

# **Title: An Inter-Regional Grid Enabled Center for High Energy Physics Research and Educational Outreach (CHEPREO) at Florida International University in collaboration with California Institute of Technology, Florida State University and the University of Florida**

*Wednesday, 15 February 2006 09:00 (20 minutes)*

Florida International University (FIU), in collaboration with partners at Florida State University (FSU), the University of Florida (UF), and the California Institute of Technology (Caltech), in cooperation with the National Science Foundation, are creating and operating an interregional Grid-enabled Center for High-Energy Physics Research and Educational Outreach (CHEPREO) at FIU, encompassing an integrated program of research, network infrastructure development, and education and outreach at one of the largest minority schools in the US. CHEPREO will extend FIU's existing research activities at Jefferson National Laboratory to the long-term high-energy physics research program at the Compact Muon Solenoid (CMS) experiment at CERN, create a robust outreach activity based on CMS research, develop an advanced networking and Grid computing infrastructure that will draw in new collaborators from South America, and enhance science and math education in South Florida for underserved minority students through pedagogic enhancements and teacher training led by a Physics Learning Center (PLC).

## **Summary**

The tightly integrated structure of CHEPREO's learning and research program is unique in its combination of interregional character (spanning the US, South America and the CERN laboratory in Europe), and its direct involvement of minority students in leading-edge scientific research in a national and global working environment. It builds on a strong foundation at FIU of committed leadership, excellent academic programs and special relationships with several South American countries through its AMPATH advanced research and education network. It also leverages the leading roles, facilities and ongoing collaborative projects of Caltech, UF and FSU in (1) the development and operation for science of international networks, Grids, and collaborative systems; (2) the CMS detector development and its exploration of the high energy frontier of particle physics; and (3) the development of the iVDGL which is being extended to South America through the AMPATH "Gateway to the Americas" in partnership with the State University of Rio de Janeiro, a.k.a. Universidade do Estado do Rio de Janeiro (UERJ) in Brazil, as well as to Europe through the Abilene backbone and the "Starlight" international network peering point in Chicago, in cooperation with the European DataTAG project.

The CHEPREO structure provides a rich, multifaceted environment for active participation by Hispanic, black and women minority students involved in education, physics, and information technologies. Its unique incorporation of forefront research, science outreach, international networking, Grid-based computing and connections to South American research universities will enhance and inspire the next generation of scientists and network engineers and significantly advance science education. U.S National Science Foundation Award #0312038

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