

Request for Funding to LESC: SSP Scholarships for New Mexican Students

October 1, 2009

The Summer Science Program (SSP), having completed its 51st year of operation in California and seventh year in New Mexico—and more scientifically relevant than ever with its recent switch to observing Near Earth asteroids—submits this continuing funding request and summary report regarding the State’s 2009 appropriation of \$50,000 for full-tuition scholarships exclusively for New Mexico students.

Continued Funding Request: SSP’s 2010 budget (FY ending September 30) is \$453,000 for 72 students, about \$6,300 each. Although generous need-based financial aid is available to all applicants, four years of data show that offering full-tuition scholarships to New Mexicans generates far greater enthusiasm and participation, resulting in significant long-term benefits to the students. Accordingly, SSP requests a recurring appropriation of \$50,400 per year (eight students at \$6,300 each) from the 2010 Legislative session for SSP 2010-11.

Project History and Summary of 2009 Program

Scholarships for New Mexican Students (2009): Early in 2009, the NM State Legislature, in support of the continuing success of SSP’s New Mexico free-tuition policy, appropriated \$50,000 to be administered by New Mexico Tech for NM residents who attend SSP. In July 2009, after extensive statewide recruiting, eight NM students were offered admission and six enrolled. (One admitted student’s family preferred that she stay home to participate in family activities, and one filled his summer with an internship, teaching assistanceship, and personal research on nanoscale patterns.) The six attendees came to SSP from Alamogordo HS, Albuquerque Academy, Carlsbad HS, Hot Springs HS, and two from La Cueva HS (student names upon request).

History of SSP’s NM Scholarship Policy: In 2005, Los Alamos National Laboratory funded full scholarships for any NM resident enrolled in SSP, thus removing all financial impediments for the state’s brightest math/science teenagers. It was an experiment; SSP had never before offered tuition grants based upon state residency. As shown in the table, the upswing in NM applications and acceptances was spectacular. Completed applications increased 16-fold from 2004 to 2005. In 2006, however, LANL’s reorganization resulted in financial support for SSP dropping from \$54K to zero. SSP, wishing to maintain momentum in NM, decided to self-fund scholarships for 2006. This was even more successful; NM enrollment jumped to eight. Other than California, this was the greatest number of enrollees from one state in SSP’s history. Starting in 2007, NM’s legislature agreed to fund these scholarships.

For three years, completed applications have stayed at about 20, about a third of whom are admitted and enroll.

Year	NM Applications		NM Students enrolled
	started	completed	
1959–2000	<1/yr	<0.5/yr	<0.2/yr
2001	2	0	0
2002	1	1	1
2003	5	1	1
2004	12	2	1
2005	61	32	5
2006	48	28	8
2007	31	20	5
2008	38	19	8
2009	38	20	6

Scholarships for New Mexican Students (2010): These results are good, but we intend to improve them in 2010. Our goal is to get at least one or two completed applications from every large public high school in the state. Applications for SSP 2010, prominently noting continuation of the NM full-tuition waiver, will open on December 15. Over the succeeding 90 days, we will publicize SSP widely to prospective students. Directing the effort locally will be Robin Hastings, a former SSP faculty member and current software engineer at NMSU. He and other volunteers will make personal contacts at high schools to supplement our mailings.

Diversity: Free tuition is very effective in encouraging applicants from economically disadvantaged families, many of whom are also underrepresented minorities (URMs). To further publicize this in NM, we cooperate with several NM-based organizations focused on URMs (ENLACE, MESA, etc.). SSP does not discriminate in admissions on the basis of gender, citizenship, residence, national or ethnic origin, or on the basis of application for financial aid. Women and URM applicants are especially encouraged. All applicants receive equal consideration. Our typical class is 40% female and 10% URM. We seek to increase both these percentages. A full report on SSP’s diversity recruiting efforts is available upon request.

Recruiting and Selection: About 40% of prospective applicants learn about SSP from teachers, alumni, or classmates. Self-initiated web searches account for 30%, mailings for about 25%. In addition, we actively recruit in NM, emphasizing the free tuition, utilizing:

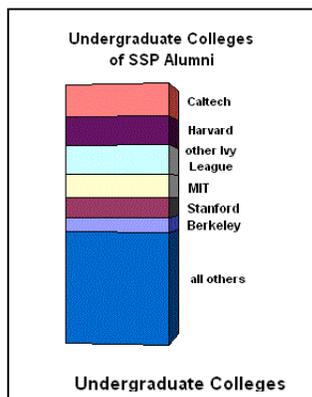
- "Dear Educator" packages, including a classroom poster, to 146 science/math teachers and counselors in NM high schools, 69 MESA program sponsors, and 46 Gifted and Talented district coordinators (lists provided by NM PED).
- Direct mail and emails to every potential applicant in NM we can identify, from PSAT math scores and lists shared with us through our affiliations with the Admissions Depts. of NM Tech, Caltech, and MIT.
- Handouts to 1,000 students and teachers participating in the State Science Fair at NM Tech.
- Handouts to every teacher participating in the NM Science Olympiad.

Students complete a college-like application; there is no fee, Selection criteria are rigorous, stressing academic excellence and motivation. We look for students with lifetime potential to make the significant scientific and technological achievements upon which America's future depends.

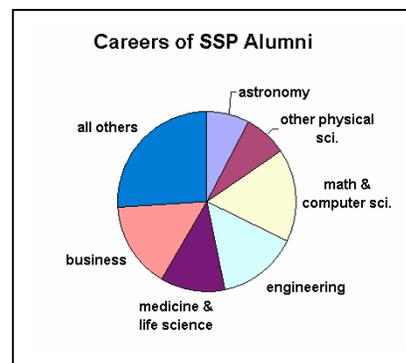
SSP's Mission: From Sputnik/Space Age beginnings in 1959, SSP is one of the world's oldest, most prestigious, and most challenging pre-college science enrichment programs. In 2003, SSP expanded to a second campus at New Mexico Tech in Socorro, with financial and other support from Tech, LANL, and Sandia National Lab. SSP is affiliated with Caltech, Harvard/Smithsonian Minor Planet Center, and MIT. For six weeks each summer, SSP brings 36 high school science students to each campus—the brightest rising seniors from around the nation and several foreign countries—and provides an intense, college-like experience that inspires them to realize their potentials in college and beyond.

Curriculum: By day, students attend 140 hours of college-level lectures: 30% in physics, 30% in math, 25% in astronomy, and 15% in computer programming and other related areas. By night, working in teams of three, they take telescopic observations of a Near Earth asteroid, measure them precisely, and write software to convert their data into the asteroid's orbit. Homework is assigned and corrected, but not graded. Students attend SSP for the intellectual challenge; neither high school nor college credit is given. Ten prominent guest speakers and field trips to places like the VLA, Apache Point Observatory (in Sunspot), and Carlsbad Caverns round out the curriculum.

Colleges and Careers: SSP challenges these top students beyond anything



they have previously experienced and gives them a taste of real research and teamwork. About 60% of SSPers go on to Caltech, MIT, Harvard/other Ivies, Stanford, or Berkeley. Over 90% major in science, math, technology, or engineering, with almost 40% receiving PhD's. SSP now has about 2,000 alumni (aged 17-68), many of whom feel that the six weeks of living, working, and studying with other intelligent and motivated teens was a turning point in their lives. Not surprisingly, most of SSP's funding comes from alumni donations.



On behalf of SSP, please accept our gratitude for the LESC's confidence in and support of some of the brightest future scientists in New Mexico. For more information, please contact me or go to www.ssp.org.

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