DATELINE: LOS ALAMOS

10TH SUPERCOMPUTING CHALLENGE

SANDIA PREPARATORY SCHOOL TEAM TAKES TOP PRIZE

A computer analysis of sorted cell data gave a computer team from Sandia Preparatory School in Albuquerque the top prize in the 10th annual New Mexico High School Supercomputing Challenge at Los Alamos.

Students Carli McGee, Heather Wood and Joan Goldsworthy took home a $1,000 savings bond each for their supercomputer program "Pattern Analysis of High Throughput Flow Cytometry Data." Their teachers received a computer loaded with software for their classroom.

Albuquerque Sandia Preparatory School teacher Neil McBeth, right, shares a laugh with (from left to right) students Joan Goldsworthy, Carli McGee and Heather Wood and teacher Jori Bowen during the awards ceremony at the 10th New Mexico High School Supercomputing Challenge. The Sandia Prep team took the prize in this year's challenge for its project, "Pattern Analysis of High Throughput Flow Cytometry Data."

Nearly 350 students competed in the Challenge. Fifty teams, including 11 finalist teams, heard talks from researchers at Los Alamos and toured the supercomputers they used during the Challenge.

Students from 41 schools spent the last year researching scientific problems and writing programs to solve them on computers at Los Alamos and Sandia national laboratories. About $36,000 in scholarships were awarded at this year's Challenge.

The goal of the Supercomputing Challenge is to increase knowledge of science and computing, expose students and teachers to computers and applied mathematics, and instill enthusiasm for science in high school students, their families and communities.

Researchers are collaborating on a new-generation HERT system that can transmit data in high-shock and low-shock environments, improving the reliability and reporting capability of the system. Using advanced manufacturing techniques and cutting-edge components, scientists aim to make HERT Mark II smaller and lighter than earlier designs.

In March, a research team from Los Alamos, Lawrence Livermore and Sandia national laboratories and the Department of Energy's Kansas City Plant tested HERT Mark in a Lawrence Livermore re-entry vehicle flown from Vandenberg Air Force Base in California to Kwajalein Island in the South Pacific. The system collected data successfully.

Before the recent flight test, researchers had tested HERT systems in an explosive environment. The team was able to collect and analyze data successfully from a series of explosive tests, lending further credibility to the systems' potential.

Los Alamos is focusing on HERT instrumentation for the W76 submarine-launched missile system. Researchers from Los Alamos, Lawrence Livermore, Kansas City and Sandia also will use HERT on other weapons systems in the stockpile. Funding for HERT research and development comes from DOE Defense Programs.

HERT units will become essential tools for evaluating the performance of the nation's stockpile by using mock nuclear components in actual flight conditions. This testing will help ensure the safety, reliability and performance of U.S. nuclear weapons.

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