LEGISLATIVE EDUCATION STUDY COMMITTEE
BILL ANALYSIS
53rd Legislature, 2nd Session, 2018

Bill Number HB186 **Sponsor** Fajardo

Tracking Number .209824.1 **Committee Referrals** HEC/HAFC

Short Title NM Tech Supercomputing Challenge

Original Date 1/30/18
Analyst Terrazas **Last Updated** 1/31/18

BILL SUMMARY

Synopsis of Bill

House Bill 186 (HB186) appropriates $100 thousand from the general fund to the New Mexico Institute of Mining and Technology (NMT) for the annual Supercomputing Challenge, a yearlong competition in which teams of students in sixth through 12th grade complete science projects using high-performance computers designed to get local students interested in science, technology, engineering, and mathematics (STEM).

FISCAL IMPACT

The bill appropriates $100 thousand from the general fund to the board of regents of NMT for expenditure in FY19 and subsequent fiscal years to support the Supercomputing Challenge program. Any unexpended or unencumbered balance remaining at the end of a fiscal year shall not revert to the general fund.

SUBSTANTIVE ISSUES

NMT is a long-time host of the Supercomputing Challenge, a program in which teams of students complete science projects using powerful computers. Each team of up to five students and a sponsoring teacher defines and works on a single computational project, a "real world" problem, of its own choosing that has measurable components. The program uses the term "computational science" to refer to science problems teams wish to solve and explain using computer models. Project advisers and the Supercomputing Challenge organizers and sponsors support the teams throughout the program. Teams who make significant progress can enter their projects in the competition for a chance to win awards, cash prizes, and scholarships. The competition is open to all sixth through 12th-grade students on a non-selective basis. There are no grade point, class enrollment, or computer experience prerequisites.

The Supercomputing Challenge is offered at minimal cost to the participants and school districts. It is sponsored by a partnership of federal laboratories, universities, and businesses. They provide food and lodging for the program kickoff seminars at NMT during which students and teachers

are shown computer modeling and parallel programming techniques, how to analyze data, write reports, and learn programming languages for successful completion of the challenge. Sponsors also supply time on the supercomputers when necessary. Employees of the sponsoring groups conduct training sessions at workshops and advise teams throughout the year. In the middle of the year, Sandia National Laboratories hosts a tour with talks and demonstrations of technology developed at the laboratory. The year culminates at Los Alamos National Laboratory in late April with a project expo and judging followed by an awards ceremony.

NMT received $60,000 in FY15 and $59,800 in FY16 in general fund appropriations for the Supercomputing Challenge, though the FY16 appropriation was reduced by $400 due to legislative reduction per Laws 2016, Chapter 11. The general fund appropriation was discontinued in FY17.

According to Supercomputing Challenge, over the past 27 years, about 10,500 students have participated in the Supercomputing Challenge. Male students have comprised 68 percent of participants and female students have comprised 32 percent. Hispanic students have comprised 24 percent of participants and Native American students have comprised 13 percent.

More than 200 New Mexico students and teachers from 55 different teams representing 25 schools from around the state submitted final projects for the 2016-2017 Supercomputing Challenge. Fifteen Los Alamos National Laboratory employees, 30 Sandia National Laboratories employees, and another 45 individuals from universities and businesses volunteered to work on the year-end expo and awards ceremony. The Los Alamos researchers served as finalist, expo, and scholarship judges. Santa Fe High School students took first place in the 27th Supercomputing Challenge in April 2017. In their project, "Urban Installation of Smog Reducing Materials," students simulated the effects of using smog-reducing materials on the air quality in a congested city. Other participating schools included:

- Albuquerque Academy
- Academy for Technology and the Classics
- Capital High School
- Desert Academy
- Nex+Gen Academy
- Hoover Middle School
- Jackson Middle School
- Los Alamos High School
- Los Alamos Middle School
- Los Lunas High School
- Los Lunas Middle School
- McCurdy Charter School
- Melrose High School
- Melrose Middle School
- Mesa Middle School
- Mesa View Middle School
- New Futures School
- Piñon Elementary School
- Portales High School
- Rio Rancho Cyber Academy
- Sandia Preparatory School
- San Juan College High School
- Santa Fe High School
- Saturday Science and Math Academy
- Taos High School

SOURCES OF INFORMATION

- LESC Files

DT/rab