

Supercomputing Challenge

Issue No. 31

Program Coordinator

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Program Description:

The Vision of the Supercomputing Challenge is to be a nationally recognized program that promotes computational thinking in science and engineering so that the next generation of high school graduates is better prepared to compete in an information based economy. The Mission of the Supercomputing Challenge is to teach teams of middle and high schools students how to use powerful computers to analyze, model and solve real world problems. The Supercomputing Challenge is a program encompassing the school year in which teams of students complete science projects using high-performance supercomputers. Each team of up to five students and a sponsoring teacher defines and works on a single computational project of its own choosing.

Primary Outcomes:

Educated citizens, desire of students to pursue higher education, potential future LANL hires.

Areas Served:

All New Mexico;

Grade Level:

Middle School (7-8th grade); High School (9-12th grade);

Leading Organization:

HPC

Program Address/Mailstop:

Supercomputing Challenge
HPC-3 MS T080

Number of Individuals Served by the Program per Fiscal Year:

About 300 students and 50 teachers

Year Program Started:

1990

Program Partners:

We try to partner with like programs such as NM MESA, MSA, UNM Arts Lab, Project GUTS, ...

Funding received:

\$150K

Resources/Materials provided to program participants:

access to computers at sponsoring sites (LANL, Sandia, universities, New Mexico Computing Application Center, ...)
access to consultants/project mentors

Other funding sources:

See <http://challenge.nm.org/sponsors.shtml>

Program Cost:

\$300K per year

Other learning objectives:

- place, problem or project based inquiry
 - problem solving
 - critical thinking skills
 - 21st century skills: time and project management, research, teamwork, technical writing, presentation skills
 - relationships with scientists and mathematicians
 - meets deeper level state standards
 - scholarships for seniors
 - educational field trips
 - career and college focus
 - online and face to face support for projects
 - teacher camaraderie in a professional learning community
 - science inquiry, advanced mathematics and computational science techniques for teachers
 - completion of Challenge Year leads to prizes, scholarships, plaques and cash rewards
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Best Practices:

Yes, the program continues to change each year trying to take advantage of new opportunities and shed practices that no longer work.

How program outcomes are accessed:

Follow up surveys, anecdotal information

Reporting Requirements:

A few sponsors request some information. We wish someone would provide the funds to do a formal external evaluation.

Cost per participant:

\$1K

Participant Application Process:

Register at <http://challenge.nm.org/> in September of each year.

Program Recruitment Initiatives:

Targeted Diversity Groups:

Type of Program:

Student Programs

Program Website/URL:

Projected Length of Program:

Ongoing

Primary funding source:

Government;

Program Evaluation:

Informal/Internal;
