

MARSHALL STAR

Serving the Marshall Space Flight Center Community

Jan. 31, 2002

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SLI seeks next round of proposals from industry, academia in late March

by Lynnette Madison

NASA's Space Launch Initiative is seeking its second round of proposals on technologies, experiments and other risk-reduction activities from industry and academia — taking another step toward making space launch safer and more affordable in the future.

Technical proposals are due March 27.

NASA expects to award multiple contracts totaling approximately \$500 million in September.

The Space Launch Initiative (SLI), also known as the Second Generation Reusable Launch Vehicle Program, is a NASA technology development program designed to substantially improve safety and reliability of space travel, while reducing costs. The program — managed by the Marshall Center and supported by NASA Centers across the country — focuses on improving access to space for America's 21st century missions by increasing safety

See SLI proposals on page 3

Scientists check ability of g-LIMIT experiment

One of the experiments scheduled for launch this May is g-LIMIT, an in-house Marshall Center project designed to improve the microgravity environment of experiments operating in the Microgravity

Science Glovebox. A prior system, STABLE, was flown aboard the Space Shuttle and demonstrated the feasibility of this technology.

The g-LIMIT flight unit is undergoing command and data handling tests in the Microgravity Science Glovebox Engineering Unit at the Microgravity Development Lab, Bldg. 4493.

"These tests will verify the ability of g-LIMIT to respond properly to commands through the International Space Station communications systems," said Ken Fernandez, the project manager.

After launch, Dr. Mark Whorton, of the Advanced Concepts Department of the Space Transportation Directorate and the project's principal investigator, will perform experiments designed to demonstrate and optimize g-LIMIT's performance as a vibration isolation system. "When these experiments are completed, g-LIMIT will become a permanent part of the Microgravity Science Glovebox and will be used by glovebox experiments with more stringent microgravity requirements," Fernandez said.



Mike Penton of Pace & Waite, Scott Akridge of the Engineering Systems Department, and Frankie Jernigan of the Microgravity Science and Applications Department, perform command and data handling tests on the g-LIMIT flight unit.

Director's Corner

Black History Month a good time to reflect on cultural diversity

As we approach Black History Month, I want to reiterate my belief that this celebration is an important part of the Marshall Center. It is a time when we may not only reflect on the history of African-Americans and the struggle for equality in America, but also a time we can openly discuss issues in a healthy, positive forum.

This year's theme is "Defining Excellence: African-American Leadership for the New Millennium." We believe this theme allows us an opportunity to talk about one of Marshall's core values: Excellence, and how it relates to multi-cultural leadership at the Center. It lets us recognize how African-American



Stephenson

leadership at the Center has been an integral part of our success, and it also allows us a chance to discuss how we can each achieve our individual excellence regardless of our position at the Center.

During Black History Month, we will have an opportunity to view the photo exposé "Selma to Montgomery," which chronicles the voting rights movement initiated in Selma, Ala., as seen through the lens of

world renowned photographer "Spider" Martin. We will recognize the accomplishments of educators who've been instrumental in providing motivation and inroads to African-American students, specifically those who nurture an interest in science. We will honor an organization for outstanding leadership at a time when leadership is key. We will appeal to those who for whatever circumstance are less fortunate, in the hopes of igniting the spark that will be the inspiration that creates the next generation of African-American scientists and engineers. And last but not least, we will embrace "Team Redstone" in a celebration of the rich talent of African-American culture in the form of art, music and portrayals.

The time is now to come together and sit at the table and share. "America United" in a post 9-11 America has new meaning. As we take the time to fellowship this month, take the time to really appreciate diversity. I ask you to take time to attend at least one of the Black History Month events. Showing your support for our African-American employees demonstrates our People value, which states, "We recognize individual and cultural differences and treat each other with dignity and respect."

HESSI spacecraft set to launch Tuesday

NASA news release

NASA's High Energy Solar Spectroscopic Imager (HESSI) remains on track for a Tuesday launch. HESSI will study solar flares — gigantic explosions in the atmosphere of the Sun — with a unique kind of X-ray vision, producing the very first high-fidelity color movies of solar flares during their highest energy emissions.

HESSI will be carried aloft inside a Pegasus XL rocket under the belly of Orbital Science Corporation's Stargazer L-1011 aircraft. The L-1011 is scheduled to lift off from Cape Canaveral Air Force Station, Fla., at 2:21 p.m. CST. After the aircraft is about 40,000 feet over the Atlantic Ocean, it will drop the Pegasus rocket. Following a free fall and a series of short rocket motor burns, the rocket will deliver HESSI to its 373-mile (600-kilometer) circular orbit above the Earth, inclined at 38 degrees to the equator.

To understand what triggers a solar flare and how it explosively releases energy, scientists need to identify the kinds of particles being accelerated, locate the regions where the acceleration occurs, and determine when the particles get accelerated. The most direct tracer of these accelerated particles is the X-ray and gamma ray radiation they produce as they travel through the solar atmosphere.

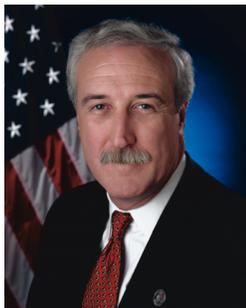
The spacecraft's sole instrument, an imaging spectrometer, will construct flare images from patterns of light and shadows, that are produced by high-energy radiation as it passes through the instrument's grids while the spacecraft rotates.

HESSI was originally scheduled for launch in July 2000, but was postponed after the satellite suffered damage during vibration testing. Since then, flight delays due to launch vehicle failures have affected the launch date. However, officials have since cleared the way for Tuesday's scheduled launch.

For scientists to understand the physical processes and conditions within flares, they will use the spectrometer aboard HESSI to create images of the gamma rays and highest energy X-rays emitted by each flare. These images will be the first to simultaneously measure the location and energy content of radiation from the flare material and should improve predictability of flare occurrences at the Sun and the subsequent consequences we experience here on Earth.

For more information, visit the Web at:
<http://hesperia.gsfc.nasa.gov/hessi> or
<http://hessi.ssl.berkeley.edu/>

Center all-hands meeting with NASA Administrator Sean O'Keefe to be held at 1:30 p.m. Feb. 8 in Morris Auditorium.



O'Keefe

Second round of program planning, control classes begins Feb. 14

The second round of program planning and control classes, sponsored by the Office of the Chief Financial Officer and the Employee and Organizational Development Department (EODD) begins Feb. 14 with Contract Administration. Emil Posey and Byron Butler of the Procurement Office are the instructors.

Classes will be from 8-12 a.m. Thursdays in Bldg. 4200, room G-13C. "Because of the limited space in this room, we will have to stick very closely to the room capacity," said Janie Moyers, employee development manager in EODD. "Anyone who wants to attend should register early

to secure a space."

Other classes in the series include Earned Value Management and Data Analysis, Feb. 21; NASA/MSFC Budget Overview, Feb. 28; Work Breakdown Structure (WBS), March 7; Space Project Cost Estimating and Analysis, March 14; Introduction to Scheduling Fundamentals, March 21; Configuration Management, April 4; Risk Management, April 11; Project Analysis April, 18; Schedule Assessment and Analysis April, 25; and Managing a Technology Program, May 2.

Registration is via AdminSTAR. For details, call Janie Moyers at 544-7552.

SLI proposals

Continued from page 1

and reliability and reducing costs associated with a new generation of fully reusable launch vehicles.

"In spite of the advances in aerospace technology, human space flight remains a challenging endeavor," said Dennis Smith, manager of the Space Launch Initiative. "We are asking industry and universities to develop concepts and leap-ahead technologies needed to pioneer safer, lower cost space flight. They have a clean sheet of paper and the competition is wide-open."

This second round of requests targets research on propulsion, flight demonstrations and NASA-unique projects such as life support and crew safety, and integrated ground testing and simulations for a second-generation reusable launch vehicle. Space Launch Initiative management has identified these areas as critical to the program and in need of additional research.

The Space Launch Initiative's first round of contract awards — valued at \$791 million — went to 22 prime contractors. Those studies marked the first step of a process that will lead to development of a common set of alternative technologies that NASA will make available to all U.S. companies. These cutting-edge developments will be used for future government and commercial launch systems and space transportation operations.

The Space Launch Initiative awarded an additional \$94.6 million in December.

"Proposals funded under this program will further define the technical requirements for achieving NASA's safety and mission goals," Smith said. "The proposals will initiate essential activities necessary to develop vehicles, ground support equipment and operations for a second generation reusable launch system."

The original research announcement was issued in October 2000. NASA Research Announcement 8-30 Cycle I asked U.S. industry, educational institutions, nonprofit organizations and federal agencies to submit proposals in 10 areas: system engineering and architecture definition, airframe, vehicle subsystems, internal vehicle health monitoring, operations, upper stages, propulsion, flight mechanics, flight demonstrations and NASA-unique requirements such as life support and crew escape systems.

The technology selected for development is based on extensive studies to assess the technological needs for a second-generation reusable launch vehicle. These technologies have been prioritized and the funding is commensurate with those priorities.

The planned budget for the Space Launch Initiative totals \$4.8 billion through fiscal year 2006.

The Space Launch Initiative's goal is to enable full-scale development of a reusable launch system in 2006 — with flight operations anticipated in the 2012 timeframe.

The Marshall Center is NASA's Lead Center for Space Transportation Systems Development. Marshall's efforts are supported by Ames Research Center in Moffett Field, Calif.; Stennis Space Center in Bay St. Louis, Miss.; Kennedy Space Center, Florida; Dryden Flight Research Center in Edwards, Calif.; Johnson Space Center in Houston; Langley Research Center in Hampton, Va.; the Jet Propulsion Laboratory in Pasadena, Calif.; Glenn Research Center in Cleveland; and the Air Force Research Laboratory, which includes research and development facilities at nine United States Air Force bases nationwide.

For more information, visit the Web at:
<http://www.slinews.com>

The writer, employed by ASRI, supports the Media Relations Department.

Twenty educators attend workshop at Marshall

The Marshall Center is hosting 20 science center and museum educators for the weeklong NASA Educational Workshops (NEW) for Science Center and Museum Educators from Jan. 30-Feb. 7.

NASA Educational Workshops model the integration of the national standards in mathematics, science, technology and geography. The workshops provide educators from Alabama, Arkansas, Georgia, Louisiana, Missouri, Iowa, Tennessee and Washington with an opportunity to observe NASA's state-of-the-art research and development through direct interaction with NASA scientists, engineers, technicians and educational specialists at the Marshall Center.

Participants will be participating in a NEW program focused on the needs of science center and museum educators and technology specialists.

While participating in educational sessions at the Marshall Center, educators also will be able to attend sessions at U.S. Space Camp, the U.S. Space & Rocket Center, Aviation Challenge and the NASA Educator Resource Center.

The objectives of the workshops include:

- Sharing information about NASA resources, programs and services for science center and museum educators to use with educators, students and staff.
- Providing hands-on time to using technology, emphasizing technical aspects of distance learning technologies, including live interactive video conferencing and Web-casting.
- Developing and implementing a plan compatible with the goals and objectives of their organization.

Workshop participants will visit applied research facilities, examine topics relating to NASA's Strategic Enterprises, and review NASA's educational materials available through the Educator Resource Center Network and online.

They also will discuss the teaching, learning, assessment and professional development strategies called for in the national science, mathematics, technology and geography education standards.

The workshops are sponsored and implemented by the NASA and Marshall's Education Programs Office. The National Science Teachers Association serves as an educational partner to the program and provides administrative support.

Obituaries

Hollingsworth, Annie J., 85, of Huntsville, died Jan. 7. She retired from Marshall in 1977 where she worked as a mail clerk.

Johnson, Annie W., 82, of Huntsville, died Jan. 8. She retired from Marshall in 1980 where she worked as a secretary.

Participants in the NASA educators workshop are:

- **McWane Science Center, Birmingham, Ala.**
Sam Kindervater
- **Sci-Quest / North Alabama Science Center, Huntsville**
Catherine Killoran
Laurie Provin
- **Mid-America Science Museum, Hot Springs, Ark.**
Christy Beckwith
- **Museum of Aviation/Starbase Robins, Warner Robins, Ga.**
Elvira Flagg
- **Science Center of Iowa, Des Moines**
Kris Anderson
Theresa Becker
- **Sci-Port Discovery Center, Shreveport, La.**
Cathy Williamson
Salinda Barnard
- **Freeport McMoRan Daily Living Science Center, Kenner, La.**
Michael Sandras
- **Audubon Louisiana Nature Center, New Orleans, La.**
Hollie Boyston
- **Discovery Center of Springfield, Springfield, Mo.**
Justine Lines
Christina Durlington
- **St. Louis Science Center, St. Louis, Mo.**
Robert Powell
Dave Schiber
- **Cumberland Science Museum, Nashville, Tenn.**
Larry Dunlap-Berg
Drew Gilmore
Becky Fox Matthews
- **Hands On! Museum, Johnson City, Tenn.**
Beverly Bennett
Kristine Carter
- **Museum of Flight, Seattle, Wash.**
Cheryl Fairfax
Charlie Atwell

Middle school students answer tough questions in recent Scholars Bowl

More than 100 students, teachers, coaches and parents participated in the Scholars Bowl held in December at Meridianville Middle School. The event — which consisted of three preliminary rounds and a tournament competition at the University of Alabama in Huntsville — involved eight county middle schools.

Participating as readers for the events were Marshall Center volunteers Pat Doty of the Experiments Project Management Group of the Microgravity Science and Applications Department in the Science Directorate; Robert Champion of the Propulsion Projects Office of Space Launch Initiative; Zac Galaboff of the Control Systems Group of the Vehicle and Systems Development Department; and Mark Krome of the Engineering Systems Department.



Marshall volunteer Mark Krome quizzes Madison County middle school students during the final round of the Scholars Bowl.

Photo by Emmett Given, NASA/Marshall Space Flight Center

Auburn grads recognize university department's help with PERS

Dr. William Walker, acting president of Auburn University, was recognized during the University of Alabama vs. Auburn University football game Nov. 17, for the efforts of the university's Department of Industrial Design by three Auburn graduates in the conceptual design of

the Payload Equipment Restraint System (PERS).

Auburn graduates Jim Voss, the Expedition 2 crew member who was the first crew member to use the PERS hardware on the International Space Station; Ken Smith, the PERS system engineer; and David Reynolds, the PERS lead system engineer, presented the award. Smith, who works for Raytheon in the Flight Projects Directorate, is a Marshall retiree.



Courtesy photo

Award recipient Walker, left, with Auburn graduates Voss, Smith and Reynolds.

The Payload Equipment Restraint System was a joint effort between the Marshall Center and Auburn University. Thirty-six Auburn University industrial design students submitted concepts for PERS and three were chosen. The flight hardware was then designed and fabricated totally in-house at Marshall. The restraint system is now used everyday by astronauts on the International Space Station.

PERS has been so successful that Smith and Reynolds are presenting a paper, "Restraining Loose Equipment on the International Space Station," in May in Japan.

"The astronauts are thrilled with this equipment and it's used daily to support all types of payload and station support system activities," Reynolds said.

Minority- and women-owned business exposition

Small businesses seize opportunity to share capabilities with NASA, large business managers

from the Technology Transfer Department

To stay at the cutting edge of any business, whether computer systems or Space Shuttle parts, you have to constantly look for new ideas and new capabilities.

The Marshall Center is no different. At the recent Minority- and Women-owned Business Capabilities Exposition at Calhoun Community College in Tanner, Ala., 41 businesses shared information about their companies and capabilities with key Marshall managers and representatives from Marshall's prime contractor community. The event was co-hosted by Marshall's Technology Transfer Department and Procurement Office.

"The women- and minority-owned business initiative program was designed to promote technology development and deployment collaborations between NASA and these technology based companies," said Vernotto McMillan, deputy manager of the Technology Transfer Department. "These companies tend to think out of the box, therefore given the right marriage, they will not only take our patented technology to different levels, but they would use the same approach in addressing our product line technology needs."

"This expo specifically targets businesses with technology expertise and provides a forum for them to present those capabilities, to network and to explore building relationships that will strengthen their business base," said Carolyn McMillan, MOB/WOB project manager.

Companies presenting their expertise and capabilities ranged in size from three to 500 employees. Some had one year of experience, others more than 30 years in business. Some of the companies have won multiple contracts at Marshall, but for



Center Director Art Stephenson emphasizes the importance of diverse small businesses to Marshall and NASA missions.

many of them it was an opportunity to establish their first relationship with Marshall.

Marshall managers, company presidents and other representatives seized this opportunity to share and learn about each other. The exposition offered networking opportunities to build relationships such as a luncheon and an evening reception, where the exchange of business cards was widespread.

In his address to the group, Marshall Center Director Art Stephenson shared some statistics and very candid statements.

"Our economy is based on the entrepreneurial spirit — the daring visionaries — different ideas and perspectives coming together to create better products and services," Stephenson said.



Willie Love, left, assistant director of Marshall's Equal Opportunity Office; Craig Palmer of Alpha Data Corp. of Ft. Walton Beach, Fla.; and Carolyn McMillan, the manager of the Technology Transfer Department's Minority- and Women-Owned Business initiative program share ideas about the expo.



Vernotto McMillan, deputy manager of the Technology Transfer Department, encourages attendees to "seize the opportunity" made available at the expo.



Photos by Emmett Given, NASA/Marshall Space Flight Center

Nearly 200 attendees used the luncheon and evening reception to network and build relationships with Marshall managers and large business representatives.

“We know that to a large degree, innovation comes from small companies. In FY2001, the contractor workforce at Marshall was comprised of 16 minority- or women-owned companies. During FY2000, Marshall invested more than \$176 million in North Alabama minority- and women-owned businesses.

“Marshall’s message on appreciating people and embracing diversity is not political rhetoric — it’s how we operate,” he said. “For America to be more successful, we must do a better job of truly and honestly utilizing our great diversity and the innovations that spring from it.

“But let me be totally honest with you — it hasn’t always been this way. We are continuing to work to get rid of the ‘good ole boys’ way of doing business,” Stephenson said. “And I believe we are making good progress. Diversity goes beyond age, gender and ethnicity.”

“I was very pleased with the event,” said Johnny Stephenson of Marshall’s Engineering Directorate. “We were able to identify 10 of the companies with skill areas we believe have potential applications to help the Engineering Directorate. Three of those companies have already followed up and provided additional information.”

Lon Miller, vice president and general manager of Sverdrup Technology Inc., commented, “I look forward to establishing productive relationships with some of these high caliber companies. We are especially interested in some of them for upcoming Space Launch Initiative work. We see this as a great opportunity to get the right kind of specialized support for Marshall, as well as getting more diversity in our contract through these minority- and women-owned companies.”

After a 90-day period following the event, a survey of all attendees will be conducted to identify and capture any successful collaboration.



The exchange of business cards at the evening reception paves the way for future contact between the business owners and Marshall and prime contractors.



Teresa Washington, director of Marshall’s Customer and Employee Relations Directorate, discusses opportunities available with Guy Juzang of Infinity Technology of Huntsville.

Energy tip

Energy Star or storm windows help increase energy efficiency

Poor fitting, single-pane windows can lose energy much faster than modern multi-glazed low-e (emissivity) windows.

In extreme weather, such a poor performing window may lose energy 10 times faster than an equal area of wall. On clear summer days, an unshaded window adds greatly to undesirable solar heat gain. In many homes, heat loss and gain through and around windows accounts for more than 25 percent of a home's heating and cooling bills.

The best way to improve your home's energy efficiency is to replace old windows with modern, double or triple-glazed, low-e new or replacement windows. Look for Energy Star labeled windows, as the Energy Star label indicates that these windows are particularly energy-efficient and cost effective for your climate.

An alternative to Energy Star labeled windows is to install storm windows. The following is a list of benefits for adding storm windows:

- Improves insulation achieving warmer winters and cooler summers inside the home
- Dramatically reduces transfer of hot and cold air between inside and outside of the home
- Significantly reduces noise transfer between inside and outside of the home
- Easy to operate
- Easy to clean
- Long lasting
- Reduce energy loss
- Lower utility bills
- Adds value to the home

Storm windows may be a less expensive option to Energy Star windows.

If you have an energy tip that you would like to share with the "Marshall Star" readers, send it to:

cedreck.davis@msfc.nasa.gov or

juergen.haukohl@msfc.nasa.gov

Students volunteer time to work with scientist

Anna Holmes, left in photo, a scientist with the University of Alabama in Huntsville, and research associate at the Marshall Center, shows students who are part of Marshall's Venture Crew, how to take photos of protein crystals. Holmes

also works with high school students across the country on another program in which the students set up protein crystal flight and ground control samples.

Marshall's Venture Crew students are helping Holmes manage a Web site by taking digital microscopy photos of the

students' ground control crystals, uploading photos and creating new Web pages by editing the HTML code.

As a result of student interest, Holmes is incorporating information on the different types of crystalline habits that they are working with, why these crystals have scientific interest and what a molecular biologist or crystallographer does.

Venture Crew members Sam Bryan, Cindy Chester, Heather Fields, Luke Hulsey, Alan Pritchard, Tracy Vann and Tim Wolfe have gained Web experience by building Web pages about their intended careers and hobbies.

The Venture Crew, jointly sponsored by the Marshall Center and the Boy Scouts of America, is a group of 80 students from 14 local high schools who are interested in pursuing science and/or engineering as a career.



Photo by Emmett Given, NASA/Marshall Space Flight Center

Students can 'search' for habitable planet on new NASA Web site

Ames Research Center news release

Searching for a fictional planet on which people could live is one of the student activities available on a new NASA Web site that will open for business Friday at:

<http://astroventure.arc.nasa.gov>

"Astro ferret," a cartoon character, will guide students through a series of role-playing steps on the multi-media, interactive Web site. Young people using the "Astro-venture" Web site can observe the effects of changes to the Earth and draw conclusions about what is needed for survival. Participants can "feel" they are part of an Internet world by receiving information seamlessly, through use of graphics, audio, video and audio transcriptions.

"Students in grades 5-8 are transported to the future where they role-play NASA occupations and use scientific inquiry, as they search for and eventually build a planet with the necessary characteristics for human habitation," said Christina O'Guinn of the educational technology team at Ames Research Center in California's Silicon Valley. "Supporting activities include Internet Web casts with real NASA scientists, online collaborations, classroom lessons, a student publishing area and occupation-related fact sheets and trading cards."

Web casts enable students to watch live video, listen to audio and interact in real-time on the Internet with experts. The Web casts' Internet address is:

<http://quest.nasa.gov/astrobiology/astroventure/2002/index.html>

Two, one-hour Astro-venture Web casts will take place in April. The first, "Habitable Planets," will air at noon CST April 2. The second, "Doppler Shift," will take place on April 9 at noon CDT.

"Our goal is to inspire students to pursue science, math and technology careers by engaging them in an extremely compelling topic, astrobiology, in a way that is very relevant to them, focusing on Earth and human survival," said Donald James, education director at Ames. Astrobiology is the study of the origin, evolution, distribution and destiny of life in the universe. "Research shows that it is crucial to capture students' interest in science before they reach high school," he said.

The astronomy section of NASA's new Web site zeros in on our solar system's astronomical characteristics that make it livable to human beings.

"Students test cause-and-effect relationships to discover the characteristics that allow Earth to remain habitable. Students also will explore hands-on, inquiry-based lessons on states of matter and systems and then complete a mission in which they simulate the process scientists might use to find a planet that would be habitable to humans," said O'Guinn.

Students can participate in the NASA-sponsored Astro-venture Internet events without pre-registering. There is no charge.

The Astro-venture lessons meet national education standards

'Our goal is to inspire students to pursue science, math and technology careers by engaging them in an extremely compelling topic, astrobiology, in a way that is very relevant to them, focusing on Earth and human survival. Research shows that it is crucial to capture students' interest in science before they reach high school,'

**— Donald James,
Ames Research Center education director**

and provide a purpose for understanding concepts such as states of matter. "Since we need liquid water to survive, we need to understand how liquid water is different from solid and gas and what conditions allow for water to be a liquid," O'Guinn explained. The Web site also highlights NASA careers and astrobiology research in astronomy, geology, biology and atmospheric sciences.

According to Web team members, they are developing the Web site to meet educational standards, research-based instructional methods and the constraints of today's classrooms. The team includes instructional designers, graphic artists, multimedia programmers and web developers who work with NASA scientists, including some astrobiologists and their support personnel from the NASA Astrobiology Institute, which is headquartered at Ames.

Astrobiologists at Ames are studying the organic chemistry of space, the formation of planetary systems, and the early history of the Earth, one NASA astrobiologist explained. These scientists investigate the origin of life and explore the most extreme environments that support life, from boiling hot springs to cold Antarctic rocks. Astrobiologists analyze Martian meteorites for possible fossil evidence of life and carry out experiments in evolutionary biology using space shuttle flights.

"Ames also is beginning a collaboration with California State University, Hayward, educational technology graduate students who are rapid-prototyping other modules and curriculum," O'Guinn said.

Marshall joggers reminded of Arsenal safety rules

As a tenant at Redstone Arsenal, NASA is obligated to abide by applicable Department of the Army and Post regulations. MICOM Regulation 210-2, Change 6, provides the following rules for joggers:

- “Marching, running and jogging are not authorized on any roadway with a speed limit greater than 25 mph. The only exception to this prohibition will be formally pre-approved “sponsored events.”
- All persons running or jogging are responsible for their personal safety and for selecting a safe place to run or jog, i.e., jogging paths, sidewalk or athletic field/track.
- Where a sidewalk is provided, individuals walking, running or jogging will do so on the sidewalk, not on the roadway.
- Where a sidewalk is not available, the individuals will walk, run or jog only on a shoulder of the roadway as far as practicable from the edge of the roadway.
- Where a sidewalk or shoulder is not provided, individuals will walk, run or jog as near as practicable to the outside edge of the roadway and only on the left side of the roadway, facing any oncoming traffic. During periods of low visibility (dusk, fog, rain, etc.) or darkness, these persons will wear reflective devices (i.e., reflective vest, armband patches, belts, etc.)
- Individuals will not wear radio headphones while walking, running or jogging.
- Individuals walking, running or jogging will yield right-of-way to all vehicular traffic except as otherwise provided in Alabama Motor Vehicle Laws (32-5A-211: Pedestrian’s Right-Of-Way in Crosswalks).”

Redstone Arsenal offers boating safety courses

The U.S. Coast Guard Auxiliary is offering boating safety courses at Redstone Arsenal. Offered only five times during the year, the classes will be held at Stillwell Hall, Bldg. 3305, on Zeus Drive. The courses will include six, two-hour sessions, conducted on Thursdays in Room 215, from 6:30 to 8:30 p.m. The first course will run from Feb. 14 to March 28.

There is no charge for the course itself, but registrants must pay a \$20 fee to cover the costs of the class manual and student study guide they will receive.

Those who are 40 years old or younger will be exempted from taking the state written boat operators examination, if they successfully complete this course. Course graduates may also be able to save up to 15 percent on their boat insurance premiums.

For additional information and class registration, contact Tom Kunhart at 885-7096 (work), or 830-6621 (home), or by e-mail at tkunhart@csc.com. The 2002 Boating Safety Course schedule is:

- Course 1: Feb. 14 to March 28
- Course 2: April 11 to May 23
- Course 3: June 13 to July 25
- Course 4: Aug. 8 to Sept. 28
- Course 5: Oct. 10 to Nov. 21

High school robotics teams to demonstrate this year’s ‘game’

On Feb. 13, the four Marshall-sponsored FIRST Robotics teams will meet at Intergraph Bldg. No. 21 at 470 Dunlop Blvd. in Huntsville to demonstrate the “game” for the regional and national competitions beginning in March.

All Marshall Center employees and contractors, community businesses, school leaders and Huntsville area media are invited to attend the demonstration. FIRST — For Inspiration and Recognition of Science and Technology — sponsors the annual robotic competition.

The Marshall Center is sponsoring

teams from Lee High School in Huntsville, Arab High School, Lincoln County High School in Fayetteville, Tenn., and New Century Technology High School in Huntsville. Chrysler Corp. is sponsoring a team made up of students from Bob Jones High School in Madison and Butler High School in Huntsville. This team also will demonstrate its robot Feb. 13.

This year’s competition “kicked off” Jan. 5 in New Hampshire, where the game was unveiled. The teams, along with their Marshall and local business mentors, then had six weeks to design, build and test a robot.

On Feb. 19, all robots must be shipped

to a regional competition. Arab High and Lincoln County High teams will compete in the Kennedy Regional in Florida on March 7-9. Lee High will attend the Houston Regional on March 14-16, and the New Century Technology High team will compete in the St. Louis Regional on April 4-6.

The teams will go to the National Competition in Orlando, Fla., April 25-27.

For more information, call Vicki Smith at 544-1798 or Barbara Long at 544-0774.

Center Announcements

Spot bid sale

A drop-by spot bid sale will be held from 9 a.m.-2 p.m. Feb. 13 at Intergraph Bldg. 21. The sale will consist of 40 personal computers (no Macs), 6 laptop computers (no Macs) and 14 lots of assorted furniture. For details, call Greg Tate at 544-1774.

Upcoming classes

For a complete list of training opportunities at the Marshall Center, visit the "Inside Marshall" Web site.

Clubs and Meetings

AIAA meets

Dr. Alfred Ritter will speak on aerodynamic research and development in China at the Feb. 21 meeting of the American Institute of Aeronautics and Astronautics (AIAA). The meeting begins at 6:30 p.m. at the Holiday Inn Research Park. Regular admission is \$15. Student admission is \$8. Make reservations via e-mail to ArloeWJr@cs.com or call 881-7124 by noon Feb. 18.

NARFE meets

The National Association of Retired Federal Employees (NARFE) will hold a special meeting and luncheon for prospective members at 11 a.m. Feb. 9 at the Senior Center on Drake Avenue. All current and retired federal employees are invited to learn how NARFE can help you. A complimentary lunch for prospective members will be served. Reservations are required and can be made by calling Floyd Clark at 859-7747 by Feb. 6.

Professional development

The Huntsville-Madison County Chapter of Blacks in Government (BIG) will sponsor its eighth annual Professional Development Seminar from 8 a.m.-5 p.m. Feb. 21 at the Huntsville Museum of Art, 300 Church Street. The theme is "Retooling Today for Tomorrow's Opportunities." Dr. William

A. Powell will speak. The workshops include three tracks: 1) Leadership and Management, 2) Career and Professional Development, and 3) Personal Effectiveness. Cost is \$125, which includes the seminar and lunch. Credit cards and government payment vouchers are accepted. For more information, call (256) 551-7230 or 851-8437.

Toastmasters International

The NASA Lunar Nooners Toastmasters Group of the Marshall Center recently held its annual officer's election. Robert Gillis of FD41 is president; Malcolm Gillis, retired, vice-president of education; Clark Everetts, Madison Research Corporation, treasurer; Dallas Wood Higgins, Civil Air Patrol, secretary; Dr. Ruth D. Jones, NASA/Space Optics Manufacturing Technology Center, vice-president for membership, and Mike Nelson, sergeant at arms. The new officers will serve a six-month term. NASA Lunar Nooners Toastmasters Group meets at 11:30 a.m. every Tuesday in the conference room of the cafeteria in Bldg. 4610. Visitors are welcome. For more information, please call Dr. Ruth D. Jones at 256 544-3191 or ruth.jones@msfc.nasa.gov.

Instrumentation Division meets

The Measuring Branch, Telemetry Branch and Radio Frequency Branch meet the first Tuesday of each month at 11 a.m. at the Redstone Golf Club Coffee Shop. For more information, call Tom Escue at (256) 232-1549.

Sports

NASA Ski Week

The 11th Annual NASA Ski Week will be hosted at Banff/Lake Louise March 9-16. All Marshall employees, on-site contractors, retirees, and dependents are eligible to participate. Interested persons may call 1-233-0705 for additional information.

NASA Exchange

Valentine dance

The MARS Ballroom Dance Club Valentine Dinner Dance will be held on from 6:30-11 p.m. Feb. 9 at the East Exhibit Hall in the Von Braun Center. Music will be by the Little Big Band. Attire is semi-formal. Admission is \$20 for members, \$25 for guests. For tickets, call Linda Kinney at 544-0563, Woody Bombara at 650-0200, Bob Williams at 544-3998, Hugo Berry at 544-3525, Pat Sage at 544-5427, Palmer Herndon at 534-7408, or Tami Landers at 544-6818.

Huntsville Chorus

NASA employees, retirees and contractors can receive a 10 percent discount to the final Huntsville Community Chorus Association (HCCA) concerts for the 2001/2002 season at 2 and 7:30 p.m. Feb. 9 at the Huntsville High School Auditorium. The discount can only be obtained by presenting your badge at the HCCA office, 3312 Long Ave (Fantasy Arts Center). Regular prices are: adults - \$12 and seniors/students - \$10. For more information, call 533-6606.

Madison chorus

NASA employees, retirees and contractors can receive a \$2 discount off the ticket price to see the Madison Community Chorus in "Annie," at 7 p.m. Feb. 21, 7 p.m. Feb. 22, and 2 and 7 p.m. Feb. 23. To receive the discount, present your badge at the auditorium door of Bob Jones High School in Madison. Tickets also may be purchased in the lobby of Madison City Hall from 11 a.m.-1 p.m. Feb. 19-22. For more information, call 316-0521.

**Black History Month
Leadership Forum, 10-
11:30 a.m. Feb. 12, Morris
Auditorium**

Employee Ads

Miscellaneous

- ★ Two Windsor/Queen Anne recliner chairs and blue, gold, green and maroon sofa, \$1,500. 772-8800
- ★ 1995 Gateway Shamrock mobile home, doublewide, 80'x28', 4-bedroom, 2-bath, \$23,900. 895-6638
- ★ Computer keyboard, \$10; 13" monitor, \$10; 386SX computer, \$10; or all for \$20. 830-1905
- ★ Large collection of Beanie Babies, various prices, some hard to find. (256) 722-9455
- ★ Chinese Chippendale dining room w/4 chairs, glass top, \$700 obo. 774-3147
- ★ Pentium II 233Mhz computer with zip drive, 17" monitor, \$200. 539-9777
- ★ Men's suits, size 40R, \$40 ea. obo. 881-8674
- ★ Lead bullets, 245 grain, 200 ea.; CCI 300 large pistol primers & casings for 44 Magnum re-loader, 200 ea.; make offer. 837-0705
- ★ Four MAG wheels, 15"x8" Eagles with G44 tires, \$150. 837-4136
- ★ Queen water bed, bookcase headboard, six drawer base, \$150; golf clubs, Ping Eye 2, 2-PW, \$100 obo. 828-2864
- ★ Game Boy games, \$20 each. 837-2824 after 7 p.m.
- ★ Nordic Track Pro Plus ski machine, \$300 obo. 772-3584
- ★ 1997 Ez-Go electric golf cart, 4-seat conversion kit, \$1,750. 325-6000
- ★ New silver chargers, \$15 ea.; Bavarian china service for eight, new Santa Fe colors, \$80. 882-6832
- ★ TurboTax, 2001 Federal, \$10. 828-9651

- ★ Yamaha Clavinova CVP7, electronic keyboard, self-play, lighted instruction, internal/external recording, full-size weighted keys, \$750. 880-9025
- ★ Truck bedliner (Protecto brand) fits 89-98 Chev/GMC full size pick-up \$40 obo/installed. 864-0465
- ★ Yamaha PSR-215 portable beginners keyboard/voices & percussion, \$165. Bushnell 565 telescope/equatorial mount & 3 eyepieces \$160. 534-3252
- ★ Kenmore dryer \$90 and GE washer \$110. 837-6649
- ★ Learn Japanese software \$30; Infrared massager \$10; Greatest Story video \$10; Norton Antivirus 2001 \$20; Lexmark printer \$600. 722-9483
- ★ Two full-size violins with cases and bows, 1 new \$150 and 1 older \$100. 722-9989
- ★ Magnavox 13" color TV, \$30. 883-8257
- ★ Jerrold 550, M/N DP-5-310 or DVD-7 General Instrument TV Converter box to buy. 423-2192
- ★ Heavy-duty plastic kicker ramp by Ramptech for skaters, 12x21x39, \$50. 464-9733

Vehicles

- ★ 1997 Cavalier Z24, blue, 5-speed, a/c, power, sunroof, FlowMaster, \$6,500. (256) 961-9739
- ★ 1987 Lebaron convertible, red, "project car," new paint & top, 5-speed, CD player, \$1,000. (256) 961-9739
- ★ 1991 Ford Explorer Eddie Bauer, 4D, new motor, needs minor work, \$1,800. 859-3401
- ★ 1997 Mercury Topaz, black/gray leather trim, stereo, \$6,500. 774-3147

- ★ 1999 Grande Jeep Cherokee, gold package, 87K miles, \$14,500. 518-9802
- ★ 1993 Nissan Pathfinder, 4WD, 80K miles, gray, one owner, \$8,100. 461-0482
- ★ 1999 Honda Accord EX, 4dr., white, camel leather interior, 36K miles, auto, sunroof, CD, keyless entry. \$16,200. 882-6555
- ★ 2000 Toyota Tacoma SR5, 4WD, 6 cyl., ext. cab, 18,000 miles. \$18,900. 859-2633
- ★ 1978 Camaro Z28, 350, black, 40K miles, \$3,200. 880-2859
- ★ 1994 Dodge Grand Caravan, champagne color, V-6, air, power windows/locks, AM/FM cassette, child seats, \$3,100, obo. 851-9982
- ★ 1996 Mazda Millenia, power sunroof, CD changer, champagne w/charcoal cloth interior, 74K, \$9,500. 880-9025
- ★ 1993 Nissan SE Kingcab truck with bedliner, V-6, deep red, 83K miles, one owner, garaged. 883-1869
- ★ Antique and classic 70 1/2 Pontiac T/A Firebird, 455, 4-speed, show car, many trophies. \$18,000. 883-5543

Wanted

- ★ Speakers, 2 each, 8" woofers, for bookshelf speakers. 883-2757

Free

- ★ Sweet 2 1/2 year-old female dog needs a good home with a fenced yard. 859-2633

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