

# NASA competition means business for students



NASA JSC Photo 2000-04497 by James Blair

The University of Illinois at Urbana-Champaign, Office of Strategic Business Initiatives' student team came up with plans for a Mars Republic that won top honors in the NASA Means Business student competition. Shown above, left to right are Lee Steffen, Caroline Blanchard, Patrick Elder, Team Leader Albert Burgos, Carlos Herrera, Team Mentor Normand Paquin, Shannon Taylor, and Jennifer Cox. Not shown are Wyoma vanDuinkerken, Jill Hjertstedt, Nancy Jeckel, Kristen Mattingly, Brian Schwartz, Marianne Steadley, and Jayganes Venkat.

**T**hey've got ball caps and T-shirts, a list of related books, movies and links to other Web sites and they're even looking for corporate sponsors. Sounds like any of a million different Web sites where fans or hobbyists gather to share, trade, motivate and inform each other, right? But this site isn't for any earthly endeavors – this is a site designed to drive exploration to Mars.

Mars Republic is an online community designed to attract and unify Mars enthusiasts and essentially to create a virtual Mars community as a stepping-stone to a real Mars colony. As ambitious as that sounds, you may be further impressed to know that the site, and the business plan behind it, is created by students.

The plan described above is the Grand Prize-winning product of the University of Illinois' team in this year's NASA Means Business student competition. One of five finalist university teams, they presented their honed and refined "Customer Engagement" proposal for Mars exploration at the Lunar and Planetary Institute last month. NMB is an annual student competition founded by the Texas Space

Grant Consortium designed to involve students from the non-traditional academic fields into the space industry.

"Typically, fields of study such as marketing, communications and public administration and those types are missed in NASA outreach activities, so we are missing 80 percent of most universities in the programs that we conduct here," said Hum Mandell, outreach assistant, Advanced Development Office. "The NASA Means Business program is an opportunity to attract some of those types of fields in a real NASA project."

The teams are encouraged to combine various disciplines and may enlist the private sector. This year, teams were asked to develop a Customer Engagement plan for Mars exploration, a program to generate interest and elicit commitment and support from space program customers.

Ten universities sent in initial proposals to NMB organizers but only five proceeded to the finalist stage where they presented to a panel of judges as well as team members from the competing schools. The five universities represented

were: Georgia Tech, Stanford, University of Colorado, University of Illinois and University of Texas. A sixth team from the Massachusetts Institute of Technology and the Harvard Business School participated as a non-competing legacy team from last year's NMB program.

Throughout the spring semester, the students partner with NASA mentors (scientists, engineers and administrators) who help guide their progress. The teams also execute an outreach program outlined in their proposal. The University of Colorado's proposal strongly focused on building customer engagement through education, therefore their outreach program geared toward schools.

"I thought personally that if we have an educated base of constituents then that's going to force the media coverage, which then is going to force the Senators," said Danica Reno, freshman aerospace engineering major. "So we should start with public education, education in the schools. By definition, children are going to educate the parents because they are forced to deal with whatever the kids are learning."

With that in mind, the team visited Boulder-area schools and presented the "Clean Energy Experiment," a model that demonstrates the conversion of electricity and water into hydrogen and oxygen and then back to water and energy.

The outreach was a big success with the schools involved.

"It's difficult to interest kids so we started with hands-on activities" said Amy Earley, a freshman sociology student also on the UC team. "We learned from the beginning to get them involved and let them learn on their own. The teacher told us later, she was surprised herself how much they learned in such a little time and invited us back to teach every year until we graduate."

Similarly to UC's team, the UI team was interdisciplinary, including students from the Masters of Business Administration program as well as Industrial Design, Political Science and History.

"The diversity was a challenge but it gave us the luxury to draw from other people's rich experiences to help build up the concept," said Albert Burgos, team leader and MBA student. "Once we were able to facilitate people's ideas in an effective manner, our diversity became our strength to help create Mars Republic."

As winners of the competition, the team receives a five-day trip for two members to go to Washington D.C. to present their proposal to legislative leaders and NASA Headquarters. But according to the students, the real reward is the contacts they make and the experience gained from putting their education into practice.

"You learn a lot from this event because it is designed to be interdisciplinary," said Troy Hudson, a member of last year's MIT/Harvard winning team. Now, as a material science/engineering and planetary science graduate, Hudson will be going to work at Ames Research Center. "You learn how NASA works and the procedures for communication, as well as learning about how venture capitalism and the public and government interact. Overall, it's a good chance for students to apply what they've learned in the academic setting."

Competition Guidelines for NMB 2001 are to be released in September 2000. ■

More information on NASA Means Business Student Competition and the 2000 teams can be found at <http://www.tsgc.utexas.edu/nmb/>.

## Plaque hanging tradition continues...

**N**o mission is complete without the customary "hanging of the mission plaque" ceremony. STS-101 was no exception, and as our space program expands, each mission's success is attributed to many teams, in many places.

Representing the ISS flight control operations, two plaques were added to the walls in the Blue Flight Control Room – one for the increment operations between STS-96 and STS-101 and a second for joint operations during STS-101. ISS Lead Flight Director Paul Hill selected the honorees to hang the plaques in the BFCR before a capacity crowd of flight controllers, managers and the STS-101 crew.

The ISS increment plaque was hung by the lead ISS EPS Flight Controller Dave Crook representing the Power, Heating and Articulation Control (PHALCON) team. As recognized in their citation, the team received the honor for their "rapid failure analysis and quick, effective resolution of electrical system failures. This team's critical contribution to ISS operations serves as a model for all other disciplines."

The ISS Station Duty Officer team, represented by Mark Martin, received honorable mention for their service, specifically "providing continuous, effective ISS control and monitoring and their instrumental role in long term, safe ISS operations through Increment-0."

In recognition of her contributions during STS-101, ISS Program Launch Package Engineer Karen Engelauf hung the mission plaque. As noted in her citation, Engelauf was recognized for her "unsurpassed knowledge of the entire mission, from manifesting and ground processing, to the orbit operations, resulting in her indispensable role in planning shuttle flights to ISS."

Lead ISS Thermal Flight Controller Brent Rowland received honorable mention during the ceremony for his "initiative assessing numerous ISS configurations, developing thermal control strategies to support internal operations pre-flight and in real-time, as well as outstanding real-time flight control" also during STS-101.

For space shuttle operations, Flight Dynamics Officer Dan Adamo hung the plaque.

"Dan did a great deal of preflight work to devise an altitude management plan," said Phil Engelauf, lead flight director for STS-101. "This helped maximize launch opportunities for the shuttle while minimizing propellant use by the station."

Our current success wouldn't be possible without the work of the Houston Support Group in Moscow. The team there recently hung three plaques recognizing key players in the support operations in Russia.

"It's very difficult to pick who gets the honor when you feel everyone did a great

**“FGB Flight Director Yuri Kolchin and Deputy FGB Flight Director Yuri Budnki attended our ceremony at the HSG Control Room and were very complimentary of everyone. They send the MCC-Houston flight directors and flight controllers their best regards and congratulations on a very successful mission.”**

—Patricia Moore, NASA, Operations Lead

job," said Patricia Moore, operations lead. "I was very pleased with the support from every team member here in Moscow before and during the flight."

Kimberly Goerig, Russian segment specialist, who has been in Moscow for the last three missions, was asked to hang the 2A.1 ISS plaque.

"In addition to doing a great job on console, Kimberly has improved the efficiency and working procedures of the HSG," said Moore.

Carla Haroz, Environmental Control and Life Support Systems, (ECLSS), hung the 2A.2a ISS mission plaque.

"Carla came in just before the flight and has done a lot of good work in a very short time," explained Moore. "With all of the smoke detector problems, Carla proved she had established a solid working relationship with her Russian counterparts and greatly

contributed to resolving the situation."

Tricia Mack, EVA officer assigned to the HSG, assisted Haroz with the 2A.2a ISS plaque in recognition of her poise while surrounded by "12 concerned Russians during the EVA when the OTD conflict occurred," said Moore. "She was key in resolving this situation."

And last, but not least, in recognition of their "close vigil over the FGB batteries for the past months," Eugene Schwanbeck, PHALCON, and Sergei Sverdlin, Russian segment specialist, were bestowed the honor of hanging the 2A.2a crew plaque.

"These two flight controllers dug out tons of information and helped keep the MCC-H flight control team apprised of the situation for months preceding the flight," said Moore. "They were also key in resolving situations which arose after the battery removal and replacement during the flight." ■