



New supercomputer announced

'Tezpur' will replace 'SuperMike'

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Issue date: 6/27/06

The University has announced plans for a new \$1 million supercomputer called Tezpur to be unveiled by the end of the summer.

Tezpur, named after one of the world's hottest peppers, will be located in the Frey Computing Services Center. It will replace LSU's current supercomputer, SuperMike.

Joel Tohline, an alumni physics and astronomy professor and LSU Chancellor Search Committee chairman, built SuperMike with money allocated by the state. He received the money for SuperMike in the 2001-2002 fiscal year for \$2 million and upgraded for an additional \$1 million in 2004.

Tohline heads a research group that consists of four graduate students and two post-doctoral students. Post-doctoral students are individuals who have earned their Ph.D.s and seek additional experience and research. Tohline and his research group receive funds from NASA and the National Science Foundation to create mathematical models that simulate fluid flows in astronomical systems.

In addition to his work at LSU, Tohline works with the University of Illinois, University of California at San Diego and University of Pittsburgh, which are the top three universities that receive funds from the National Science Foundation.

Like Tohline, chemistry professor Randall Hall uses SuperMike to collaborate with other universities to perform joint research.

"We're always trying to get better, faster computers because our research and teaching demands that," Hall said.

Hassan Mashriqui, an assistant professor at the University's Hurricane Center, uses SuperMike on a weekly basis to generate flood maps and coastal

restoration models. Mashriqui said the flood maps that the supercomputer produces give hurricane control centers in southern Louisiana an accurate idea of what to expect before a storm strikes.

"This is a great asset for Louisiana to have," Mashriqui said. "Without a doubt, we benefited in 2005 by having SuperMike handy."

Other researchers at LSU currently use SuperMike in a number of ways. Chemical researchers study incineration reactions and hazardous waste disposal while physicists study sea level simulations and the formations of black holes and galaxies.

Tohline said computers become outdated within a year and a half unless they are upgraded.

"If LSU is going to remain in a leadership position in research, we need to steadily improve the available computing facilities," Tohline said.

Hall said SuperMike was state of the art when it was introduced on campus in 2002, but it is no longer as advanced as the University would like it to be.

After Tezpur becomes functional at LSU, it will perform the same tasks as SuperMike, but at a higher capacity. SuperMike currently performs four trillion operations per second, but Tezpur will exceed this amount. The new supercomputer will perform 15 trillion operations per second.

SuperMike is made of 512 dual-processor PCs. Each of Tezpur's PCs will have four processors. A high-speed network will tie the PCs together and allow them to communicate at a faster pace.

"More power means quicker and more accurate answers," Hall said.

Hall said Tezpur will replace SuperMike in the sense that it will be the fastest machine of its type on campus, but SuperMike will still be in use.

Tohline said SuperMike will be broken up into separate computers and distributed to various departments. He said many students will benefit from this because it will give them hands-on experience.

"Students who are interested in computing will be able to work with one of the most powerful computers in the world, and that's terrific experience for moving out into the job market," Tohline said.

IT Communications and Planning Officer Sheri Thompson said Tezpur will innovate the way researchers study their fields.

"By making progress on our Flagship IT strategy, researchers will have the capacity and capability to do their work faster," Thompson said. "It will attract researchers and research dollars here as well."