



Marshall Star, April 3, 2013 Edition

MARSHALL STAR

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Q & A with Deputy Center Director Teresa Vanhooser

By Jena Rowe

- **Starting out as an engineer in the Ground Systems Analysis Branch, your career with Marshall is truly one of working your way up the ladder. Did you ever imagine yourself ending up as the deputy director of Marshall?**

Never, ever, ever. It was not in my plans at all. I've always enjoyed working with people and the people aspect of any job was always really important to me. That's really weird for an engineer, right? People think of engineers as wanting to isolate themselves, as introverts and that they meet the typical Myers-Briggs ISTJ personality type. I'm not. I'm a little more in between. I've got a little bit of the introverted side, but I really like people. Growing up, my parents were always very supportive of whatever I wanted to do -- the sky was the limit. They always told me they would help me achieve whatever I wanted to achieve. So there was never an "if" I was going to college. It was always a "when" I go to college. My whole growing-up stage was always about that. Now, what I was going to be? There were always different options. When I came to Marshall and worked in the ground systems area and when I looked at the center director job and the deputy center director job, I thought those were people that I would never really interface with. So, no, I never imagined I would be in this position. To me it's pretty exciting to be here and for Patrick [Scheuermann, Marshall Center director] to ask me to take on this job. There are just a lot of things that change and opportunities that you get along the way that prepare you to grow into those kinds of things.



Teresa Vanhooser (NASA/MSFC)

- **What are your major duties as deputy director? How do you and Center Director Patrick Scheuermann**

complement each other in leading the center?

If you ask Patrick, he'll tell everybody who comes in that we are interchangeable. Whatever he can do I can do and vice versa. But we do have certain roles that we focus on. Patrick's focus is on the strategic part. He is very much up and out, making sure we communicate the center's capabilities and program activities, and keeping a bigger view of where we need to be from a center perspective. My focus is on implementation. How we are going to implement programs and projects, how are we going to get them done, how are we going to make sure the center is meeting its commitments and what do we need to do around that? One of my primary responsibilities is running the Center Management Council, which is focused on how we are doing on all the programs and projects -- a natural council for me to be the chair of given the way we've divided our responsibilities. We divide and conquer. We share all kinds of responsibilities and we stay well-connected. We're communicating to make sure that everything gets covered and that we know what issues are popping up. According to Patrick, he chose me because of my breadth at the center. I've worked big programs, small programs and institutional projects when I was a deputy in engineering. As a result, I have a very broad understanding of what the center does and what each of those particular types of programs, projects and the general institution worry about. I think that's the strength I bring. Somebody coming in new to the center would need time to get that. Patrick brings uniqueness from the fact that he has been at different centers in leadership positions and can bring fresh ideas into how we do business. And, from a strategic perspective, he's phenomenal. So, when you put us together and build on those strengths, I think we make a great team.

- **Having experience in various positions at Marshall throughout your career, are there any lessons learned that you apply to the position of deputy director?**

First of all, I've learned that each organization has its own built-in culture. You need to understand where people are coming from, and what makes them think the way they do, to help move the organization forward. I have to think about how engineering struggles with different kinds of problems than the programs and projects struggle with. When I look at problems, I try to look at them from multiple directions and ask myself why people are saying what they're saying. Because I've had so many different jobs, I'm able to connect those dots about why people react or act the way they do, and help bring those together. I had to learn very early in my career that you don't react to only one story. You can't always take the first thing you hear and react to it. You should make sure you get all of the stories together and then come to your own conclusions. Secondly, I learned that people watch their leaders. Whether you think that's the case or not is irrelevant. They do. They pay more attention to what you do than what you say. It's really about recognizing the fact that people watch your actions. How you act as a leader is more critical than what you say as a leader. A lesson learned that goes along with that is to assume positive intent. Assuming positive intent with your coworkers goes a long way toward success. So try to get to the root of their intent and try to understand -- instead of just assuming they're trying to create problems for you. The bottom line is, it's all about relationships. Building relationships throughout your career is important. There are relationships that I built very early in my career that I still count on today and know I could go back to if I needed information or support. Building those relationships throughout your career is key to any leader's success.

- **What is your philosophy of leadership?**

Treat people with respect. Build trust with your team. And be a humble leader. Those are my big three. Treat people with respect is number one because I'm a firm believer that if you treat everybody respectfully -- you don't have to agree with everything they say -- you can accomplish a whole lot more and it will make the environment that you're working in a much happier place to work. If you haven't built trust and don't have integrity you're not going to make it very far. If people can't trust that you're going to do what you say you're going to do, then it will be very difficult to be a successful leader. I believe with all of my heart there is no way I could be sitting in this position today without a whole lot of help from a whole lot of people. They taught me leadership skills that helped me build the teams I was on. I think

that people who tell you they did it themselves and it's all about them are fooling themselves. Considering the magnitude of what we do, there is just no way. To me, it's all about being a humble leader and recognizing that it took a lot of people to get you where you are today. I have gotten to work for and with some awesome folks along the way. Looking back, I can pick out specific situations and people that I learned from and what I took from their leadership style to help develop mine.

- **What are your greatest strengths as a leader and how do those benefit the center?**

I think my greatest strength is my ability to connect with people. I really believe that I have a connection with a lot of people across the center and having that keeps me well grounded and in touch with what's going on across the center. People, at least so far, are very honest with me about what they're seeing. I think that is because they know I don't overreact. Simply because one person says something, I don't go into solution mode. I take things in stride and collect the data. If enough rumbling is going on, then I'll say maybe we need to do something. Building new leaders and developing new leaders is another one of my strengths. I am very passionate about mentoring and believe that is a leader's number one responsibility -- to build and develop those that are coming up behind them to be great leaders. I love doing that.

- **Have you set any goals to accomplish as deputy director? What are they and how do you plan to accomplish them?**

Well, one of them I have already accomplished. One of my passions is the Center Management Council, or CMC. I really wanted the CMC to take a different turn than where it was headed. I wanted to create more of an engaged, interactive meeting that really focused on our responsibility as a CMC to look at the programs and projects. I talked to a lot of people, worked with OSAC, talked with the programs and projects, Engineering Directorate and Safety and Mission Assurance Office and asked how could we get this to be more engaging. We rolled out those changes in February and just started the implementation in March. We'll see how it goes. We reduced the scope of what we were trying to cover so that we could really focus on the core projects at the center. So far, at the last two CMCs there has been much more engagement, so I'm hoping that pattern will continue. From a personal standpoint, I want to be more engaged with the community. I would like to more strategically engage in the partnerships that we need to be building, especially those external to the center. Communication is always one that I'm focused on -- making sure that our communication is integrated and that we have one voice as to where we're headed from a center perspective. I think we've gotten so much better with that over the last couple of years, especially in some of the integrated strategies around center investments and things like that. Seeing that success and seeing how people are growing in their understanding proves that the time and effort that we spend to get integrated is worth it. That will be a focus of mine to make sure we continue down that path and to make sure the center stays integrated across what we do and in the message we communicate to the community.

- **Prior to becoming the deputy director, you served as manager of the Flight Programs & Partnerships Office. How does the center benefit from partnering with industry and other government organizations?**

One, it helps us continue to develop and enhance our skill set by bringing new kinds of hardware in and new things to do. Conducting a wind tunnel test or propulsion test on different hardware keeps the spark going of learning about new things and how to test things differently. It also is a good use of the facilities we have. We have awesome facilities and it would be a shame not to share those with our partners. Again, it instills the community feeling when we're building those partnerships and sharing what we have. It is not an "us and them" mindset. It is a "we" mindset. We need them to be successful in low Earth orbit and supplying the station so that we can keep our focus on beyond low Earth orbit. We can help them to be successful with our expertise because we've learned it through shuttle, or we learned it

through Apollo or other experiences and we need to be able to share that with them. It's just a win all the way around in my opinion.

- **Affordability is becoming a major focal point. How is the center postured to continue working in a stressed fiscal environment?**

We've got to keep an open mind. I think that's key. Often we get accused of wanting to do things the way we've done it before and of not thinking outside the box. But I have seen multiple cases where we are definitely thinking of different ways of doing things. For example, SLS could not have gotten as far as they have today without looking at new ways to solve problems, new ways to build hardware, new technologies to build parts differently and all kinds of things. I think being open-minded on how we can solve problems is a big key. Some of our new hires think very differently and we need to take advantage of that. We need to take advantage of the way they think and how they approach things differently than the way we've done it for so long. Diversity and inclusion really is key to affordability -- diversity of thought, ideas and ways of doing things. Getting people from different walks of life included in problem solving makes for a better solution. Everybody brings a different background to the table with the opportunity to look at things in a completely different way. A scientist may come in and look at an engineering problem from a whole different perspective. A thermal engineer and a structural engineer may look at the same problem differently. To me, affordability is really about bringing the right people together to help solve some of the problems we're looking at and figure out a better way of doing things.

- **What do you see as the center's greatest strengths? How will those strengths contribute to Marshall Center's future?**

Our engineering capabilities are the strength of Marshall. They have been for ages and they continue to be. It is who we are. Yes, we have a lot of other areas we're strong in. But our core is engineering. Another strength is problem solving. We love problems. We love them because problem solving is a very focused effort on solutions and we will not let it go until it's solved. That goes back to our engineering heritage. Engineers love to solve problems. I think that's where our strengths are and I think that's how we're going to be successful in the future. We have that to lean on when we look ahead at what we have coming -- whether it's launch vehicles or science instruments. It's about our engineering capabilities and what we can do to solve the problems that people hand us and how we can deliver on what we say we're going to deliver on.

- **How important is it for the center to support STEM (science, technology, engineering, math) education to attract our future workforce?**

I think when kids think about science or math, NASA has to be one of the things that comes to their minds. We need to make sure we're doing our part to get and keep the word out about what we're doing and to keep the excitement level up about the cool things we do. For example, I think it's really awesome that we have the International Space Station working 365 days a year, 24 hours a day. People get so focused on the retirement of the shuttle. I really think we need to be focused on the positive aspects and how we can communicate them externally to students. We need to put messages out there on things that they can relate to. I think it's really important that we use the NASA name to encourage kids in the areas of science and math. We can't leave it to the teachers to be the only ones to do so. We have to help them do that. We should communicate with students on a level that they can understand and gets them excited. If we don't, we're going to be in trouble. Engineering is a great field and you can do so much with it. The breadth of what you can do with an engineering degree is pretty wide. We must never lose sight of the fact that it's our responsibility to keep those messages out there -- and not just with the teachers. We have a responsibility to educate students and parents about the possibilities associated with focusing on STEM education.

Irma Burden Named Director of Marshall Center's Office of Diversity and Equal Opportunity



Irma C. Burden (NASA/MSFC)

Irma C. Burden has been named director of the Marshall Space Flight Center Office of Diversity and Equal Opportunity. In the role, which she assumed April 1, she is responsible for managing, planning, directing and implementing a comprehensive equal opportunity program for the center.

Burden comes to Marshall after a 31-year career with the Department of the Navy, during which she held a number of positions. Most recently, she served as command deputy for the Equal Employment Opportunity and Diversity Officer for the Naval Sea Systems Command in Washington, D.C., directing a program that included more than 55,000 employees in 37 field activities throughout the United States.

Burden's wide range of experience with equal employment matters also includes 12 years as deputy Equal Employment Officer at the Naval Surface Warfare Center in Panama City, Fla.

"We are pleased and fortunate that Irma Burden will be bringing her wealth of experience advancing diversity and equal opportunity to our program," said Marshall Space Flight Center Director Patrick Scheuermann.

Throughout her career, Burden has promoted equal employment within the government. She expanded the Naval Surface Warfare Center's black employment program into the African American Leadership Council and, as the council's founding president, established an awards recognition program for African Americans in pioneering careers at the center. Burden also established a process for ensuring diversity in senior-level positions at the Naval Sea Systems Command.

Burden earned a master's degree in counseling and psychology from Troy University in Troy, Ala., and a bachelor's degree in human services from Alabama State University in Montgomery. She has completed the U.S. Office of Personnel Management Executive Leadership Program, programs at the Brookings Institution, the Leadership Development Program at the University of Maryland, the Dale Carnegie Course and other leadership programs.

She is the author of a number of articles promoting equality of opportunity and the value of human service, and served on the 103rd Congressional Senate Labor and Human Resources Committee chaired by the late Sen. Edward M. Kennedy of Massachusetts. During that special assignment, Burden also supported a health care reform conference at Tufts University in Boston.

Burden received numerous awards for her Department of the Navy service, including the Navy Meritorious Civilian Service Award. She also received special recognition at the 14th Annual Women of Color Science, Technology, Engineering and Mathematics, or STEM, Conference in 2009 for her support of STEM efforts.

Marshall Center Engineering Directorate Gets an Education with 'SLS 301'

By Bill Hubscher

To keep the workforce updated with progress being made on NASA's next rocket, managers from NASA's Space Launch System Program, or SLS, spent the morning of March 20 going in-depth about SLS with members of the Engineering Directorate at NASA's Marshall Space Flight Center.

Image right: Members of the NASA's Space Launch System leadership team address a group from the Marshall Center's Engineering Directorate in a special briefing called "SLS 301" in Building 4716. From left are SLS Chief Engineer Garry Lyles, SLS Program Manager Todd May, and Director of the Engineering Directorate Chris Singer. (NASA/MSFC)



The special briefing, called "SLS 301," was a high-level progress report for engineering employees. The rocket, managed at the Marshall Center, is designed to take humans farther into space than ever before.

"NASA's challenge is to push the frontier and go farther," SLS Program Manager Todd May told the 150 people gathered in Building 4316 for the discussion. "The International Space Station is built and doing great things; the shuttle is retired. We are about discovery and SLS is the next step to go beyond."

May, SLS Chief Engineer Garry Lyles and Marshall Center Engineering Director Chris Singer talked about the rocket's mission and took questions from team members.

Lyles talked about the process of designing the SLS rocket.

"In order to reach where we want to go, our vehicles need to evolve," Lyles said. "It takes a strong vehicle to carry human explorers to entirely new destinations. While there will always be engineering challenges, we have a great team who has taken great strides to get us this far this fast and great leaders in each area."

Both May and Lyles also addressed scheduling challenges. Since program engineers do not have to develop a new rocket engine -- SLS will use RS-25s from the Space Shuttle Program -- and will use the same basic design of the boosters, the schedule and budget become more manageable.

One attendee asked about the deployment of the engineering workforce at the Marshall Center as the SLS Program approaches a preliminary design review in the summer of 2013.

"The Marshall Center brings so much scientific expertise to the table among the variety of work we do here," said May. "We're laser-focused on delivering this rocket by our required launch date and once we establish that credibility by meeting that date, it opens the door for more payload projects."

May, Lyles and Singer wrapped up the meeting by addressing affordability and its effect on safety, assuring that the major SLS tenets are safety, affordability and sustainability.

"We carefully assess risk and involve safety officers at every turn," Lyles said. "Safety is not new for us and we work solutions for these concerns at every level. It is not a metric that we simply measure, but a value that we live by."

More briefings are planned for the future involving the Engineering Directorate as well as the rest of the Marshall Center workforce to communicate past progress as well as challenges ahead toward meeting the 2017 launch date.

Hubscher, an Analytical Services Inc. employee, supports the Office of Strategic Analysis & Communications.

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Marshall's Fayssal Safie: First to Receive STEP Level 4 Qualification at NASA

By Jena Rowe



As a young man from Lebanon, Fayssal Safie came to the United States to complete his education. Now, almost 35 years later, he serves as the NASA Reliability and Maintainability, or R&M, Technical Fellow lead.

Image left: Fayssal Safie, NASA Reliability and Maintainability Technical Fellow lead, received the Safety and Mission Assurance Technical Excellence Program, or STEP, Level 4 Qualification. He is the first NASA employee to complete the Level 4 R&M curriculum and the agency's first Level 4 graduate of STEP. (NASA/MSFC/Fred Deaton)

"In my long career with Marshall, I have been given the opportunity to do and be a part of many exciting things," said Safie, who began his career at NASA's Marshall Space Flight Center in 1986 as a reliability and quality engineer.

His career has not gone without recognition. Receiving over 50 honors and awards for accomplishments and service at NASA to date, Safie's latest achievement is the Safety and Mission Assurance Technical Excellence Program, or STEP, Level 4 Qualification. STEP is a career-oriented, professional development roadmap for Safety and Mission Assurance professionals. Safie is the first NASA employee to complete the Level 4 R&M curriculum, as well as the first Level 4 graduate of STEP NASA-wide.

"Fayssal has led the way for Marshall and NASA being the first person to attain a level 4 qualification in any Safety and Mission Assurance discipline," said Steve Cash, director of Safety & Mission Assurance at Marshall. "He is a true leader in his field of Reliability and Maintainability and a recognized expert. I am very proud of his accomplishments."

STEP is a voluntary training program that focuses on six disciplines divided into four progressive levels with additional curriculums for those with cross-discipline or leadership interests. Completion of each level demonstrates a measured increase in knowledge and skills. Successful completion of all four levels requires 487 hours of academic training, 1,000 hours of on-the-job and enrichment training, and a minimum of eight years related professional experience.

After completing all of the requirements, Safie submitted an application for qualification, passed a formal assessment of his technical capabilities by a peer review panel, and his qualification requirements then were validated by the STEP Qualification Board chaired by Alan Phillips, director of the NASA Safety Center. Phillips submitted a recommendation for approval to Terry Wilcutt, NASA chief of Safety and Mission Assurance.

Though the process is strenuous, Safie was willing to push -- not only to complete the program, but also to help develop and

strengthen it as he progressed.

"This qualification is not just about me," he stressed. "It is about STEP as a whole. It is about leading by example and honoring those who have led and motivated me. Safety and Mission Assurance Director Steve Cash, Marshall Center Director Patrick Scheuermann and Terry Wilcutt have all motivated and supported me along the way. This program is also critical for developing and educating the next generation of young engineers entering the workforce."

Safie will serve as the chairman of the STEP Peer Review Panel going forward.

Rowe, an Analytical Services Inc. employee and the Marshall Star editor, supports the Office of Strategic Analysis & Communications.

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Marshall Women Inspiring Women

NASA's Marshall Space Flight Center held a special program March 28 to commemorate Women's History Month. At left, Marshall Deputy Director Teresa Vanhooser leads the program's panel discussion, themed "Women Inspiring Innovation through Imagination: Celebrating Women in Science, Technology, Engineering and Mathematics." Joining her in the discussion are, from left, Erika Alvarez and Lakiesha Hawkins, both engineers in Marshall's Propulsion Systems Department; Caroline Wang, an engineer in Marshall's Avionics and Software Branch, part of the Safety and Mission Assurance Directorate; Lisa Watson-Morgan, chief engineer in Marshall's Flight Programs & Projects Office; and panel facilitator Kimberly Keith, an organizational development specialist in the Office of Human Capital. (NASA/MSFC/Emmett Given)



Michelle D. Bernard, chairman, founder, president and chief executive officer of the [Bernard Center for Women, Politics & Public Policy](#) in Potomac, Md., talks to Marshall Center team members about the importance of women in technical careers during the Women's History Month program. Bernard also is an author and frequent political and legal analyst on MSNBC and other television networks. (NASA/MSFC/Emmett Given)

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James Webb Space Telescope Wings Arrive for Testing at Marshall

By Janet Anderson

NASA Marshall Space Flight Center's X-ray and Cryogenic Test Facility recently received the James Webb Space Telescope's wings for testing. In order to prepare the Webb structures to meet the extreme temperatures of space, engineers at the X-ray and Cryogenic Facility will carefully examine telescope components inside a vacuum chamber that simulates the hyper-cold temperatures of space, chilling the hardware from room temperature down to a frigid minus 414 F. Results will reveal any imperfections that occur with the components so changes can be made if needed.



Image right: Marshall team members receive and prepare the James Webb Space Telescope wings for testing. (NASA/MSFC/Fred Deaton)

The wings have 900 separate parts and enable the mirrors to be folded and fit within a 16.4-foot-diameter fairing aboard a rocket. Each of the parts was made from lightweight graphite composite materials using advanced fabrication techniques. Once the telescope is in space, the wings will enable the unfolding of the mirror section to its full 21-foot diameter.

The wing assemblies were designed and constructed by aerospace and defense product supplier ATK at its Utah facility.

The James Webb Space Telescope is the world's next-generation space observatory and successor to the Hubble Space Telescope. The most powerful space telescope ever built, the Webb telescope will provide images of the first galaxies ever formed, and will explore planets around distant stars. It is a joint project of NASA, the European Space Agency and the Canadian Space Agency.

For more information about the Webb Telescope Mirrors, visit: <http://www.jwst.nasa.gov/>

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Find this article at:

<http://www.nasa.gov/centers/marshall/about/star/index.html>