California Polytechnic State University

Se Sept. 4, 2002

FOR IMMEDIATE RELEASE

Contact: Amy Hewes
(805) 756-6402

Cal Poly Engineering Student Wins Top Award for Satellite Design Paper

SAN LUIS OBISPO - A Cal Poly electrical engineering student took first place in the student competition section of the 16th Annual American Institute of Aeronautics and Astronautics Conference on Small Satellites, beating four doctoral students and one master's student from other universities in the final round of judging.

Jake Schaffner, a Cal Poly undergraduate from Arroyo Grande, won the award for his paper, "The Electronic System Design, Analysis, Integration, and Construction of the Cal Poly State University CP1 CubeSat." The conference was held at Utah State University in August.

For the AIAA competition, students were invited to submit papers about relevant study and research related to small satellites, their systems and subsystems, mission concepts and related infrastructure. Of 34 students who initially submitted papers, six were selected as finalists. At the conference competition, each finalist made a 12-minute oral presentation and then answered questions for three minutes.

Schaffner was then unanimously selected as the first place winner.

Schaffner's work centers on the Cal Poly Picosatellite Project, known as PolySat. PolySat involves a multidisciplinary team of undergraduate and graduate engineering students working to design, construct, test, launch and operate a CubeSat, also known as a picosatellite. A CubeSat is a class of miniature satellites that have a maximum mass of 1kg and are cubes measuring 10 cm per side.

"This was great for the Cal Poly CubeSat program because people are understanding that Cal Poly is different from the other universities because we are so practical," says Schaffner. "I think what impressed the judges most was the systems approach to engineering that was reflected in my paper. The other papers focused on specific sub-systems, but mine looked at how it all fit together within the constraints of the CubeSat."

The satellite the PolySat team has been developing is known as CP1. It is designed with the objective of providing a reliable "bus" system to allow for flight qualification of a wide variety of small sensors and attitude-control devices originating from industry, government or internally from other research projects conducted at Cal Poly.

For the first launch, CP1 carries a sun sensor developed by Optical Energy Technologies and an experimental magnetorquer developed at Cal Poly by undergraduate students. (A magnetorquer creates a magnetic field to help controllers properly orient satellites in space.) They hope to launch CP1 by spring 2004.
Schaffner said, "Personally it just opens up huge doors for me. There were 500 people in the room, including representatives from the major aerospace companies, all wanting to shake my hand and congratulate me. It was a once-in-a-lifetime experience. The judges were handing me their cards and inviting me to give them a call when I graduate. Now I'm choosing where to go next, rather than having to accept whatever comes along."

-30-