy, and collaborative capabilities of the NGI to deliver low-cost, real-time simulation and visualization technologies to a diverse audience

Two teaching applications the Anatomy Workbench and the Surgical Skills Workbench - and a local Gigabit test bed network for evaluating their effectiveness are under development. Both applications will support synchronous collaboration through a shared virtual workspace and will use haptic feedback to augment the visual sense. Through the unique capabilities of the NGI it is anticipated that a wide community of teachers and users will share on-line, image-rich data and professional experiences via a distributed client-server system.

The Anatomy Workbench will be a single point of entry to a repository of data and images, including dissection photos, radiological images, CT and MRI volumetric studies, live or stored video of surgical procedures, and dynamic 3D anatomical models. This application will allow users to work with these resources through combination and derivation, rather than only viewing. The Surgical Skills Workbench will utilize 3D models created by using the Anatomy Workbench, and will introduce haptic feedback of biomechanical properties to produce simulations of basic surgical manipulations and procedures. This application will allow users to learn and practice the eye-hand coordination skills necessary for accurate and efficient performance in real-life surgical situations.

For more information, please visit <http://ngi.stanford.edu> and <http://summit.stanford.edu>

Source: David Gutierrez, Stanford University, [degm@stanford.edu](mailto:degm@stanford.edu)

##### **SURAViDE Digital Video Workshop**

Online registration is now available for the 4th annual SURAViDe Digital Video Workshop. The workshop this year takes place April 23 - 25, 2002, at the University of Alabama at Birmingham.

This workshop has become known for providing valuable and immediately useful education and peer interaction related to furthering the successful use of digital video technologies within the research and education community. Topics that will be included in this year's workshop are:

- Case studies from instruction and research
- Emerging and related technologies that impact digital video development and deployment
- Training sessions on key topics related to digital video implementation
- Interactive sessions with prominent vendor/developers

Travel information, online registration and program details can be found at: <http://www.vide.net/resources/conferences/spr2002/>

Source: SURA (Southeastern Universities Research Association)

##### **Record-Setting Competition for Internet Applications Opens New Round**

This month Internet2 announced that the next edition of the Internet2 Land Speed Record (I2-LSR) competition for the highest-bandwidth networks in the world features a new category for the next generation Internet protocol called IPv6. The contest is open to anyone and is expected to attract entries from around the world. Awards will be presented at the Spring 2002 Internet2 Member Meeting to be held in Arlington, Virginia on May 6 to 9.

"The Internet2 Land Speed Record demonstrates the ultimate end-to-end performance an application can achieve over both the current, and Next Generation, production quality IP based networks." Rich Carlson, Network Research Scientist at Argonne National Laboratory, and chair of the I2-LSR judges panel.

The current I2-LSR was set on March 28, 2000 by the University of Washington, the Information Sciences Institute of the University of Southern California, Qwest and Microsoft using the High Speed Connectivity Consortium (HSCC) Network to transfer over 8.4 gigabytes of data at a rate of over 830 megabits per second from Redmond, Washington to Arlington, Virginia.

Entries are judged on a combination of how much bandwidth they use and the distance they cover end-to-end. Eligible entries will use standard Internet (TCP/IP) protocols in separate v4 and v6 categories. The deadline for entries is April 14, 2002. Complete rules, submission guidelines and additional details are available at:<http://www.internet2.edu/html/i2lsr.shtml>

Source: Internet2

#### **About CENIC**

CENIC is a not-for-profit corporation formed by the California Institute of Technology, the California State University, Stanford University, the University of California, and the University of Southern California to facilitate and coordinate the deployment, development, and operation of a set of seamless and robust advanced network services. The CENIC Associates program offers qualified companies the opportunity to collaborate with CENIC in pursuit of the goal of providing the most advanced network services for research and education. Cisco Systems, Nortel Networks, Pacific Bell, and the University and Community College System of Nevada are CENIC's Partner Associates.

#### **Subscription Information**

You can subscribe to CENIC Today by visiting [http://www.cenic.org/pubs/c\\_today/cover.html](http://www.cenic.org/pubs/c_today/cover.html) or by sending e-mail to [listproc@cenic.org](mailto:listproc@cenic.org) with the following request in the message body

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