

## Scholarships for New Mexican Students

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The Summer Science Program (SSP), now in its 49th year of operation in California and fifth year in New Mexico, seeks \$72,000 to fund a third year of full-tuition scholarships exclusively for New Mexico students.

**SSP's Mission:** From Sputnik/Space Age beginnings in 1959, and with university support from Caltech, Harvard-Smithsonian, Harvey Mudd, Pomona, Stanford, and UCLA, SSP is one of the nation's oldest, most prestigious, and most challenging pre-college science enrichment programs. In 2003, SSP expanded to a second campus at New Mexico Tech, with the support of NMT, Los Alamos National Lab, and Sandia National Lab. 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.

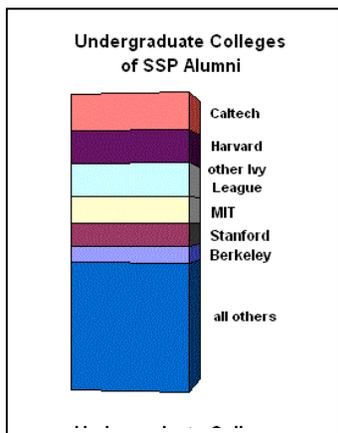
**Curriculum:** By day, students attend 140 hours of college-level lectures: 30% in mathematics, 30% in physics, 25% in astronomy, and 15% in computer programming and other related areas. By night, working in teams of three, they take telescopic observations of an asteroid, measure them precisely, and write software to convert their measurements into a mathematical description of 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. Two prominent guest speakers each week and field trips to places like the VLA and Apache Point Observatory (in New Mexico) and JPL and Table Mountain Observatory (in California) round out the curriculum.

**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%. We send brochures (about 5,000) to a subset (including all New Mexicans, females, and underrepresented minorities [URMs]) of all high schoolers who have asked to be on Caltech's mailing list. In addition, we actively recruit in New Mexico, emphasizing the free tuition, by mailing or distributing:

- "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);
- 1,000 handouts to students and teachers participating in the State Science Fair at NMT;
- handouts to every teacher participating in the NM Science Olympiad; and
- brochures to URM juniors in NM (and nationwide) scoring 66 or higher on the PSAT math test.

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 our future depends. 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. Young women and URM students are especially encouraged to apply. All applicants receive equal consideration. Students may choose to attend either campus; the curriculum is identical. Our typical class is 40-45% female and 10% URM.

**Colleges and Careers:** SSP challenges these top students beyond anything they have previously experienced and gives them a taste of real research and teamwork. As the chart to the left shows,



about 60% of SSPers go on to Caltech, Harvard and other Ivies, MIT, Stanford, or Berkeley. Over 90% major in science, technology, engineering, or math, with almost 40% receiving PhD's. Career choices are shown in the chart below (note that most of the business careers are science-oriented). SSP now has almost 2,000 alumni (aged 16-65), many of whom feel that those six weeks of living, working, and playing with other intelligent and motivated teenagers was a turning point in their lives. Most of SSP's funding comes from alumni donations.

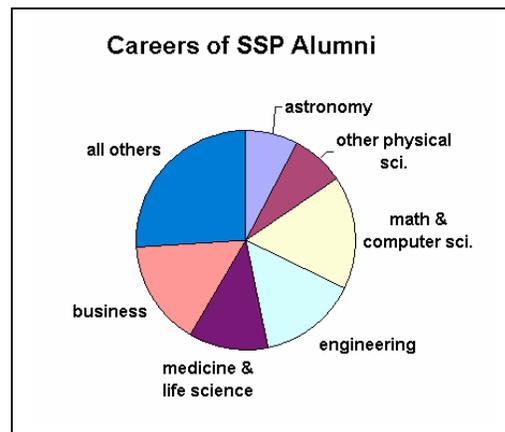
**Scholarships for New Mexicans:**

In 2005, Los Alamos National Labs agreed to fund full scholarships for any New Mexico resident enrolled,

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 residency. As shown in the table below, the upswing in applications and acceptances by New Mexican students was spectacular. Completed applications increased 16-fold from 2004 to 2005. In 2006, however, following its reorganization,

Year	NM Applications		NM Students admitted
	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
<b>2005</b>	<b>61</b>	<b>32</b>	<b>5</b>
<b>2006</b>	<b>48</b>	<b>28</b>	<b>8</b>

LANL's outreach funding was greatly diminished, and its financial support for SSP dropped from \$54,400 to zero. SSP, faced with this huge deficit, but wishing to maintain momentum in New Mexico, decided to self-fund scholarships for 2006. It was even more successful; enrollment of New Mexicans jumped to eight.



Other than California, this is the greatest number of enrollees from one state in SSP's history. Nonetheless, while it is clear that the New Mexico free-tuition policy has been extremely successful, SSP does not have the resources to continue it without outside support.

**Diversity:** The offer of free tuition is most effective in encouraging applicants from economically disadvantaged families, many of whom are also underrepresented minorities.

**Funding Request:** SSP's 2007 budget is \$440,000 for 72 students, about \$6,000 each. Although generous need-based financial aid is available to all applicants, the data show that offering full scholarships to New Mexicans generates far greater enthusiasm and participation. Accordingly, we request a grant of \$72,000 for 2007, which would make it possible for SSP to admit 12 of New Mexico's most promising young science students next summer.

--Stephen L. Cotler, Vice-Chairman