With fewer than 50 days to go before the Super Computing 2004 conference, high-energy physics researchers at the University of Sao Paulo recognized the opportunity to showcase their active involvement in the global computational Grid. They asked the CIARA (Center for Internet Augmented Research and Assessment) team at FIU, and the ANSP (Academic Network of Sao Paulo) team to leverage their expertise, along with AMPATH to create a 2.5 Gigabit per second (Gbps) connection for research from the conference center floor in Pittsburgh, to the computational clusters in Brazil. To do this, a team was formed of Telecom Italia Sparkle's Latin American Nautilus, providing the submarine cable capacity; Cisco Systems, providing critical components for the end-to-end connection; Terremark, providing space and support in their Network Access Points (NAPs) in both MIami and Sao Paulo; FPL Fibernet, providing crucial links in Miami; and Qwest Communications and Internet2's Abilene network, providing high-performance connectivity from Miami to Pittsburgh.

The result of this collaboration was a contribution to the winning team of the 2004 bandwidth challenge, allowing them to exceed their goal of 100Gbps.

The new link between Miami and Sao Paulo set a new speed record for U.S. to Brazilian research networking at a sustained 1.66Gbps, with bursts up to 2Gbps. This new link increases 45 times the bandwidth capacity between the US and Brazil. This is a first step in bringing research connectivity in the Gigabit range for U.S. to Latin American research efforts.

This global collaboration involving teams of high-energy physicists, computer scientists and network engineers from the California Institute of Technology (Caltech), the Stanford Linear Accelerator Center (SLAC), Fermilab, CERN, the University of Florida and Florida International University, as well as international participants from the UK (University of Manchester and UKLight), Brazil (Rio de Janeiro State University, the State University of Sao Paolo and the Academic Network of Sao Paulo) and Korea (Kyungpook National University), resulted in a sustained 101Gbps of throughput. This was a single event, which will by 2007 become commonplace in order to support high energy research when CERN's Large Hadron Collider begins operation, searching for the Higgs particles, super-symmetry, and other new physics in an energy range previously unattainable, generating data rates seen first in this demonstration at SuperComputing2004.

Harvey Newman, Professor of Physics at Caltech and head of the team said, "This is significant milestone both for the development of global networks and Grids, as well as inter-regional cooperation in science projects at the high energy frontier. We demonstrated that multiple links of various bandwidths can be used effectively over long distances. This is a common theme that will serve many fields of data intensive science well. This includes such fields as fusion, geosciences, and neutron physics, who foresee network needs rising to the

Terabit/sec range in within the next 5-10 years."

About FIU
Florida International University is one of America's most dynamic institutions of higher learning. Since opening in 1972, FIU has achieved many milestones of excellence that have taken other universities more than a century to reach, including its classification as a Research I university. FIU has a nationally renowned faculty known for their outstanding teaching and cutting-edge research, and various students from the U.S. and over 130 foreign countries attend FIU each year. The university offers more than 200 Baccalaureate, Master's and Doctoral degree programs in 16 colleges and schools. For more information on Florida International University, please visit www.fiu.edu.

About AMPATH
AMPATH interconnects Research and Education (R&E) networks in South and Central America, the Caribbean and Mexico to US and non-US R&E networks via Internet2's Abilene network and the StarLight facility, led by the University of Illinois at Chicago. The AMPATH international exchange is located at the NAP of the Americas in Miami. AMPATH is supported in part by grants from the National Science Foundation. More information about AMPATH can be found at www.ampath.fiu.edu.

About Latin American Nautilus
Latin American Nautilus provides high quality wholesale telecommunication services in the Americas with its state of the art 30,000km fiber optic network on the Telecom Italia Sparkle Global Backbone. The Fiber Optic ring network interconnects South, Central & North America with the Telecom Italia Global Backbone expanding TI Sparkle's service portfolio into the Americas. For additional information please visit www.lanautilus.com.

About Internet2
Internet2 is a consortium of 207 universities working alongside industry and government sharing the common goal of developing and deploying advanced network applications and technologies in hopes of accelerating the creation of tomorrow's Internet. Internet2 is working to recreate the quality of collaborations among academia, industry and government that spawned our present-day Internet. More information about Internet2 can be found at www.internet2.edu.

About Academic Network of Sao Paulo (ANSP)
ANSP unites São Paulo's University networks with Scientific and Technological Research Centers in São Paulo, and is managed by the State of São Paulo Research Foundation (FAPESP). The ANSP Network is another example of international collaboration and exploration. Through its connection to AMPATH, all of the institutions connected to ANSP will be involved in research with US universities and research centers, offering significant contributions and the

potential to develop new applications and services. This connectivity with AMPATH and ANSP will allow researchers to enhance the quality of current data, inevitably increasing the quality of new scientific developments.

About Cisco Systems
Cisco Systems, Inc. (NASDAQ: CSCO), the worldwide leader in networking for the Internet, this year celebrates 20 years of commitment to technology innovation, industry leadership, and corporate social responsibility. Information about Cisco can be found at http://www.cisco.com. For ongoing news, go to http://newsroom.cisco.com.

About FPL Fibernet
FPL FiberNet, LLC, the telecommunications subsidiary of FPL Group, Inc., (NYSE:FPL), provides fiber optic services and cable to telecom-related companies in Florida.   FPL Group, Inc. is one of the nation's largest providers of electricity-related services, with annual revenues of more than $9 billion. Florida Power & Light Company, with more than 4.2 million customer accounts in Florida, is FPL Group's principal subsidiary. FPL Energy, LLC, an FPL Group wholesale electricity generating subsidiary, is a leader in producing electricity from clean and renewable fuels. Additional information is available on the Internet at www.FPLFiberNet.com, www.FPLGroup.com and www.FPL.com.

About Terremark
Terremark is an operator of integrated Tier-1 Internet exchanges and best-in-class network services and the owner and operator of the NAP of the Americas and NAP do Brasil, providing space and support in their Network access points in both MIami and Sao Paulo.