

## SDSC, UCSD Mark Earth Day with Panel Discussion on “Green” Computing Technologies

April 22, 2008

Jan Zverina

The San Diego Supercomputer Center and UC San Diego's Rady School of Management marked Earth Day with a panel of academic and industry experts discussing ways to make the world's rapidly expanding computer infrastructure "greener."

The discussion, hosted in association with San Diego trade organization CommNexus at the Rady School of Management, focused on promising research and techniques for improving the energy efficiency of computing systems to meet the projected increase in global demand for digital information and services.

Studies show that the "information economy" is consuming increasing amounts of electricity at a time when escalating energy costs and global warming are key issues. A recent EPA study concluded that in 2006, electricity usage by servers and data centers across the U.S. was 1.5% of total consumption, and that usage would double in only five years.

"With San Diego quickly becoming a hub for clean technology development, we're excited to highlight this important issue of power-efficient computing and strengthen the connection between research going on throughout UCSD and across the industry," noted Ron Hawkins, director of industry relations at the San Diego Supercomputer Center. "We hope this can be the start of an ongoing and mutually beneficial dialogue."

SDSC, a national-level supercomputer center funded by the National Science Foundation and UCSD, is currently undergoing a "green" building expansion featuring a host of energy-saving designs, materials and practices, all intended to put the data center at the leading edge of operational efficiency. The 80,000 square-foot building, to open this fall, earned the 2005 Best Practices Award for innovative heating, ventilation and air conditioning design from the Higher Education Energy Partnership.

Panelists at the UCSD/CommNexus event included:

Dr. Tajana Šimunić Rosing, assistant professor at UCSD's Jacobs School of Engineering. Dr. Rosing discussed her research into power and thermal management of computer systems. Her research has concluded that intelligent power management of computer systems can lead to large energy savings by monitoring and taking advantage of variations in workloads.

Dr. Kenny Gross, distinguished engineer at Sun Microsystems. Dr. Gross presented his work in monitoring dynamic power utilization of computer servers. He highlighted software innovations at Sun that have overcome many of the challenges associated with traditional hardware-based instrumentation approaches.

Dr. Winfried Wilcke, program director at IBM's Almaden Research Center, in San Jose, Calif. Dr. Wilcke presented his views on the importance of energy efficiency in IT and energy-related trends in computer technology and systems architecture. Dr. Wilcke discussed the importance of implementing efficient cooling in data centers as an energy conservation measure. He also outlined some of the opportunities to improve power efficiency through technology improvements at the system and chip levels.

The meeting was organized under the auspices of the CommNexus "Clean Technologies" special interest group, which focuses attention on green and environmentally friendly technologies.

**About UC San Diego** UCSD is a living laboratory for climate solutions, and has been an early adopter for real-world tools and leading-edge technologies to support and advance environmental sustainability. Since 2001, UCSD has completed more than \$58 million in energy efficiency projects, reducing annual energy costs by more than \$12 million a year. UCSD was the first university in California (and now one of only two California universities) to have been recognized by the California Climate Action Registry as a "Climate Action Leader" for successfully measuring, certifying and reporting their greenhouse gas emissions to the Registry and the public. Since 2002, UCSD has received more than a dozen awards and special recognitions for its green practices in campus operations.

**About CommNexus** CommNexus San Diego, formerly the San Diego Telecom Council, is a non-profit network of communications industry companies, defense industry companies, service providers, professional trade organizations, and local government. By introducing both national and international markets to the emerging technologies in our region, CommNexus positions San Diego as a world center for innovation in communications technology. CommNexus San Diego works to accelerate the formation, growth, and success of communications technology and service companies in the San Diego region.

Media Contacts: Ron Hawkins, SDSC Industry Relations, 858-534-5045 Jan Zverina, SDSC Communications, 858-534-5111