

RESEARCH

at the Space Vehicles and Directed Energy Directorates is broad and varied.

At the **Albuquerque, New Mexico** location, topics include:

- Space Electronics
- Molecular Electronics
- Composite Materials for Space Structures
- On-Orbit Energy Storage Technologies
- Spacecraft Dynamics Control Systems
- Spectral-Polarimetry for Space-Based Surveillance
- Composite Flywheel Technology for Spacecraft Stabilization and Energy Storage
- Space Power

At the **Bedford, Massachusetts** location, topics include:

- Space Infrared Emission
- Ionosphere Climatology
- Ion-Enhanced Combustion of Jet Fuels
- Space Weather

At the **Sunspot, New Mexico** location, topics include:

- Analysis of Solar Corona
- Improved Solar Observing Optical Network
- Solar Mass Ejection Imaging

At the **Maui, Hawaii** location, topics include:

- Advanced Astrodynamic Techniques for Space Surveillance
- High-Performance Computing for Scientific Applications



Cheryl-Annette Kincaid, University of North Texas masters student, explains the procedures for data processing from AFRL's Solar Mass Ejection Imager instrument aboard the Coriolis spacecraft.



Space Scholar Leslie Sasa, a PhD candidate from UCLA, polishes graphite nano-platelet composites prior to inspecting the samples under a scanning electron microscope to determine platelet alignment and dispersion within the laminate.



Space Scholars

SPACE SCHOLARS PROGRAM

Looking for an exciting, challenging summer experience?

Here is an opportunity in space science and engineering you cannot afford to miss!



SPACE VEHICLES DIRECTORATE
AIR FORCE RESEARCH LABORATORY

THE SPACE SCHOLARS PROGRAM

Is conducted by the Air Force Research Laboratory's Space Vehicles Directorate, which has major facilities at Kirtland Air Force Base, Albuquerque, New Mexico; Hanscom Air Force Base, Bedford, Massachusetts; and the National Solar Observatory in Sunspot, New Mexico. The AFRL's Directed Energy Directorate is also sponsoring Space Scholar research at the Air Force Maui Optical and Super Computing Center in Maui, Hawaii.

PURPOSE

Space Scholars participate in a unique summer program that could lead to full-time employment working to satisfy current and future Air Force space technology needs.

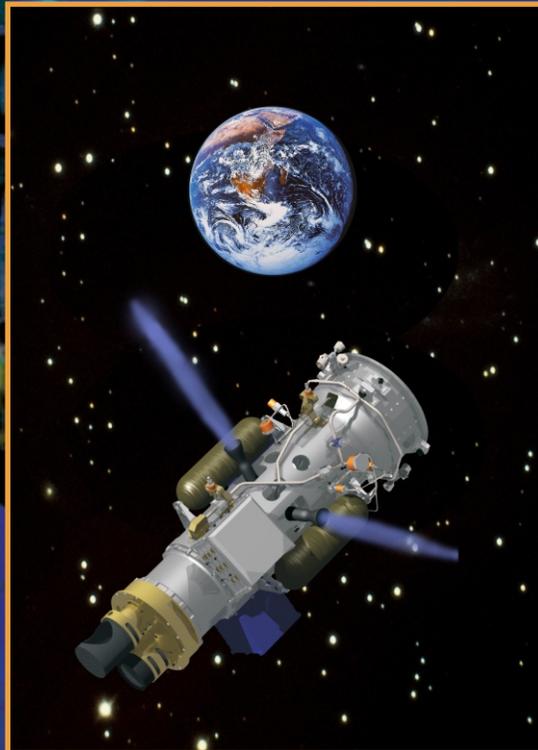
PROGRAM

The Space Scholars Program offers select students opportunities to conduct specific research which is mentored by nationally recognized science and engineering experts.

Descriptions of current research topics appear on our web site, and applicants are encouraged to contact listed mentors specializing in the student's particular area of interest.

Successful applicants will research novel projects designed to advance national military space technology and science. Students are also encouraged to coauthor an article—based on their summer research—for submittal to a refereed scientific journal.

Motivated undergraduate juniors and seniors, masters and doctoral students with top academic credentials in scientific and engineering fields are invited to apply. Outstanding letters of reference are required. Only US citizens are eligible.



Application materials and information regarding additional research topics can be obtained on our web site:

[Http://www.vs.afrl.af.mil/Spacescholars/](http://www.vs.afrl.af.mil/Spacescholars/)



Jason Ash, PhD candidate from South Dakota School of the Mines and Technology, adjusts the actuators of the world's only tri-axial load frame, used for measuring stress-strain behavior of composite materials.



During the end-of-the year poster session, Dr. Stephen Chu, a visiting Nobel Laureate from Stanford University, listens to PhD candidate Cole Corbin also from Stanford University as he discusses his research results on Composite Flywheel Technology Development.



With other Space Scholars, Phil Farias, UCLA masters student, discusses how to best use experimental input-output data to develop dynamic models for a space-based telescope concept. The dynamic models are to be used for control system design and analysis for the telescope.