

Science on the Move
Final Report
July 21, 2009

Project Overview:

Science on the Move provided K-12 students across South Dakota with high quality hands-on science instruction and access to state-of-the-art equipment over a period of six years (2003-2009). Coordinated by Black Hills State University's Center for the Advancement of Math and Science Education (BHSU/CAMSE) on behalf of the South Dakota Board of Regents, the project's two tractor-trailers served hundreds of school districts, including many of the state's most rural and remote. *Science on the Move* was originally conceived by a task force of business, university, civic, and education leaders. After initial setup of the vehicles by other state entities, the Board of Regents entered into an agreement with the Governor's Office and the Department of Tourism and State Development whereby BHSU/CAMSE would assume a coordination role and begin full-scale operations as of July 2003. The majority of funding over the project's six years was provided from the Governor's Future Fund. Noteworthy cost share was also provided by BHSU, and strong synergy was accomplished with key South Dakota science initiatives, both in sharing their forefront scientific research and in raising visibility of science as a discipline and as a career opportunity.

Project Impact:

Over the duration of the project, the mobile science labs visited 139 (86%) of the state's 161 public school districts plus an additional 25 private schools and 5 schools administered by the Bureau of Indian Affairs. The vast majority of these districts and schools received multiple visits in multiple years with visits typically spanning one to four days.

Over 10,000 classes of students conducted lab activities onboard the vehicles. In aggregate, over 185,000 student visits were logged, with over 40,000 visits in 2008-09 alone. The labs also provided service to general audiences at special events like South Dakota Space Days, the state fair, and an open house of the Sanford Underground Laboratory at Homestake.

To prepare science teachers to host Mobile Science Lab visits at their schools, weeklong institutes have been held each summer. Over 400 teachers have participated in these professional development opportunities, deepening their science content knowledge, learning how to use the specialized equipment onboard the trucks, and building their instructional capacity.

Feedback from students, teachers, districts, scientists, and the general public was highly favorable throughout the six-year period. Press coverage was also extensive and consistently positive.

Financial Report:

Below are the sources of funding that supported Mobile Science Lab operations:

| Funding Sources FY04 - FY09 | | |
|------------------------------------------------------------|--------------------|-------------|
| SD Governor's Office of Economic Development (Future Fund) | \$1,500,000 | 71% |
| BHSU In-kind Contributions (approx.) | \$500,000 | 24% |
| Synergistic grant funding through BHSU (approx.) | \$100,000 | 5% |
| Grand Total | \$2,100,000 | 100% |

Most of the startup costs to outfit the vehicles had already been invested prior to FY04, although the above total does include approximately \$100,000 for additional science equipment acquired after BHSU/CAMSE began operating the program. The total cost for operation of the program was \$350,000/yr on average, and of that, the Future Fund provided approximately \$250,000/yr. These resources supported two fulltime science teacher/drivers, vehicle maintenance, science supplies, travel expenses, curriculum development, and summer institutes for teachers. Project direction and administrative support were provided as in-kind contributions of Black Hills State, and all administrative overhead was waived.

Project Legacies:

Beyond the direct benefits to K-12 students and the general public, a wide array of lessons were learned, curricular materials developed, and teacher capacity increased. Advice for related efforts as well as instructional resources that were generated are available and will be maintained online for the foreseeable future by way of a BHSU/CAMSE website -- www.camse.org/scienceonthemove.

Alternate Funding Sources and Models of Operation:

As funding for *Science on the Move* was coming to an end and no new resources became available for FY10, project leaders invested hundreds of hours exploring possible alternatives. Among those were:

- 1) Corporate sponsorship;
- 2) Federal and foundation grants;
- 3) Legislative appropriation;
- 4) Payment by districts for continuation of the existing full-service program on a fee-for-service basis;
- 5) Payment by districts for just the use of the equipment at a reduced fee;
- 6) Parking of the labs and using them in a static mode at places such as the Kirby Science Center in Sioux Falls, the Discovery Center in Pierre, the Journey Museum in Rapid City, and the Sanford Laboratory at Homestake;
- 7) Sale of the vehicles and repurposing or distribution of the equipment; and
- 8) Usage of the vehicles by other state agencies or entities for other purposes.

The majority of those options had significant challenges or were untenable. Many school districts, for example, expressed appreciation for past service, but only a small fraction expressed willingness and ability to pay for the service. The science centers, the Journey Museum, and Sanford Lab all expressed great willingness to serve as partners and/or to host the service in some way, but none could commit operating expenses.

Ultimate Resolution:

In June of 2009, Mitchell Technical Institute (MTI) came forward with a plan to use the vehicles to enhance career and technical education in the state. Usage of the vehicles was transferred from BHSU to MTI on July 20, 2009. Much of the science equipment from the vehicles was transferred to Sanford Underground Laboratory at Homestake with the stipulation that BHSU/CAMSE continue to care for it and that it continue to be used to support K-12 science education efforts across the state for years to come.