



# LAGNIAPPE

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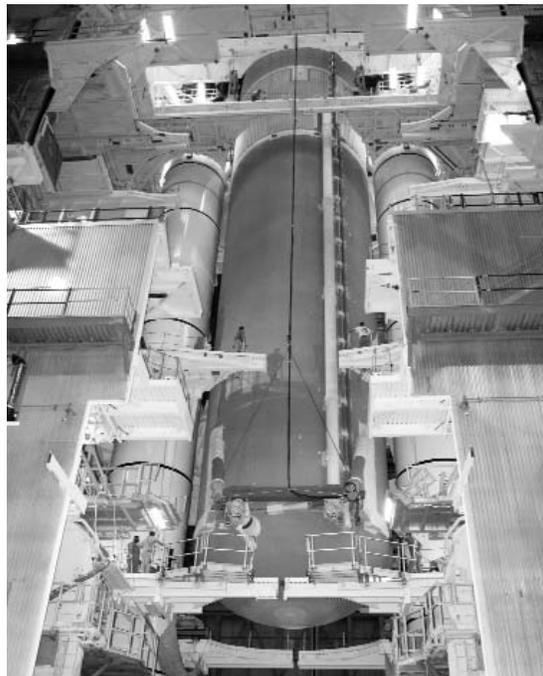
[www.nasa.gov/centers/stennis](http://www.nasa.gov/centers/stennis)

August 2008

## Launch update

### External tank readied for STS-125 mission

In the Vehicle Assembly Building at NASA's Kennedy Space Center, the external fuel tank for space shuttle Atlantis is lowered between two solid rocket boosters for mating on the mobile launcher platform. The external tank carries the fuel that will be used by a trio of space shuttle main engines to lift Atlantis into orbit for its STS-125 mission. All three of the main engines were tested at NASA's John C. Stennis Space Center. Engine 2059 was tested June 22, 2006. Engine 2044 was tested July 24, 1997. Engine 2057 was tested March 26, 2004. The engines will burn for eight and one-half minutes as Atlantis roars into space on a fifth – and final – servicing mission to the Hubble Space Telescope. Launch is targeted for Oct. 8.



### STS-124 crew visits Stennis

NASA's John C. Stennis Space Center Deputy Director Gene Goldman (center) welcomed members of the STS-124 Discovery space shuttle crew during their July 23 visit to the facility, presenting each with a commemorative photo of a rocket engine test firing. STS-124 crew members who visited Stennis were (l to r): Pilot Ken Ham, Mission Specialist Karen Nyberg, Mission Commander Mark Kelly, and mission specialists Ron Garan and Mike Fossum.



### VPP – shooting for the 'Star'

In 1982, the Occupational Safety and Health Administration established a proactive safety management model so organizations and their employees could be recognized for excellence in safety and health. Today, about 2,000 organizations officially call themselves VPP Star Sites. NASA's John C. Stennis Space Center leaders have set their sights on achievement of VPP as well.

VPP stands for Voluntary Protection Program and is based on the protection of employees, OSHA compliance, employee involvement, and partnering with OSHA. Stennis' goal is to achieve VPP by the fall of 2010. Employees can help by:

- Joining their company's employee safety committee or getting involved with the Striving to Achieve Real Safety group, which is Stennis' official employee safety committee, made up of NASA and contractor employees. For details on STARS, visit: <http://stars.ssc.nasa.gov>

- Reporting hazards immediately via the "Close Call System." A close call is an event or condition that could have resulted in an accident, injury or illness but, due to other factors, did not. The system is available at: <https://sscweb.ssc.nasa.gov/ccrs> or <http://sscportal.ssc.nasa.gov/>

- Fixing hazards within one's control before they become the next mishap.

- Ensuring one's own safety with proper training and understanding of job safety aspects.

**Mark your calendars!**

**Stennis Open House and Public Engine Test  
Wednesday, September 10**

From the desk of  
**Gene Goldman**  
 Deputy Director,  
 Stennis Space Center



“So, first of all, let me assert my firm belief that the only thing we have to fear is fear itself.” With these words, in 1933, President Franklin Roosevelt began to lead this nation out of the Great Depression. As an agency and center, our path is not nearly so uncertain, yet fear of change still presents challenges. Change is the only constant in life. We can rarely control change; we can control how we manage it.

We are fortunate to have the specific mission of propulsion testing. Each of our jobs enables – or effects – that task. Our mission and workforce do not change during shuttle transition to Constellation. In 1998, this center had a test article in every position; we are on that threshold again. We now have a brief window to make minor changes in organizational function and concept of operations, “tweaks” intended to improve efficiency as we approach the peak of Constellation testing. How we lead during this time will

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 time to be working  
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 future ‘good old days’  
 of space exploration.”**

largely dictate the success of our nation’s return to the moon.

Leadership is a difficult characteristic to describe. We know it when we see it, yet we can’t define unique precepts. The only common denominator is an ability to collectively achieve a goal. We all have leadership qualities and responsibilities. To be a good follower is to lead by example. In a high-performing organization, leadership does not merely reside in the senior management

team; it permeates the culture. All of you are the leaders of Stennis Space Center. You are a resilient people. Demonstrate the traits so evident in the aftermath of Katrina: determination, cooperation, flexibility, concern for your neighbor. They are what brought this region through that ordeal; they are what will assure our success.

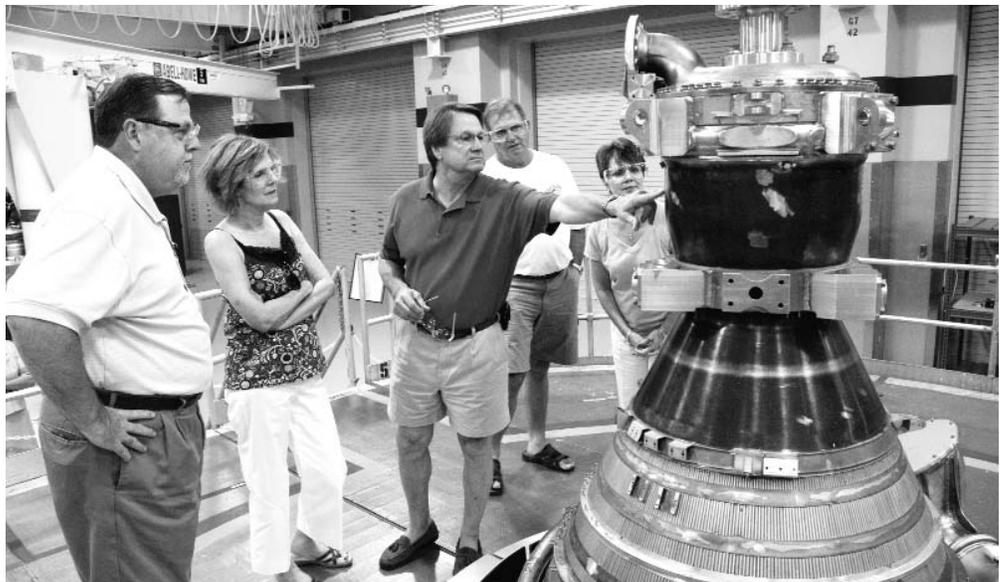
Mac McAnally wrote, “It’s my job, and that’s the thing people respect in me. It’s my job, and without it,

I’d be less than what I expect to be.” Let’s expect the best from ourselves and each other. This is an exciting time to be working in space. These are the future “good old days” of space exploration. Lead; cherish!

*Gene Goldman*

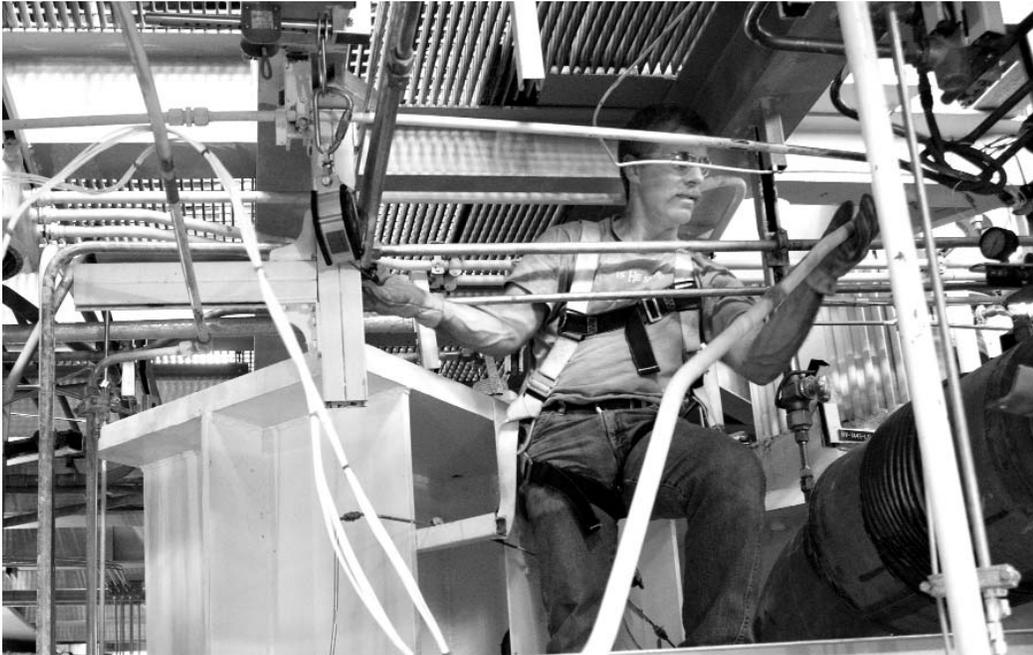
## Louisiana congressman visits Stennis Space Center

U.S. Rep. Charlie Melancon (center), D-Louisiana District 3, examines a modified J-2 heritage engine component during a tour of the Pratt & Whitney Rocketdyne engine processing facility at Stennis Space Center. Melancon toured Stennis facilities Aug. 4, during the congressional August recess. In addition to Jeff Johnson (l to r) of Pratt & Whitney Rocketdyne, Melancon was accompanied on the tour by his wife, Alida, and friends Michael and Rosalyn Small. In the U.S. House, Melancon is a member of the Science and Technology Committee, serving as vice chair of the Subcommittee on Space and Aeronautics.



## FULFILLING NASA'S EXPLORATION MISSION

# A-1 modification work under way



Phil Schemanski of Pratt & Whitney Rocketdyne removes equipment inside the thrust drum on the A-1 Test Stand as part of a comprehensive modification project to prepare for testing the new J-2X engine. All thrust drum equipment will be removed and replaced in the most extensive modification of the test stand since the early 1970s, explained Allen Forsman, Pratt & Whitney Rocketdyne test engineer. Modification work on the stand will continue throughout this year and 2009. Testing of the new J-2X engine that will help carry humans back to the moon is scheduled to begin in early 2010.

## Stennis engineers prepare for key test series

Having completed a successful subscale diffuser test series that produced vital data for construction of the A-3 Test Stand, engineers at NASA's John C. Stennis Space Center are focusing on a chemical steam generator initiative equally critical to the project.

The generator is essential for creating the vacuum needed to simulate high altitudes on the new stand. The simulated altitudes are necessary for testing the new J-2X engine to make sure it will perform as required in NASA's Constellation Program, designed to carry humans back to the moon and on to other possible destinations.

"The chemical steam generator unit does just what it says it does — it generates steam," said Barry Robinson, chemical steam generator project manager. "And superheated steam is what will be used to create the vacuum on the A-3 Test Stand."

Ground was broken last August for the A-3 stand, the first test structure

to be built at Stennis since the 1960s. Workers soon will begin erecting the 4 million pounds of structural steel needed to raise the 300-foot stand. Once construction is complete and the test stand is activated, A-3 will allow testing at higher simulated altitudes than possible on Stennis' other three test stands.

The technology for creating the vacuum needed in that testing is not new — it already is used at NASA's White Sands Test Facility in New Mexico. However, Stennis engineers will require the chemical steam generator to do more than it ever has in simulating altitudes up to 100,000 feet.

"We're employing this technology on a larger scale than ever before," Robinson explained. "So, we have to validate the actual hardware at the E Test Complex before we use it on the A-3 stand."

The versatile E Test Complex at Stennis was constructed in the late 1980s and early 1990s. Its three stands include seven separate cells, which are

used for testing that involves high-pressure gases and cryogenic fluids.

The team's goal is to identify any design or operational problems that might exist with the generator, and address them before use on the A-3 stand. It is the same mission Stennis engineers initially fulfilled in testing a subscale version of the large diffuser to be used on the test stand. That effort continues to provide invaluable data for building the full-size diffuser.

The chemical steam generator test project is even more important, Robinson indicated. "This is the real deal," he pointed out. "Unlike the diffuser effort, which involved a small-scale version of the equipment needed, this is the actual hardware we will use. And it either works how we need it to, or it doesn't work. That's what we have to find out."

The initial chemical steam generator test series is expected to begin in October and continue until mid-December.

# Hurricane risk mitigation

Three years ago, Hurricane Katrina took dead aim on NASA's John C. Stennis Space Center, leaving significant damage and changing the facility's rocket-engine testing routine into recovery efforts.

Stennis managers are working hard to prevent another storm from doing the same.

Following repairs, the 43 roofs replaced after Katrina are stronger, built with a wind load rating of 130 mph, compared to the previous 90 mph rating. Power line rights of way have been cleared to reduce the risk of falling trees knocking out the system, and wooden poles have been replaced with concrete poles for critical circuits. The electrical transformers needed in the event of another storm also have been restocked.

"We've completed recovery work, and we're drawing to a close on repair projects," notes Randy Holland, Stennis Katrina Recovery Program manager. "Now, let's talk

about the future. What are we doing for the future so there's less risk to personnel, to our facilities and to our mission?"

To that end, Holland and his team have identified 23 risk mitigation projects to be completed at a cost of about \$100 million.

"If another Katrina hits, overall, we are working toward less of an impact and a shorter time to do assessments and get us back on our mission," Holland says.

Katrina exposed key needs at Stennis. During the storm, hundreds of individuals sought refuge at the center, which is not designed to operate as a public storm shelter. The hurricane left Stennis without adequate power or reliable communications and largely shut the facility off from the outside world.

In one instance, gaseous nitrogen and missile-grade air used to maintain a positive pressure for the cen-



Construction work on a new Emergency Operations Center at Stennis Space Center is expected to be complete by February 2009, with actual occupancy of the fire, medical and security teams and will provide a top-grade facility for emergency management operations for the south Mississippi facility.

ter's test facilities ran short, putting all test facilities at risk of contamination. Stennis test engineers could have faced an expensive and time-consuming process to restore the high level of cleanliness needed for rocket engine testing.

That and other concerns are being addressed in scheduled risk mitigation projects, Holland emphasizes.

Upgrades are being made to the High Pressure Gas Facility to provide the emergency power needed to supply pressurized air in the event of another storm. Work also is under way to enable increased gaseous nitrogen production. Both steps will reduce the risk of contamination. Projects also are planned to provide safe monitoring of the cryogenic facility and its mission-critical liquid oxygen and liquid hydrogen barges during storm conditions.

But those are just some of the risk mitigation projects under way, Holland notes.



Workers install a bulk diesel storage tank for use at Stennis Space Center. Installation of additional diesel storage tanks is part of the center's hurricane-related risk mitigation work. The additional tanks represent one of 23 risk mitigation projects designed to help the center withstand another storm, such as Hurricane Katrina in 2005.

# work ongoing at Stennis



Stennis Space Center is nearing completion. Construction is expected on a new building planned for later that year. The new building will house a command post to support storm emergency responder teams and emergency operations.

For future storms, Stennis managers have modified the emergency operations plan and updated sheltering policies, emphasizing the facility is a “last resort” option. An Incident Command Post also has been established. It has full backup power to address emergency operation needs in the event of a future hurricane.

Other major efforts include establishing power and communication routes to the north so future storms will be less likely to leave Stennis in the dark and cut off from the outside world.

Managers also are working to provide better protection of critical records in the event of a storm, through an enhanced Stennis Data Center Server and a hurricane-resistant records retention facility. Part of this effort involves implementing a backup system so that whatever happens at Stennis, computer data and system capabilities can be accessible from a remote site.

A co-funded Emergency Operations Center is under construction as well. Scheduled for completion in 2009, it will house first responder fire, medical and security teams and provide a top-grade facility to support storm emergency response teams and emergency management operations. The new center also will provide improved emergency communications capabilities and feature a heliport for emergency access via helicopter.

Implementation also has started on improved backup power and enhanced center emergency power-switching capabilities. New generators and power monitoring capabilities for critical facilities are being provided. Four portable and three stationary generators already are on site. Work to provide additional bulk diesel storage has been completed.

Design is under way to expand Highway 607 toward the north within the gates of Stennis. This will help eliminate the evacuation route bottleneck and maintain access to the center

after a storm. The state of Mississippi is planning on widening the road from Stennis to Interstate 59.

“Our mitigation efforts are approximately 25 percent complete, with completion of all mitigations planned by mid-2010,” Holland says. “Stennis will be in a much better position to weather future storms with potentially less of an impact and a shorter time to get us back on our mission.

“We never want to have to live through something like Katrina again – and hopefully, we won’t have to. But even if we don’t, there are side benefits to the work we’re doing now that will increase our center’s overall efficiency and effectiveness throughout the year.”

And if another storm does head Stennis’ way, the facilities will be ready, Holland adds. “It’s like that umbrella in your office,” he explains. “You don’t need it every day, but when you do, it makes all the difference.”



A worker pours concrete as part of a nitrogen risk mitigation project at the High Pressure Gas Facility at Stennis Space Center. The concrete slab will provide the foundation needed to place new pumps at the site and is part of ongoing hurricane-related mitigation work at Stennis. Center managers initiated a series of such projects after Hurricane Katrina slammed the area in August 2005.

# 1988: Stennis takes name of strong supporter



**Editor's Note:** *NASA's John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. Each month, Lagniappe looks back on important moments in the center's history.*

Twenty years ago, President Ronald Reagan signed an Executive Order establishing the John C. Stennis Space Center, formerly known as the National Space Technology Laboratories. NASA's newest space center honored a man who had dedicated more than 40 years of his life to public service – Sen. John C. Stennis.

During the dedication ceremony held three months later on Aug. 3, 1988, Sen. Stennis expressed his gratitude to those present. “This is really one of the great moments that I’ve had in public life – especially when it comes to deep appreciation for what you’ve said, what all of you have done and the quality of citizenship that’s represented here today,” he said.

Stennis, a native of DeKalb, Miss., was a staunch supporter of NASA and played a pivotal role in convincing the agency to build its test facility in south Mississippi.

“The price of freedom is hard work,” Stennis declared during the ceremony, as he reminisced of the days in the early 1960s when President John F. Kennedy announced his desire for America to send a man to the moon and prove the nation’s superiority in space.

Stennis reminded employees that when the need arose to build a test facility to support the president’s dream, “It was hard work that prompted the decision that you fine people made about moving on with meaningful steps in this direction – going on and doing it early, ... doing it effectively.”



The late U.S. Sen. John C. Stennis speaks during a 1988 ceremony naming NASA's rocket engine testing facility in south Mississippi in his honor.

The senator’s involvement with the test facility did not end at its construction. As the Apollo Program neared completion, he worked with local, state and federal officials to reinvent the center into the “federal city” that it is today. More than 30 federal, state, academic and private organizations and numerous technology-based companies share the cost of owning and operating the facility, making it more cost-effective for each agency to accomplish its independent mission.

Stennis left the crowd at his ceremony with this message: “I feel that America is on the right track. I know that our fine people of Mississippi are on the right track. They stand for something, and more than ever, they are doing something about building up and maintaining our own state.”

Stennis died April 23, 1995. His legacy lives on, as the John C. Stennis Space Center continues its NASA mission.

*Note: Sen. John C. Stennis' quotes originally were published in a Lagniappe commentary on Aug. 29, 1988.*

## Carstens retires as Stennis manager

Stennis Space Center Director Bob Cabana (left) presents a certificate of retirement to Dave Carstens, Project Directorate director. Carstens was honored during a retirement reception Aug. 4. His retirement closes out a 30-year career with NASA. Carstens joined the agency as a presidential management intern. Beginning in 1995, he headed the business management office at the Marshall Space Flight Center in Huntsville, Ala. He joined the Stennis team in 2001, serving a year as deputy director of the Center Operations Directorate. He managed the Office of External Affairs and Education from 2002 to 2003. He also served as acting director of the Earth Science Applications Directorate and director of the Business Management Directorate before assuming his position in the Project Directorate.



# 160 years ago – birth of the women’s rights movement

On July 13, 1848, five women met for tea in upstate New York. Having commiserated about the lot of women in American society, they did something brash and wonderful: They sent off a notice to the local newspaper, announcing “a convention to discuss the social, civil and religious conditions and rights of woman” to be held six days later in Seneca Falls.

The newspaper announcement attracted Charlotte Woodward’s attention. Eighteen-year-old Woodward lived in Waterloo, N.Y. She worked at home sewing gloves, and was not happy with her limited opportunities. “I wanted to work, but I wanted to choose my task, and I wanted to collect my own wages.”

Charlotte Woodward was delighted when she read the announcement for the woman’s rights convention. Several of Charlotte’s friends also were interested and agreed to attend with her.

Early on the morning of July 19, those country girls started on their long drive, in a horse-drawn wagon. As they drove along, they witnessed an unusual number of vehicles, family carriages, chaises, surreys and farm wagons join the procession to the convention. Women formed the majority of the passengers, but some of the vehicles were also driven by men.

In all, some 300 people attended the Seneca Falls Convention. The majority were ordinary folk, like Charlotte Woodward. Most sat through 18 hours of speeches, debates and readings. One hundred of them – 68 women (including Woodward) and 32 men – signed the final draft of the Declaration of Sentiments and Resolutions. Women’s rights as a separate reform movement had been born.

On November 2, 1920, 72 years after that daring call for female voting rights was issued at the Seneca Falls Convention, 91-year-old Charlotte Woodward Pierce went to the polls in Philadelphia. She was the only signer of the Seneca Falls Declaration who lived long enough to cast her ballot in a presidential election. *(Excerpts from NPS.gov “Women’s Rights”)*

From the **Office of Diversity and Equal Opportunity**

## Hail & Farewell

### NASA bids farewell to the following:

**David Carstens**

Director  
Project Directorate

### And welcomes the following:

**Lakeisha Wills**

Contract Specialist  
Office of Procurement

## @ Stennis

### What is your reaction to realizing NASA has only 10 shuttle missions remaining?

**Editor’s Note:** @ Stennis is a monthly feature highlighting the views and opinions of Stennis Space Center employees.



“I’m excited about where NASA is going. Based on the changes to go to Mars and elsewhere, that’s where I have the biggest hope NASA is going in the right direction.”

**John A. Cacconi, NASA**

“I think it’s cool because they have a whole new plan. To me, it’s really cool that they’re phasing it out and going to a whole new mission”

**Holly Harris, NASA**



“I think the space shuttles are great. I had never seen them before I came here, and I’m just amazed to see them.



I wish there could be more to create more jobs.”

**Kasandra Gilmore  
Jacobs FOSC Group**



“I think it’s the end of a great science program – getting all the payloads and stations up.”

**Gary Benton, NASA**

“It’s sad. They’re exciting, and people really look forward to seeing them and hearing about the job they do. But we have a new program coming, so hopefully, the excitement will continue.”

**Lorri Clark  
NASA**



# Summertime full of activity at Stennis



Hundreds of children participated in the annual Take Our Children to Work Day at Stennis Space Center on July 29. During the day, children of Stennis employees received a tour of facilities and took part in various activities, including demonstrations in cryogenics and robotics.



The Pre-Service Teachers Institute sponsored by Jackson (Miss.) State University participated in an agencywide Hubble Space Telescope workshop at Stennis Space Center on July 18. Twenty-five JSU junior education majors participated in the workshop, a site tour and educational presentations by Karma Snyder of the NASA SSC Engineering & Safety Center and Anne Peek of the NASA SSC Deputy Science & Technology Division.



NASA DEVELOP students at Stennis Space Center recently held a midterm review with George Crozier, who serves as a science adviser to the team. The team also was joined by Jamie Favors of the Mobile (Ala.) County Health Department DEVELOP Team; Cheri Miller, the team's NASA adviser; and Kenton Ross, a team science adviser. Students participating in the meeting included: Lauren Childs, Jason Jones, Maddie Brozen, Matt Batina, Jenn Frey, Angie Maki and Aaron Brooks. The primary purpose of the meeting was to update Crozier on the status of the team's work for the summer 2008 term and discuss plans for the fiscal year 2009 project proposal. This included discussion of a possible project to study the effects of hurricanes on the Florida panhandle. DEVELOP is a NASA-sponsored, student-led, student-run program focused on developing projects to help communities.



In July, Stennis hosted 30 educators from across the state as part of Mississippi State University's Industry Education Partnership initiative. The educators spent a week attending classes and touring resident facilities at Stennis. This year, training focused on mission geography and remote sensing. Above, a pair of educators engage in a hands-on mission geography project presented by Penn State University professor Steve Cullivan.

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