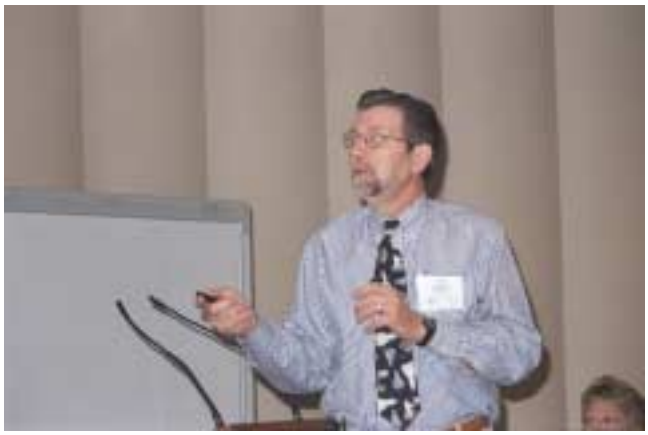
The Forum

The Forum was a stimulating two-way exchange of ideas, with university teams presenting the results of their studies and NASA, industry, and others presenting recent advances in space exploration and plans for the future.

Dr. Kathleen Johnson, Education Manager at the Lunar and Planetary Institute, gave the welcoming address to the participants at the Fourth Annual HEDS-UP Forum.

Dr. Paul Spudis, Deputy Director and Staff Scientist at the Lunar and Planetary Institute, discussed the advantages to exploring the Moon in the near future.



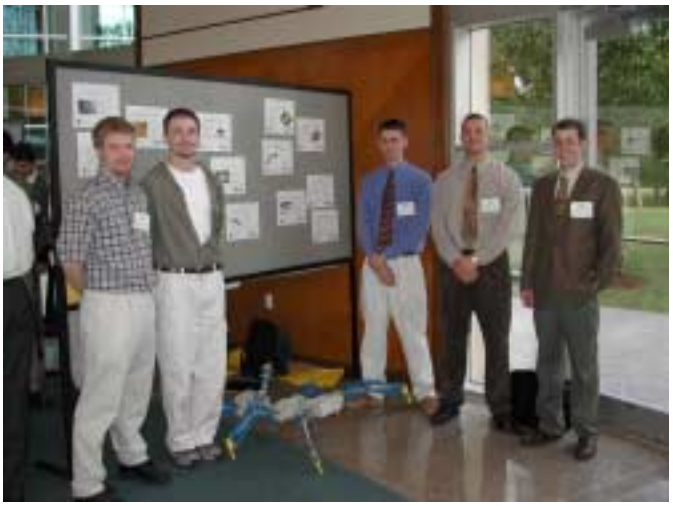
Dr. Alex Ignatiev, professor at the University of Houston–Clear Lake, addressed the Forum on the construction of solar cells on the Moon.

Kathleen Johnson and Mike Duke officially welcoming students and faculty advisors to the Fourth Annual HEDS-UP Forum. Dr. Duke later spoke to the audience on future goals and initiatives for the HEDS strategic enterprise.

The Teams

The research team of the University of Washington, under the direction of Dr. Frieda Taub, studied a closed ecological system to support animal grazer populations.

Graduate students from the Georgia Institute of Technology, under the direction of Dr. John Olds, studied a possible human rescue mission to the asteroid 16 Psyche based on a failed Mars mission scenario.

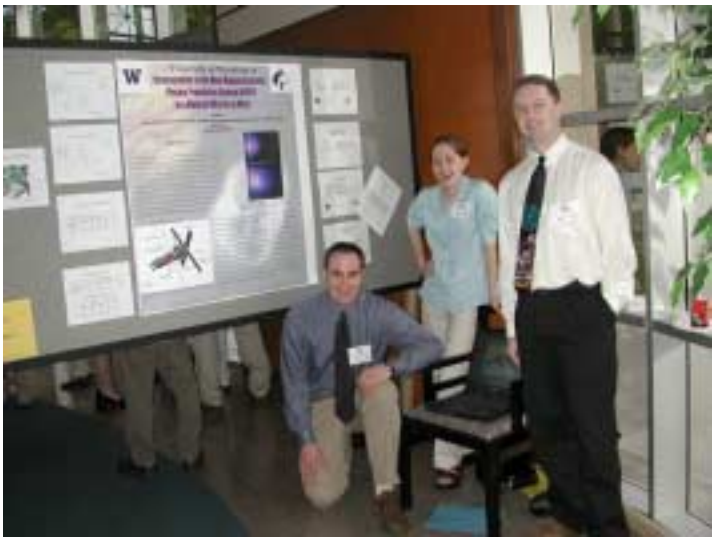


The team members of Rowan University developed an insect-like rover named the MILLIPEDE, under the management of Dr. Eric Constans and Dr. Anthony Marchese.

The student team of Penn State, under the advisement of Dr. Mike Jacobs, proposed an asteroid mining mission.

Team members of the University of Colorado at Boulder designed a hyperbaric chamber pass-through mechanism, under the advisement of Dr. Kurt Maute.

The University of California students studied an advanced two-system space suit with direction from Professor Tom Budinger (department chair) and Dr. Larry Kuznetz (former NASA scientist).



The team members of the University of Washington presented missions to Mars incorporating the Mini-Magnetospheric Plasa Propulsion (M2P2) system under the direction of Dr. Adam Bruckner and Dr. Robert Winglee.

The JFEET Team from the Colorado School of Mines designed a system for water extraction from the martian soil, under the direction of Dr. Barbara McKinney and Dr. Bob Knecht.

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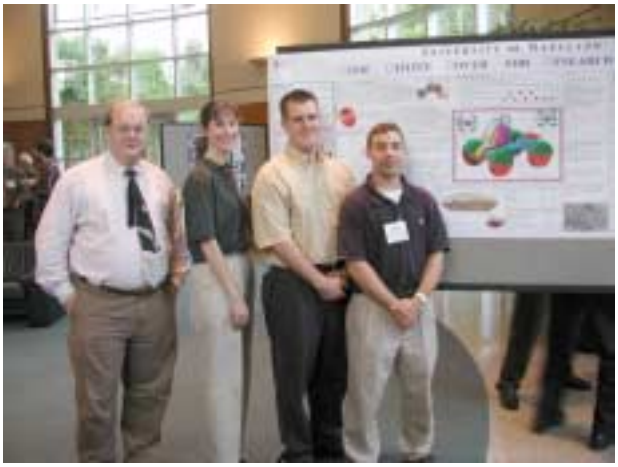
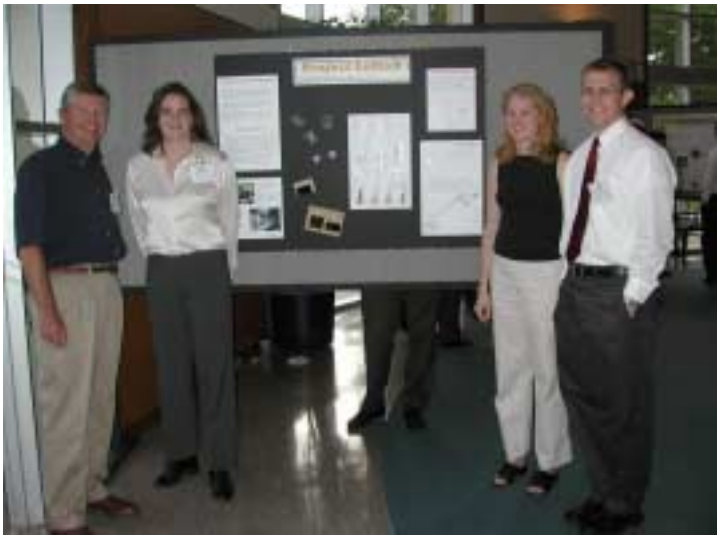


The University of Maryland graduate students contributed a design of a utility rover for research operations on Mars, advised by Dr. David Akin.

The team members of the University of Maryland developed the Clarke Station, an artificial gravity space station, under the advisement of Dr. David Akin and Dr. Mary Bowden.

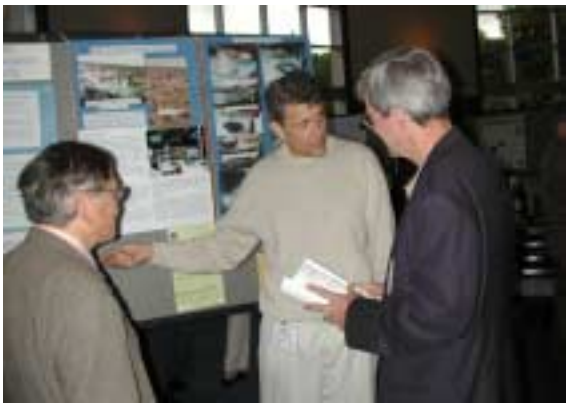
The students of the Massachusetts Institute of Technology designed a Deployable Instrument Package for Paleontological Research (DIPPR), under the guidance of Dr. K. V. Hodges.

The students of the University of Colorado at Boulder presented Project LaMaR, a laser-powered Mars rover, directed by Dr. Lisa Hardaway of UC Boulder and Mark Henley and Dr. Seth Potter of The Boeing Company.



The team of Embry-Riddle Aeronautical University, directed by Dr. Mahmut Reyhanoglu, contributed a design of a martian communications outpost.

The Poster Session



Advisor Larry Kuznetz of the University of California, Berkeley, discusses one of the student research projects with judges Lewis Peach (USRA Headquarters) and David Gan (University of California, Berkeley).

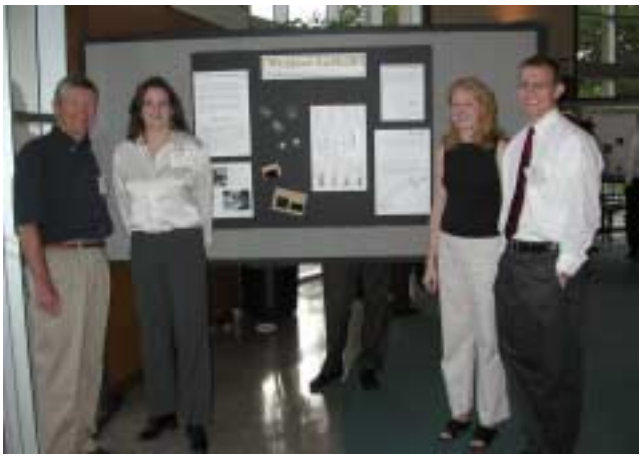
The team from Pennsylvania State University shows off their asteroid mining proposal.

Rowan University and the MILLIPEDE.

A student and advisor use a few moments to revisit data and finalize their strategic plans.

The Winners

A panel of judges based their awards on both a written report and the oral presentation made to the Forum. And the winners are . . .



First place went to the University of Colorado's Project LaMaR team for their laser-powered Mars rover.

The University of Maryland team was awarded second place for the Clarke Station, an artificial gravity space station.

Team members from the Georgia Institute of Technology received the Outstanding Award for their asteroid rescue mission.