# Colorado Space Grant Consortium, Lockheed Martin To Develop CubeSat

Students from the Colorado Space Grant Consortium (COSGC) have teamed with Lockheed Martin to develop a miniature satellite, known as ALL-STAR, which stands for Agile Low-cost Laboratory for Space Technology Acceleration and Research.

The ALL-STAR program, designed to inspire and develop America's future technological workforce, will provide students hands on experience in applying science, technology, engineering and math skills to building operational space systems. Lockheed Martin funded the program and company engineers from Sunnyvale, Calif., Palo Alto, Calif., Newtown, Pa., Albuquerque, N.M., and Denver are supplying their system engineering, program management and systems integration expertise to mentor the COSGC students as they design, develop, manufacture and deliver the CubeSat.

ALL-STAR, a three unit (3U) CubeSat bus with fully functional miniature subsystems, will be designed to support one year on-orbit operations for a variety of space-based research payloads. ALL-STAR will measure 10 centimeters by 10 centimeters by 30 centimeters, weigh approximately 4 kilograms (8.8 lbs), and operate on a power output similar to a night light. ALL-STAR will be the first in a new series of CubeSats developed by COSGC students, as the spacecraft bus will be reproduced and evolved to support future missions.

"We are proud to partner with the Colorado Space Grant Consortium to teach and inspire these bright students and demonstrate the ability to produce small, affordable, reproducible and rapidly deployable space systems," said Wanda Sigur, vice president of engineering for Lockheed Martin Space System Company. "With our advanced small satellite expertise matched with the enthusiasm and innovation of these students, I am fully confident the team will deliver mission success on the ALL-STAR program."

COSGC, headquartered at the University of Colorado at Boulder, is a state-wide program that provides Colorado students access to space through innovative courses and real-world hands-on satellite programs. COSGC involves 16 Colorado colleges, universities and institutions and is funded by NASA as part of National Space Grant Program.

"The Colorado Space Grant Consortium is looking forward to strengthening its already robust partnership with Lockheed Martin as we develop the ALL-STAR CubeSat together," said Chris Koehler, director of the COSGC. "This program will provide exciting opportunities for our students to get real-life, hands on experience and learn from the mentors and systems integration experts at Lockheed Martin."

CubeSats are a class of small satellites developed to a standard CubeSat specification first released in 1999 by California Polytechnic State University. With fast and affordable development cycles, CubeSats are ideal for a variety of applications including scientific and academic research, technology demonstrations and operational missions with small, lightweight sensors.

Lockheed Martin Space Systems Company has a rich tradition of working with COSGC for more than a decade to encourage tomorrow's scientists, engineers, inventors and business leaders to explore their creativity and apply their ideas today.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 136,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation's 2009 sales from continuing operations were $44.5 billion.

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