SCIENCE GRID THIS WEEK

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Students Connecting Science and Cyberinfrastructure

What's the best way to expand the scientific reach of grid computing and cyberinfrastructure beyond big international projects? At Florida International University, leaders of the CyberBridges project are betting on cyberinfrastructure-trained students as a way to integrate advanced technology into university research.

The goal of the CyberBridges program, now in its pilot year, is to bridge the divide between the cyberinfrastructure community and different scientific disciplines by giving students the opportunity to explore applications of these new technologies within their domains. The program would eventually create a new generation of scientists and engineers who approach scientific problems in a new way.

"We hope that the graduate students will act as a conduit to bring cyberinfrastructure into the different science and engineering areas on campus," said FIU's Heidi Alvarez, one of the program's organizers. "Feedback from the students and their faculty advisors has already been very enthusiastic, and we hope that our first set of students will continue their research after the year is over."

The program, supported through the National Science Foundation's CI-TEAM program, funds four graduate fellowships for two semesters. The first semester includes a formal course in which the students build their own network and eight-node computational grid. In the summer semester, students will perform an independent research project that integrates the new technology into their research.

The first four students hail from biochemistry, physics, biomedical engineering and computer science, and represent different stages in their graduate careers. One student is developing a new protein pattern discovery method based on three-dimensional shapes. Comparing the complicated shapes against vast databases requires substantial computing power, something that grid computing may make available.

Alvarez and colleagues have big plans for the CyberBridges program. Instead of just continuing the program at FIU in future years, they hope to take it around the world.

"We plan to propose an implementation called Global CyberBridges," said Alvarez. "With our partners in China, Hong Kong, Brazil and the PRAGMA organization, we've been discussing a project that would have sets of students at universities in each country attending classes and completing research projects. They would come together with their CyberBridges peers to create global multidisciplinary teams." Alvarez hopes that such a program will be to the benefit of scientists around the world, as their research is expanded and improved through the use of cyberinfrastructure.

Learn more at the CyberBridges Web site.

—Katie Yurkewicz

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