

Senate Majority Leader Trent Lott, along with NASA Administrator Daniel Goldin, visited Stennis Space Center Feb. 17 to join others in announcing the Mississippi Space Commerce Initiative. The goal of the initiative is to make Mississippi the nation's leader in commercial remote sensing, product development and services. Pictured here, Lott speaks to the standing-room-only crowd. Jimmy Heidel, right, executive director of Mississippi Economic and Community Development looks on as Lott explains the initiative's economic impact on Mississippi.

New initiative answers Goldin's challenge for state

The Mississippi Space Commerce Initiative (MSCI), a partnership between the State of Mississippi and its universities, NASA and high-technology businesses, was announced at NASA's John C. Stennis Space Center Feb. 17.

Senate Majority Leader Trent Lott and NASA Administrator Daniel Goldin congratulated Mississippi for accepting a challenge set forth by the administrator to work toward becoming the nation's leader in commercial remote sensing, product development and services.

Also participating in the announcement was Chancellor Robert Khayat of the University of Mississippi, Mississippi Department of Economic and Community Development Executive Director Jimmy Heidel and CEOs representing the various companies participating in the initiative.

Prior to the announcement in a media briefing, MSCI's Executive Director Dr. Allan Falconer and Stennis Space Center's Commercial Remote Sensing Chief David Brannon explained how this initiative would bring remote sensing to the market place.

MSCI's goal is to help give the United States a competitive edge in the rapidly developing, multibillion-dollar remote sensing industry. Thirteen
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Main Stennis thoroughfare renamed Trent Lott Parkway

At a ceremony Feb. 17, Shuttle Parkway, the main thoroughfare at NASA's John C. Stennis Space Center, received a new name.

The road was renamed "Trent Lott Parkway" by order of Stennis Space Center Director Roy Estess. The name change honors Senate Majority Leader Trent Lott of Mississippi for his steadfast support of America's space program and Stennis Space Center's role in that program.

"We see now a great potential for this facility and the space program. When we look to the future with manned facilities on the Moon and Mars, it makes me swell with pride to know that the people here will be a part of that great destiny of our country. So, to have this Parkway named after me is a great honor," Lott said.

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Stennis Space Center's main thoroughfare was recently renamed Trent Lott Parkway. Pictured here are Senate Majority Leader Trent Lott of Mississippi, left, along with NASA Administrator Daniel Goldin and Stennis Space Center Director Roy Estess after the unveiling ceremony.

LAGNIAPPE **Commentary*****Can Spring be far behind...***

Just as I started organizing my thoughts in preparation for writing this month's commentary, SSC's finest old Gator came strolling in, all decked out in a hideous, purple, green and gold Mardi Gras costume. Gad, what a sight! He was wearing a Halloween mask that was painted in Carnival colors with a St. Patrick's Day top hat on his noggin. He had a big red heart pinned to his chest and was holding, of all things, a scroungy groundhog.

"Gator, what on Earth are you trying to do? Commemorate all of our holidays at once?"

"Why not? The Lagniappe only comes out once a month, so I thought I had better cover all the bases! I'm not so crazy! Why are you writing valentine cards when that holiday has already passed?"

"Well, Gator, my big brother always told me it was proper to send greeting cards anytime in the month that the special day occurred. And this year, I have a lot of new valentines to send cards to with all of our new employees coming in from distant places, such as Marshall Space Flight Center and Kennedy Space Center."

Yeah, I guess you're right, Mr. Emily Post. I see a lot of new faces out on the test stands and in the test control center. I have even seen some up town here in the 'ministrative offices and at the Wellness Center. It's a good thing, I guess, but boss why send them valentine cards? Why not king cakes?"

"Oh, darn, broke another pencil lead! Pardon me, Gator, but will you hand me that pencil sharpener?"

"Looks like you're regressing in this high-tech age. You might as well get one of those old slates we used to have in grade school. I could write on mine, and then when I was finished I could erase what I had written with one good swipe of my tail. Saved paper for the war effort!"

"Quit the kidding, Gator, I've got to get this commentary written and get these valentines out to the new folks. Why don't you get on about your business? Go eat a king cake! I hope you swallow the baby! Maybe that will shut you up!"

Gator left in a huff. I didn't mean to make him mad during this festive season, but he can be a pain in the neck. Besides, I have got to get this writing assignment finished. The groundhog didn't see his shadow, so spring shouldn't be far behind. Oops! I hate to rush the season. This century will be gone before we know it!

M.R.H.

**NASA NEWSCLIPS****Petersen named Dryden director—**

NASA Administrator Daniel Goldin has named Kevin Petersen as Director of NASA's Dryden Flight Research Center, Edwards, Calif. Petersen has been Acting Director of Dryden since August 1, 1998. Previously, he had served as the center's Deputy Director since January 1996.

Since joining Dryden as an aerospace engineer in 1974, Petersen's experience has included work on F-8 Digital Fly-by-wire, Highly Maneuverable Aircraft Technology and X-29 forward-swept wing flight research projects. He also served as chief of the Vehicle Technology Branch and chief of the National Aerospace Plane project offices.

Cosmonauts named to ISS flights—

Three Russian cosmonauts with experience and expertise in the Russian Service Module and Zarya will join 1999 Space Shuttle missions to visit the International Space Station.

Valery Ivanovich Tokarev has been named to the STS-96 mission, the first logistics flight to the International Space Station. This second mission to the space station will bring supplies to be used by the next assembly mission that will connect Russia's Service Module to the Zarya. Tokarev replaces Yuri Ivanovich Malenchenko who was previously assigned to this mission and is now assigned to STS-101.

Tokarev, a Russian cosmonaut and Air Force test pilot, has been a commander of cosmonauts of aerospace systems at the Yuri A. Gagarin Cosmonaut Training Center. He will join STS-96 Commander Kent Rominger, Pilot Rick Husband and crew members Ellen Ochoa, Tamara Jernigan, Daniel Barry, and Canadian Space Agency astronaut Julie Payette.

Russian Cosmonauts Malenchenko and Boris Morukov have been assigned to STS-101, the second logistics flight to the International Space Station. Other crew members on STS-101 are Commander James Halsell Jr., Pilot Scott Horowitz, and crew members Mary Ellen Weber, Edward Tsang Lu, and Jeffery Williams.

Malenchenko, a Russian Air Force pilot and Commander of an aviation unit, flew in space for 126 days as commander of the 16th basic expedition to Mir.

Construction progresses on new Building 1100 wing

The NASA Administration Building at Stennis Space Center will soon have a new wing. The construction, started in Oct. 1998, is under contract to Tilley Constructors and Engineers Inc. of Gulfport.

During a recent visit to Stennis Space Center, NASA Administrator Daniel Goldin and Senate Majority Leader Trent Lott visited the construction site to see the progress being made.

Construction of the south wing represents NASA's contribution to a joint facilities conversion project with the Navy and the State of Mississippi.

The purpose of the joint project is to leverage resources in order to address critical space shortages caused by growth in each party's programs at SSC. Resources contributed to the project by the Navy will enable CNMOC to share space in the new south wing with NASA's Commercial Remote Sensing Program. State funds will be used to modify the existing CNMOC building to provide additional space for USM's Center for Marine Science.

The three-story, 68,000-square-foot addition is expected to be completed and occupied by May 2000.



During a recent visit, Senate Majority Leader Trent Lott and NASA Administrator Dan Goldin stopped to see the progress being made at the construction site of the new wing for Building 1100 at Stennis Space Center. Pictured from left are: Vic Tilley of Tilley Construction, the prime contractor for the project; NASA's Ed Gobert, project engineer; Sen. Lott; Stennis Space Center Director Roy Estess; and Goldin.

Subcontractors are working on the structure eight hours a day to complete construction on schedule. Subcontractors working on the new wing include: McKay-Ivey Inc., of Ridgeland, Miss.; Roire Carpeting of Metairie, La.; Bruce Electric of Long Beach, Miss.; CMC Industries of Birmingham, Ala.; H. H. Jordan Construction Company Inc., of Eight Mile, Ala.; Gulf Coast Waterproofing of Gulfport, Miss.; Sumrall Glass Company of

Tylertown, Miss.; All-South Subcontractors of Spanish Fort, Ala.; FS Precast of Hattiesburg, Miss.; and Boe's Iron Works of New Orleans.

Thompkins and Barron of Jackson, Miss., are the architects for the newest addition to the NASA building. Structural engineers for the project are Spencer Engineers of Jackson; mechanical engineers are Elridge and Associates of Clinton; and electrical engineers are Watkins O'Gwen of Jackson.

MISSISSIPPI...

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companies are already part of the initiative, with many more currently in the application process.

"We want to bring the companies to where the technology is being developed," Goldin said. "We want to build a capability second to none in the nation and, at the same time, set up an education program so that students in Mississippi don't go to a university and then go away but come to the center of excellence in the world for commercial remote sensing."

Remote sensing uses sensors, either on aircraft or satellites, to observe the surface of the Earth. The information gathered by these sensors can be used to make accurate maps of the Earth's surface. These maps may be used for such applications as roadway planning, disaster assessment, farming, and forestry or building and facility placement.

"The opportunities that come from

remote sensing are endless. Now, to tie that program to the universities and students in the state and of course NASA and the jobs it will bring forth is one of the most exciting things that I have been involved in since I have been in Congress," Lott said.

Stennis Space Center is NASA's lead center for commercial remote sensing within the Earth Science Enterprise. The enterprise is an internationally coordinated research effort to study the Earth's land, oceans, atmosphere, ice and life as a global environmental system.

Goldin issued the challenge on Aug. 3, 1996, and committed \$3 million per year for five years to the initiative if Mississippi and industries matched the commitment.

Mississippi universities will build upon remote sensing expertise that is already present in the state in order to provide emerging businesses with essential research and business assistance in developing and marketing information products.

In order to promote the success of the initiative, the Workforce Development Education and Training (WDET) program has been given the task of ensuring that a trained work force exists to populate the commercial remote sensing industry.

A pilot program, initiated by WDET and the Mississippi Department of Education, is being used to introduce remote sensing into Mississippi schools from kindergarten to 12th grade. Currently being tested in six schools throughout Mississippi, this program will place remote sensing within reach of all Mississippi students by 2003.

As a result of having a trained remote sensing work force, businesses will have a greater incentive to move to Mississippi and to take advantage of a work force that does not exist anywhere else in the country. Graduates of Mississippi schools will have a broader range of high paying job opportunities within the state.

X-33 powerpack testing continues; vehicle skin ready

Stennis Space Center recently completed testing the first powerpack for the XRS -2200 Linear Aerospike engine that will power the X-33. Four tests have been completed on the second powerpack assembly.

The X-33 is a half-scale technology demonstrator of a full-scale, commercially developed reusable launch vehicle that is planned for development after the turn of the century. Through airplane-like operations and a single-stage-to-orbit design, a full-scale reusable launch vehicle could dramatically reduce the cost of putting payloads into space from \$10,000 to \$1,000 per pound.

Stennis Space Center X-33 Project Manager Steve Nunez said that the second powerpack, whose hardware will be used for engine 001, has been tested at 100 percent power level with no problems detected.

"Powerpack testing has been going well and has been a high point to the X-33 program. Credit goes to the test team for the accomplishments to date and achieving a three-day turnaround time between tests," Nunez said.

The powerpack consists of several components, including liquid fuel and oxidizer pumps, a gas generator and its valves and actuators, various vehicle connect lines and interconnecting flight ducts.

When testing is complete on three power pack assembly configurations, Stennis personnel will begin testing the fully assembled engine. This engine is powered by hydrogen as the fuel and oxygen as the oxidizer.

Two Rocketdyne-built linear aerospike engines will power the X-33, advanced technology demonstrator for the Reusable Launch Vehicle program.

Development of the low-cost space plane took a step forward last month when one of three technologies essential to its success was declared "ready for flight."

Skunk Works Vice President for Reusable Launch Vehicles, Jerry Rising, scores the tests conducted at Stennis and the thermal protection system among the X-33's successes.

The rugged, metallic thermal-protection panels designed for NASA's X-33 technology demonstrator passed an intensive test series that included sessions in high-speed, high-temperature wind tunnels. The panels also were strapped to the bottom of a NASA F-15 aircraft and flight-tested at nearly 1.5-times the speed of sound.

NASA expects the metallic thermal-protection panels — developed and built by team member BF Goodrich Aerospace/

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Thirty-two members of NASA's 1998 Astronaut Candidate Class visited Stennis Space Center this month as part of their training. The astronaut candidates received briefings on Stennis' three lines of business: propulsion testing, commercial remote sensing and Earth system science. Members of astronaut candidate classes visit all NASA space flight centers during their training to see firsthand what is involved in keeping the Space Shuttle operational.



Marshall Space Flight Center Director Arthur Stephenson visited Stennis this month to view propulsion facilities and discuss propulsion-related agreements between the two centers. Pictured in the foreground is Boyce Mix, Stennis Space Center's director of the propulsion test directorate; second row, Stennis Director Roy Estess and Stephenson; third row, Stennis Deputy Director Mark Craig; RS-68 Project Manager Jim Taylor Jr.; Low Cost Boost Technologies Project Manager Richard King and Space Shuttle Main Engine Project Engineer Pat Mooney.

PARKWAY...

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"Stennis Space Center is proud to name its most prominent thoroughfare in honor of Senator Lott. Now, it can be said that our astronauts must first go through Mississippi and down Trent Lott Parkway before going into space," Estess said.

The Senator was visibly pleased with this rare honor and addressed dignitaries and

Stennis employees assembled for the ceremony.

"This is a very, very fitting dedication. Since Sen. Lott was a staffer in the House he was here fighting for the space program and doing what was right for the country and doing what's right for Stennis. Without Sen. Lott's help we wouldn't be where we are today in America in rocket propulsion, because now we have every rocket company in the country coming here to test," Goldin said at the ceremony.

Knight Kiplinger, editor of *The Kiplinger Letter* and editor in chief of *Kiplinger's Personal Finance Magazine*, visited Stennis Space Center recently with Hancock Bank Chief Executive Officer Leo Seal for a tour of the facilities and briefings from Center Director Roy Estess and representatives from the Navy. Kiplinger was visiting the Gulf Coast to get an overview of local business and industry. Pictured from left are: Rocketdyne's Dave Geiger, Estess, Sun Herald Publisher Roland Weeks, Kiplinger, Hancock Bank President George Schloegel, NASA's Director of the Propulsion Test Directorate at Stennis Boyce Mix, Seal, Mississippi Power Company's Bob Hicks and Commanding Officer of the Naval Oceanographic Office at Stennis Capt. Larry Warrenfeltz.



NASA FY 2000 budget announced by Goldin

During a press conference Feb. 1, NASA Administrator Daniel Goldin announced the space agency's budget for fiscal year 2000. The following are excerpts from his remarks:

"For the sixth year in a row, NASA's budget has declined while productivity improves. Doing more with less money and fewer people is consistent with the President's vision of a federal government that works better and costs less.

I can say that even though our budget request for fiscal year 2000 will be slightly below this year's funding level, we have more money for space science, for exciting new missions and for the research and advanced technologies that will enable bold, new ventures in the future."

The proposed budget includes funding for Stennis Space Center projects including: propulsion, remote sensing and Earth science.

"The President's budget submitted to Congress for FY 2000 exhibits a strong and continuing commitment for rocket propulsion test, commercial remote sensing and Earth system science. These programs are at the forefront of NASA's emphasis and place special responsibility on us at Stennis to deliver on our commitments. When added to our expanding commercial test work and resident agency base, the budget speaks to a bright and busy future," Stennis Space Center Deputy Director Mark Craig said.

The budget summary released at the press conference included a total budget for the year 2000 of \$13.5 million, with \$2.5 million allocated

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Message from the Director concerning ISO 9001 certification recommendation

We have just been notified that Det Norske Veritas (DNV) is recommending the Stennis team for ISO 9001 certification. Achieving this milestone is a tribute to our NASA/Johnson Controls World Services/Lockheed Martin Stennis Operations team and to the dedication and very hard work of a number of individuals in each organization.

I want to personally thank each one of you for your effort and to tell you how very proud of you I am. You really stepped up to this important challenge.

ISO certification is critical to our future not only because our customers will require it but also because it is a powerful tool to help us stay on top of and improve how we do business. For these reasons, in the next months we will be working to expand our certification scope beyond propulsion test and Commercial Remote Sensing Program verification and validation.

So now we just need to maintain our certification in the DNV audits that will occur every six months. We're up to it!

Again, congratulations, thank you, and I am very proud and honored to be associated with you.

Roy S. Estess
Stennis Space Center Director

X-33...

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Aerostructures Group in Chula Vista, Calif. — to dramatically cut maintenance time and costs associated with more fragile thermal-tile systems.

Additional laboratory tests duplicated the environment the X-33's outer skin will encounter while flying roughly 60 miles high at more than 13 times the speed of sound. Also, a thermal-panel fit test successfully demonstrated the ease of panel installation and removal.

As the X-33 flies through the upper atmosphere, the panels will protect the vehicle from aerodynamic stress and temperatures comparable to those a reusable launch vehicle

would encounter while re-entering Earth's atmosphere.

Tests have verified that the metallic thermal-protection system will protect vehicles from temperatures near 1,800 degrees Fahrenheit.

The remaining two technologies important for low-cost space access are an efficient propulsion system ideally suited to power a lifting body and, more importantly, lightweight-yet-strong composite cryogenic fuel tanks and structures to minimize vehicle weight. Work on those two challenging technologies continues as the X-33 program enters a phase of intense testing and qualification of the vehicle's components.

Thurman goes the distance for Stennis Space Center

A love of his chosen profession and the opportunity to work at a place that allows personal growth is what compels NASA's Chuck Thurman to make the daily drive between Stennis Space Center and Hattiesburg. At home, Thurman enjoys spending time with his wife, Becky, and daughter, Donna.

Thurman is an instrumentation engineer in the Propulsion Test Directorate. As such, he is involved in a variety of programs and projects ranging from plume diagnostics to propulsion engineering to technology transfer at Stennis.

A NASA employee for 13 years, Thurman is originally from Houston but moved to Hattiesburg where he graduated from Hattiesburg High School in 1962. He attended the University of Southern Mississippi (USM), studying computer science, physics and mathematics but later joined the Army for three years. After his stint in the military, he completed his bachelor's degree in general science in 1972.

After graduation, Thurman worked at USM as a senior electronics technician and later as a power engineer in the university physical plant. In 1979, Thurman decided that he wanted to go back to school and attended Mississippi State University in Starkville. He graduated in 1982 with a bachelor's degree in electrical engineering.

Thurman came to work for NASA at Stennis in 1988. During his career with NASA, Thurman has had the opportunity to work on several interesting projects in the space program. He was part of a team from Stennis and Johnson Space Centers that

"Here, you've got a tremendous opportunity and a lot of support."

Chuck Thurman



worked together in locating thermal problems in the spacesuits used by the astronauts in their space walks. In addition, he was part of the Stennis team that participated at Kennedy Space Center in providing ice and debris detection equipment for the Shuttle Transportation System.

Thurman has also assisted in the transfer of NASA technology into the private sector by using his talents to help several companies develop insulated packaging for frozen seafood, pies and ice cream. Other technology transfer work has been with video systems, ultra-high-frequency radiation studies and microwave downlinking platforms for unmanned aircraft and dirigibles.

An important project in which Thurman is currently involved at Stennis is plume diagnostics. Plume diagnostics is primarily concerned with the operational health of rocket engines by studying the metallic content of the plume or exhaust of the engine. As engine parts experience stress and wear, molecular-size

SSC Employee Profile



metal particles flake off and enter the fuel stream and eventually exit the engine through the engine's exhaust.

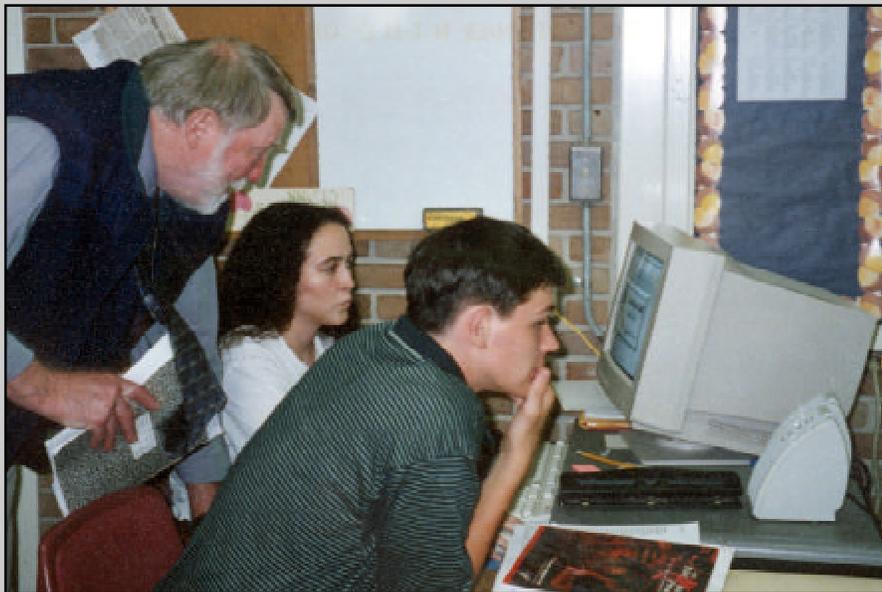
"It's extremely easy to have a catastrophic failure of an engine; they happen very fast," Thurman said. "We've found that we can be predictive and can get an insight into what's happening in a rocket engine long before a catastrophic failure occurs."

According to Thurman, the Engine Diagnostics Program has been in progress for more than eight years and is the only successful program in the agency in this area in achieving the diagnostic capability in preventing catastrophic rocket engine failure. Major success has been achieved for NASA's rocket engine test and flight programs in the last several years because shuttle engines were prevented from extensive damage through the use of engine diagnostics.

"Compared to jobs in industry I've had, this one has the most personal growth potential," he said. "Since I've been here, I've worked on shuttle systems, spacesuits, and all kinds of technology problems. NASA encourages you to learn things, and will even buy you the books. Industry is not like that. Here, you've got a tremendous opportunity and a lot of support."



Capt. Douglas Roulstone, center, commanding officer of the aircraft carrier U.S.S. John C. Stennis, and his wife, Bonnie Ruth, listen as NASA's Boyce Mix, right, director of the Propulsion Test Directorate at Stennis Space Center, points out some of the features of the center's test facilities from the A-2 test stand. Roulstone visited Feb. 5 to learn about the NASA facility that was also named for Sen. John C. Stennis of Mississippi.



Robert Kearney (left), with the University of Idaho, observes two Long Beach Middle School students while they work at a global positioning systems/geographic information systems module. Kearney was one of 10 representatives visiting the coast to study NASA's Workforce Development Education and Training (WDET) program. Long Beach Middle School is a site of the WDET pilot program, which is introducing remote sensing training to students in kindergarten to 12th grade classes in Mississippi schools.

Mississippi to be used as model in work force development

Representatives from four states are studying the success of NASA's Workforce Development Education and Training (WDET) program in Mississippi and are hoping to implement similar programs in their states.

WDET is part of NASA's Commercial Remote Sensing Program (CRSP) at John C. Stennis Space Center. It has been given the task of ensuring that a trained work force will be available to populate the rapidly growing commercial remote sensing industry.

The group toured Mississippi Gulf Coast Community College's West Harrison Center, one of six sites of the pilot program established by WDET and the Mississippi Department of Education. When fully implemented, this program will place remote sensing training within reach of all Mississippi students by 2003.

The global positioning systems/geographic information systems module is one of 25 modules in the school's Tech Prep program. Each student spends 10 days to two weeks at each module.

"It prepares us for the work place by showing us what's out there in terms of technology," one student said, when asked about the pilot program.

The group also toured Long Beach High School and Long Beach Middle School, which are also WDET pilot sites.

"Having a facility like Stennis so nearby has been very beneficial to us," Dr. Marlin Ladner, superintendent of the Long Beach School District, told the group.

The representatives visited with Kathy Roberts who is teaching a new remote sensing-based course for the first time this semester at Long Beach High School.

Roberts told her visitors that, "In the next ten years there is going to be such a demand for this technology that we are doing our students a great, great service by offering these classes."

Members of the group felt that this visit was very beneficial.

"We had a concept of what work force development is," Sharon Alexander, with the University of Montana, said, "but this visit has helped us to fill in the blanks."

"Being able to see the program actually being implemented has really given us an understanding of what we are undertaking," she said.

Get in shape for Y2K

The Stennis Space Center Wellness Center is doing its part in the Y2K battle.

During 1999, the Wellness Center is challenging Stennis employees to lose a combined total of at least 2,000 pounds by June and maintain the weight loss throughout the remainder of the calendar year.

The program is open to Wellness Center members as well as nonmembers.

Participants need to sign up with the Wellness Center and contact Wellness Center personnel weekly to notify them of weight loss or gain.

Totals will be calculated weekly. Information regarding exercise and nutritional hints will be distributed weekly to participants.

Help Stennis Space Center lose 2,000 pounds by June 1999 and maintain the loss through December 31. Call the Wellness Center at Ext. 3950 or e-mail at

wellness.center@ssc.nasa.gov.

Applications being taken for summer SHARP participants

The NASA Human Resources office at Stennis Space Center is currently taking applications for this year's Summer High School Apprenticeship Research Program (SHARP).

SHARP is a NASA-sponsored, research-based mentoring program, designed for students who excel in mathematics, engineering, science and technology. The program is conducted by nine participating NASA field installations during the summer months.

During the program, selected area high school students serve as paid apprentices to scientists and engineers for eight weeks. This year the program will run from June 7 to July 30.

To be eligible, students must: be a U.S. citizen, at least 16 years of age by the start of the program in June; be a permanent resident (in accordance with state residency requirements) and attend a school within a 50-mile radius of the NASA field installation in their area; be available on a full-time basis for the duration of the program; demonstrate an interest in and aptitude for careers in math, engineering, science or technology; and be willing to participate in a formal interview, if chosen as a finalist, as part of the placement process.

Applications have been mailed to area schools. Students interested should contact their school guidance counselors. Deadline for applications is March 5.

NASA's Education and University Affairs office at Stennis Space Center recently held a ribbon cutting ceremony for the National Geographic Educator Enhancement Center located in SSC's Little Red School House. The enhancement center is a partnership between NASA and National Geographic that will allow educators to view software before actually purchasing it. Pictured from left are: Keith Humphries, general manager of Johnson Controls at Stennis; Mark Craig, deputy director of Stennis; Dr. Dewey Herring, superintendent of the Ocean Springs School District and first vice chairman of the Gulf Coast Education Consortium; Dorothy Perreca, director of teacher training for National Geographic; and Dr. David Powe, NASA's chief of Education and University Affairs at Stennis.



Astro Camp applications being accepted

Applications are now being accepted for Stennis Space Center's Astro Camp 1999.

Astro Camp is a five-day summer day camp for children ages seven-to 12-years-old.

The theme for Astro Camp 1999 is "Star Station One™." The camp curriculum will incorporate the Star Station One™ program that is designed to increase awareness and excitement about the International Space Station.

This year's camps will be held again at two locations, Stennis Space Center and the Lynn Meadows Discovery Center in Gulfport, Miss.

During the camp, campers will become crew members for a simulated space station mission and will learn about astronomy, space program history and space theories. Campers will also participate in a field trip, space station module building, as well as team-building and traditional rocket building exercises.

Each crew member will receive a camp T-shirt, space station handbook/camp journal.

Enrollment is limited to the first 32 applicants in each age group.

The fee for Astro Camp is \$150 per crew member, and preregistration is required. A \$50 deposit is required with preregistration.

The deadline for preregistration is April 1.

To receive a preregistration form, call 1-800-237-1821 (select option 1) in Mississippi and Louisiana or call (228) 688-7842.

The schedule for this year's camp is:

Lynn Meadows Discovery Center, Gulfport

June 14-18

(7- to 9-year-olds)

June 21 - 25

(10- to 12-year olds)

Stennis Space Center

June 28 - July 2

(10- to 12-year-olds)

July 12 - 16

(10- to 12-year-olds)

July 19 - 23

(7- to 9-year-olds)

July 26 - 30

(7- to 9-year-olds)

Earth System scientists to conduct seminars

The Earth System Science Office (ESSO) at Stennis Space Center recently announced a monthly series of seminars for 1999.

The seminars, conducted primarily by ESSO scientists, provide a venue for the scientists to present their research to their peers, colleagues and other interested Stennis employees.

Topics will include coastal biochemistry, plant physiology, anthropology and remote sensing of forests, crops, soils, cities and coastal waters. Those interested in attending are welcome to bring their lunch and listen to this informal information exchange.

The tentative schedule is:

Mar. 10 - Greg Carter (NASA-SSC)

April 14 - Marco Giardino (NASA-SSC)

May 12 - Sid Mitra (Tulane University; Ecology, Evolution and Organismal Biology)

June 9 - Bruce Spiering (NASA-SSC)

July 14 - Greg Booth (NASA-SSC)

All seminars will begin at 11 a.m. For a location of the seminars, please contact the Earth System Science Office at Ext. 3800 or 1915.

To see an updated schedule of upcoming seminars, visit the Earth System Science Office web page at <http://www.ssc.nasa.gov/~eoro/>.



Mississippi Tourism Director George Smith, left, discusses the construction of a new 7,500-square-foot addition to NASA's John C. Stennis Space Center Visitors Center with Bo Clarke, right, a NASA project engineer at Stennis. Also participating in the discussion are Myron Webb, second from left, NASA's public affairs officer at Stennis and Mary Cracchiolo, manager of the Mississippi Gulf Coast Tourism Office. The addition will double the existing exhibit space in the Visitors Center and is expected to be completed and open to the public this summer.

NASA announces launch schedule

Space Shuttle managers this week decided to reorder the next two Shuttle missions, targeting a May launch for Discovery on STS-96, the next International Space Station mission, ahead of a July launch of Columbia on STS-93, carrying the Chandra X-Ray Observatory. Planning dates also were set for missions throughout this year.

Official launch dates are announced following the Space Shuttle Flight Readiness Review, approximately two weeks before each launch. The following target dates have been set for planning purposes:

***STS-96 DISCOVERY**
Space Station Assembly Flight 2A.1
May 20

***STS-93 COLUMBIA**
Chandra X-Ray Observatory
July 9

***STS-99 ENDEAVOUR**
Shuttle Radar Topography Mapper
Sept. 16

***STS-101 ATLANTIS**
Space Station Assembly Flight 2A.2
Oct. 14

***STS-92 DISCOVERY**
Space Station Assembly Flight 3A
Dec. 2

STS-96 will be carrying interior supplies and logistics to the station in a double Spacehab module and install U.S. and Russian spacewalkers' "cranes" on the station's exterior. STS-93 will be a five-day mission to place Chandra in orbit, the third of NASA's complementary family of space-based "Great Observatories" and the largest and heaviest shuttle cargo ever. STS-99 will be a mission devoted to Earth observations using a three-dimensional imaging radar.

STS-101 will carry logistical equipment to the station and assist in outfitting and checkout of the Russian-supplied Service Module, an early station living quarters. STS-92 will carry the first exterior framework, or truss, to be attached to the station as well as a third mating adapter.

The changes in the first two flights are a result of recent delays in shipping the Chandra X-Ray Observatory from the TRW Space and Electronics Group factory in Redondo Beach, Calif., to NASA's Kennedy Space Center, Fla.

NASA scholarship deadline is March 31

Applications are being accepted for six scholarships to be awarded by the NASA College Scholarship Fund Incorporated.

The fund, set up in 1982 through an endowment by author James Michener, provides college scholarships for qualified dependents of current or retired employees of NASA and dependents of current reimbursable detailees of NASA. In addition, college scholarships may be awarded to full-time students who are dependents of former NASA employees or reimbursable detailees to NASA who died while employed by NASA.

Six \$2,000 scholarships will be awarded for the 1999-2000 school year. The renewable scholarship is for a maximum of \$8,000 over six calendar years. Applicants must be pursuing a course of study in the science and engineering fields that will lead to a recognized undergraduate degree at an accredited college or university in the United States. Application forms and details are available from Mary Lou Matthews in the center director's office. Deadline for submitting applications is March 31.

Since 1984, three Stennis dependents have received NASA College Scholarship Fund scholarships. Contributors to the NASA College Scholarship Fund include the Freedom Forum, the Johnson Space Center Chapter of the Alumni League and NASA employees through the Combined Federal Campaign.

BUDGET...

(continued from Page 5)
to the International Space Station and \$3.2 million allocated to launch vehicles and payload operations.

In his address, Goldin added, "We have not targeted reductions in the shuttle program because we have already taken steps to make it safer and more efficient. The shuttle is safer than ever before, and because of our continuous improvement programs and shuttle upgrades, it costs the American taxpayer 21 percent less than it did in 1991.

We will not make any reductions in the civil service work force at our aeronautics centers. We are committed to maintaining the crucial technical skills in our civil service work force to assure that our nation has the ability to continue to lead the way in aeronautics.

We are now embracing an even more aggressive program for the Space Shuttle, which will improve quality and result in even more improvements for safety."

Goldin closed his remarks by noting that "NASA doesn't think small, because we plan for the long term, not the short term."



Information provided by NASA's Safety Reliability and Quality Assurance Office

Barrier creams helpful

Do you need dexterity to do your job? Or do you work with moving machinery where you can't wear gloves? And, do you find that when you do these jobs, your hands are exposed to chemicals? Then barrier creams may be for you. Creams/lotions that may be used instead of gloves to protect your hands from certain low-risk chemicals or situations are known as barrier creams. However, barrier creams do not substitute for gloves. Never use barrier creams as the sole protection in situations involving toxic solvents or acids or other high-risk situations.

Here are the barrier cream types:

***Vanishing cream**—Contains soap and emollients to coat the skin and cover pores. Makes cleanup easier and protects against mild acids.

***Water-repellent cream**—Leaves a thin film on the skin. Protects against irritants in waters: acids, alkalis, and metallic acids. CAUTION: Alkaline cleaning solutions can remove water repellent cream.

***Solvent-repellent cream**—Protects against irritating solvents, oils and organic compounds.

Because barrier creams are only effective in certain situations and for certain chemicals, it is crucial that you know exactly when barrier creams are appropriate. Check with your supervisor and the manufacturer's instructions.

QUICK LOOK

■ **Sponsors and volunteers are needed to help with the Special Olympics to be held at Stennis Saturday, March 27.** Those interested in sponsoring an athlete or volunteering to help with the games should contact the assigned person in their building or Jane Johnson at Ext. 3681.

■ **A barbecue will be held to support the Special Olympics at Stennis Space Center March 10.** Tickets are \$5. Drinks are not included. Tickets may be bought prior to the event. Those with prepaid tickets will be served from 11 a.m. until 1 p.m. All others will be served from noon until 1 p.m. The barbecue will be catered by Montana's restaurant. There will be entertainment and door prizes. Contact the assigned person in your building for information on purchasing tickets.

■ **Women's History Month will be celebrated during the month of March.** The Federal Women's Program Advisory Council will host a stress management seminar. The four-part seminar will feature stress management lectures and reflexology and aroma therapy instruction. For more information, contact Rhonda Foley at Ext. 1081.

Star Station One™ takes its show to a location near you

Star Station One™, a program designed to educate and excite the public about the International Space Station, will be coming to a location near you.

Stennis Space Center's Visitors Center is one of only 60 sites in the country chosen to be a partner in the Star Station One™ program. This demonstration with members of the audience shows how the first elements of the International Space Station were placed in orbit and connected.

The public and school groups are invited and encouraged to attend this unique, entertaining and informative program when it visits area malls. Admission is free.

Below is a listing of dates and locations:

**Turtle Creek Mall
Hattiesburg, Miss.**

March 13, shows at 11 a.m. and 1 p.m.

**Singing River Mall
Gautier, Miss.**

March 13, shows at 11 a.m. and 1 p.m.

**Northshore Mall
Slidell, La.**

April 24, shows throughout the day

**Louisiana Children's Museum
New Orleans, La.**

May 8, shows at 11 a.m. and 1 p.m.

Hundreds of children have been entertained by the Star Station One™ program when it made a visit to places such as Turtle Creek Mall in Hattiesburg, the Mall of Louisiana in Baton Rouge and the Lynn Meadows Discovery Center in Gulfport.

LAGNIAPPE

Lagniappe is published monthly by the John C. Stennis Space Center, National Aeronautics and Space Administration. Roy Estess is the center director, Myron Webb is the public affairs officer and Lane Cooksey is the news chief. Comments and suggestions should be forwarded to the Lagniappe Office, Building 1200, Room 208, Stennis Space Center, MS 39529, or call (228)688-3583.

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National Aeronautics and Space Administration

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