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THE

CHRONICLE

Published for the employees of SPAWAR Systems Center Atlantic

**MRTS:
Cost effective training
for the digital age**



Charleston Mayor John Tecklenburg speaks to young men visiting SSC Atlantic March 1 as part of the 'My Brother's Keeper' initiative. See story on page 21.



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Spring 2016

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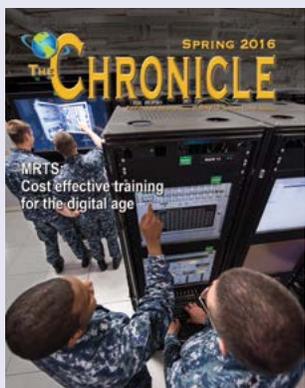
The Multipurpose Reconfigurable Training System simulates real world scenarios and challenges Sailor's problem solving and critical thinking skills.

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Secretary of the Air Force Deborah Lee James visited SSC Atlantic before speaking at a recent cyber event.

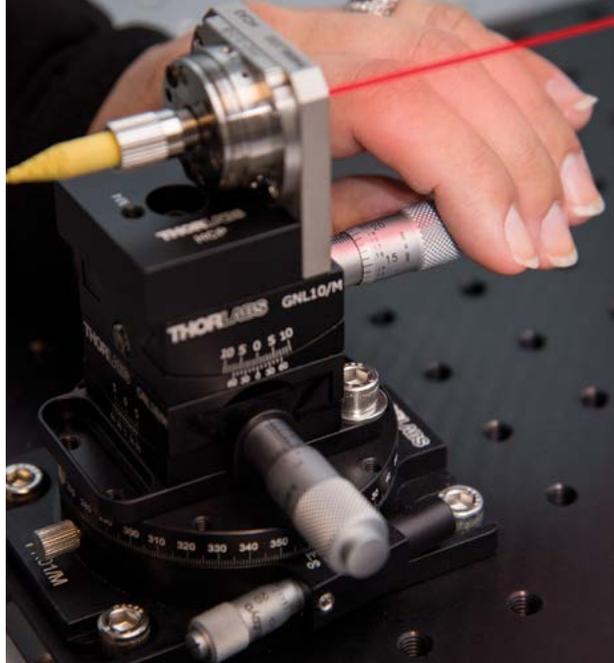
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SSC Atlantic's optical lab in the Multidisciplinary Research Center opens a new realm of R&D opportunities.



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Sailors train on the Multipurpose Reconfigurable Training System (MRTS) at SSC Atlantic. The trainer answers the CNO's call for more realistic virtual training at a reduced cost. See story on page 4. Photo by Joe Bullinger.



SSC Atlantic's advanced optical research laboratory will support innovative laser and photonic research. See story on page 8.

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**Systems Center
ATLANTIC**

P.O. Box 190022
North Charleston, SC 29419-9022

Commanding Officer..... Capt. Scott Heller
Executive Director Chris Miller

SSC Atlantic
Mission, Vision and Values

We rapidly deliver and support information warfare capabilities to our Naval, Joint, National and Coalition Warfighters.

We enable Warfighters to Secure America and promote global freedom.

The Chronicle is a quarterly publication designed for SSC Atlantic employees. Its purpose is to inform, educate, entertain and generate new ideas.

Contents of The Chronicle are not necessarily the official views of, or endorsed by, the U.S. Government, the Department of Defense, the U.S. Navy or SSC Atlantic.



Editor Susan Piedfort

Command Photographer Joe Bullinger



Chris Miller speaks at the May 26 All Hands gathering.

Miller returns as ED

Chris Miller returned to SSC Atlantic as Executive Director May 2 after completing a temporary assignment as Program Executive Officer (PEO) for the Department of Defense (DoD) Healthcare Management Systems (DHMS).

During his leadership of PEO-DHMS, Miller was responsible for competitively acquiring, testing, delivering and successfully transitioning to an Electronic Health Record system that allows patients and clinicians to capture and share health data. The \$4.3B prime contract, competitively awarded without protest, will enable improved healthcare for 9.6 million active military personnel, their families and their beneficiaries. Miller's team also created cross DoD/VA data standards and governance that will enable broader enterprise interoperability between all health systems.

Miller previously served as SSC Atlantic Executive Director from January 2010 until December 2013.

Askew reports as Executive Officer

Cmdr. Lane Askew reported aboard as SSC Atlantic Executive Officer (XO) in January, following a tour at Commander Carrier Strike Group One Staff as N6/Knowledge Management Officer.

The Wilkes-Barre, Pennsylvania native began his naval career by enlisting as a nuclear electronics technician in 1994. After completing 'A' School he received a direct accession appointment to the U.S. Naval Academy. He graduated with a Bachelor of Science degree in computer science and was commissioned in May 1999.

His previous assignments were with VP-47 based at Marine Corps Air Station Kaneohe Bay, Hawaii; Area Control Center Division Officer at Naval Computer Telecommunications Area Master Station Pacific (NCTAMS PAC) in Wahiawa, Hawaii; Combined Joint Task Force Seven (CJTF-7) at Camp Victory in Baghdad, Iraq; SPAWAR Space Field Activity supporting the National Reconnaissance Office in Chantilly, Virginia; Naval Postgraduate School in Monterey, California; Commander U.S. Third Fleet Communications and Information Systems (CIS) Headquarters Operations Officer (N61); CIS Fleet Operations Officer (N62); Exercise Rim of the Pacific 2012 CIS Working Group Lead; Information Assurance Manager in Point Loma, California; and Naval Satellite Operations Center Executive Officer.



Askew

Command Master Chief Jackson

AVCM (AW/SW) Brian M. Jackson reported to SSC Atlantic as Command Master Chief in January. Jackson has served as the 4.1 Optimized Organizational Maintenance Activity (OOMA) Military Resource Manager for SSC Atlantic since August 2013.

Jackson was born in Colorado Springs, Colorado and grew up in Longmont, Colorado where he graduated from Skyline Senior High School in June of 1992.

Jackson joined the Navy in September 1994. His previous duty assignments include **USS Abraham Lincoln (CVN 72)**; Sea Operational Detachment (SEAOPDET); **USS John F. Kennedy (CV 67)**; the Center for Naval Aviation Technical Training (CNATTU) Oceana; **USS Nassau (LHA 4)**; **USS Carl Vinson (CVN 70)** and **USS Dwight D. Eisenhower (CVN 69)**.

Jackson earned a Bachelor of Arts in sociology from Saint Leo University and a Master of Science in criminal justice from Kaplan University.



Jackson



Above, SSC Atlantic Commanding Officer Capt. Scott Heller and S.C. Governor Nikki Haley applaud as awards are being presented at PCDC. At right, Clemson students show the teamwork that helped them win the collegiate competition.

Governor drops in on PCDC action

**By Michelle Rehr-Matash
SSC Atlantic Public Affairs**

A special visitor stopped by to see the next generation of cybersecurity professionals at the fourth annual Palmetto Cyber Defense Competition (PCDC), hosted April 9 through 11 by SSC Atlantic and the Lowcountry Chapter of the Armed Forces Communications and Electronics Association (AFCEA).

South Carolina Governor Nikki Haley made an appearance Saturday, telling the competing high school students, “We need you to care about cybersecurity because it is real.”

The goal of the PCDC is to energize South Carolina high school and collegiate students to focus on the development of technical skills in networking and cybersecurity.

Over 300 people attended the event held at Trident Technical College in North Charleston, including approximately

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Photos by Joe Bullinger

From left, Lead MRTS Instructor ETR1/SS/DV Tyler Stephany, Communications Division Leading Chief Petty Officer ETRC/SS Stephen Nasadoski and Instructor ETR2/SS Matthew Moubray train fleet Sailors on a MRTS trainer in Norfolk, Virginia.



Photos by Jerry Sekerak

MRTS Training for the digital age

Warfighters have always required specialized training to learn the weapons and systems they will use on their actual missions. Today's digital battlespace technologies require hands on, interactive training with instant feedback. Training must simulate real world scenarios and challenge Sailors' problem solving and critical thinking skills. For submariners especially, on-board training is a challenge, given that subs are out to sea for extended periods, and replicating tactical shipboard systems for training is costly.

Enter the Submarine C4I MRTS – Multipurpose Reconfigurable Training System – a PC-based, network controlled, 7,000-pound system featuring 20-inch single-touch and 42-inch multi-touch liquid crystal display screens with 3-D graphics that simulate the exact equipment submariners use onboard the boat. It was developed at SSC Atlantic to train Sailors to use the Common Submarine Radio Room (CSRR).



Communications Division Leading Chief Petty Officer ETRC/SS Stephen Nasadoski and ETR2/SS Matthew Moubray, instructor, work on the trainer in Norfolk.

With MRTS, the emphasis is on simulating multiple platforms and versions that are hosted on the same trainer. Since it uses commercial, off-the-shelf hardware and software, trainers can shift between multiple applications that offer photo-realistic scenarios on a variety of systems. Instructors can vary the scenarios to train new or experienced Sailors, for pre-deployment training, for specific mission environments or to address weak areas that require more training. They can even simulate a catastrophic systems shutdown for communications systems – all in a single day.

MRTS also takes advantage of the fact that almost every Sailor coming into the Navy today knows how to use a touch-screen and has probably played a first-person perspective video game. The virtual simulations provide a familiar and intuitive way of learning for these digital natives.

“Older guys like to train on the real thing. They want it to feel the same, to work the switches and feel the pressure in their hands,” said Bruce Rasmussen, former MRTS project manager who is now project manager of CSRR Training Curriculum Development. “But those trainers are expensive to build and to maintain. The switches and moving parts break. MRTS is designed with software so it doesn't break, and the younger Sailors feel right at home with this kind of interface,” he added.

MRTS was immediately recognized as a good idea. In 2013, William Gutierrez was in Orlando when he got a call from Rasmussen asking him to come to Charleston. Gutierrez became the MRTS software development lead and they started building the development environment from scratch. “We procured the equipment and hired the people,” Gutierrez said, “it was challenging.” They started developing the new V3 products in the lab here at SSC Atlantic and kept writing curriculum guides and technical manuals. After further development, MRTS delivered its largest upgrades to the fleet in its history.

The ease of reconfiguration of the system is one of its



ETRI/SS/DV Tyler Stephany, Communications Division Leading Petty Officer, Lead Instructor, preps MRTS for another class. The PC-based, network controlled, 7,000-pound system featuring 20-inch single-touch and 42-inch multi-touch liquid crystal display screens with 3-D graphics that simulate the exact equipment submariners use onboard the boat.

advantages. “You can put in any training configuration that you want,” said Gutierrez. “Instructors can load an SSBN or SSGN trainer without leaving their seat. They can train one boat class in the morning and a different one in the afternoon. They can inject faults or casualties at any point, which was not possible with tactical trainers. You can bring it up and down quickly and easily, or even put it in a pause mode.”

The timing of the new training system could not have been better. “With budget cuts there was not enough money to buy all the equipment needed to build follow-ons to the tactical trainers, so they removed all tactical trainers in schoolhouses and installed the MRTS solution, which lessened the overall footprint and maintenance of the previous tactical trainer,” said Rasmussen, adding that MRTS is now in place at all of the Navy’s submarine homeport training sites.

To have one tactical trainer in a schoolhouse costs \$22 million, plus \$5 million to modernize it over its lifetime and \$500,000 a year to maintain it. MRTS costs \$1.2 million; that includes procuring the hardware and software, installation, curriculum and maintenance. “We put them in seven training sites with 11 different software configurations for under \$10 million,” said Rasmussen. “That’s a savings of more than 60 percent.”

The team has also shortened the time to produce MRTS trainers. “At first it took 18 months, now we have it down to nine months from start to finish,” Gutierrez said. “We’ve been doing it over 10 years now and have been able to leverage our experience. Plus we are always looking at efficiencies and improving our processes,” he added.

Courtney Green, who recently took over as MRTS project manager, emphasized the scope of work and the impact made by the team. “Most people around the command don’t realize

that we procure, integrate and test the radio rooms here in Bldg. 3112. SSC Atlantic also installs them and sustains them through In Service Engineering Agent (ISEA) and logistics support, while the MRTS training and curriculum are developed here as well,” she said.

According to Rasmussen, since MRTS training started in 2006, it’s safe to say all enlisted submarine communicators have touched MRTS, for pre-deployment training, for certifying SSBN/SSGNs to deploy, or for various missions including strategic, battle group, strike, special warfare, intelligence, surveillance and reconnaissance. They have used the MRTS curriculum guides and tech manuals the SSC Atlantic team developed. “We have a huge impact on submarine communicators today,” he said.

They graduate 240 Sailors a year from the MRTS training. They track metrics and adjust as needed. MRTS simulators have already been shown to increase Sailors’ level of knowledge during modernization training by 31 to 33 percent, he added. In the first and second quarters of fiscal year 2016, there was not a single training-related trouble ticket in the fleet on MRTS.

“The magnitude of the impact of a small amount of people is impressive; we have 10 to 15 people on the team, maybe 20 if you count the business financial manager and contract support folks. We don’t even have as many people as we need,” Green said. “ISEAs are also here. They are the ones tracking the systems in the fleet. If they see a common problem, we get the feedback and make adjustments here,” she added.

The team is looking to expand MRTS capabilities in the

Continued on next page



SSC Atlantic supervisor receives Reserve award

By Jerry Sekerak
SSC Atlantic Public Affairs

SSC Atlantic's Surface Installation Planning Competency Supervisor Doug Mueller recently received a Patriot Award from Employers Support of the Guard and Reserves (ESGR). Mueller received the award for his support of one of his employees, (Ens.) Chuck Castorina, who is a reservist.

Walter Goodwyn, Tidewater Area Chair for ESGR, presented Mueller the award during an impromptu ceremony held in Mueller's office.

Patriot Awards are awarded to individual supervisors through nomination by an employee serving in the National Guard or Reserve, or the spouse of a Guard or Reserve member, for support provided directly to the nominating service member and his or her family.

In the award nomination, Castorina praised Mueller for supporting his Navy Reserve career and for providing a letter of reference to the Navy for consideration by the Direct Commissioning review board. Castorina's nomination writeup on Mueller reads in part:

"When it was time to travel for annual training he [Mueller] approved my leave request without question and even helped me identify the process for continuing my pay and benefits while on annual training orders. When I returned from annual training, Mr. Mueller was understanding of the need for me to catch up on two weeks of missed action items and accepted the overdue responses to some of these action items without question."

"As a retired Naval Reservist myself I have an appreciation for the challenges of being a drilling reserve member and recognize how important it is to have the support of your supervisor," said Mueller.

The Patriot Award reflects the efforts made to support



Photo by Jerry Sekerak

SSC Atlantic's Doug Mueller, left, is congratulated by Walter Goodwyn, Tidewater Area Chair for ESGR for support of the Guard and Reserves.

Citizen Warriors through a wide-range of measures including flexible schedules, time off prior to and after deployment, caring for families and granting leaves of absence if needed.

"In the case of (Ensign) Chuck Castorina, when he mentioned seeking a commission in the Reserves to me, I immediately thought that he would make a fine naval officer, and I would be proud to be able to serve with him, so writing an endorsement of his application was simple," said Mueller. "That Chuck nominated me for this award is an honor almost beyond description. It is the most valued award I have received in my career since it came through the initiative of one of my people. Thank you Ensign Castorina!"

MRTS

Continued from previous page

future with 3D and virtual/augmented reality. Efforts are beginning to include Tech Tube videos which are like YouTube but only for CSRR. These and other ideas have been a result of the Submarine Communications and Associated Network Training Management Team, or SCANTMT, which meets for three days twice a year and includes the MRTS team, and representatives from fleet and type commanders, the Submarine Learning Center, OPNAV manning, logistics, other program offices, instructors and anyone else who has a piece of submarine training. "We bring all stakeholders in twice a year to feel the pulse of the submarine training community," Green said. "This meeting platform has been a key activity to ensure that our training program is meeting the needs of the fleet," she added. Rear Adm. Christian Becker, now PEO C4I

and recently named to succeed Rear Adm. David Lewis as COMSPAWARCOM, wants to use Submarine C4I MRTS as the single point training solution for submarine training products.

Not only has the U.S. Navy taken notice of MRTS, but it has also received interest from Saudi Arabia, Australia and Great Britain, in addition to the Coast Guard and PMW 760 (Surface).

With its cost avoidance and ease of use, MRTS meets the Chief of Naval Operations' goal of increased development and fielding of virtual training environments to provide more realistic training at a reduced cost. Providing maximum training capability with minimum infrastructure cost, MRTS is a big SSC Atlantic success story. "We have great people who work really hard," said Green of the MRTS team. "They are all very passionate about it. That's why it is so successful."

-Susan Piedfort, Chronicle Editor

SECAF James returns to Charleston

Secretary of the Air Force Deborah Lee James visited SSC Atlantic May 6 while in Charleston to speak at an SC Cyber-sponsored luncheon held at Trident Technical College (TTC).

James was appointed Secretary of the Air Force Dec. 20, 2013. From 2007 to 2010 she was employed at SAIC, a key industry partner with SSC Atlantic.

“It’s wonderful to be back and, of course, fantastic to be back at Trident Technical College which, as has already been noted, is the premier hub for delivering cybersecurity education to the workforce of South Carolina,” James said in her luncheon address.

“And I certainly want to thank you in particular for partnering with SPAWAR on the Palmetto Cyber Defense Competition. In my opinion, we need more events like this so that we can collectively inspire more of our young people to prepare for cyber careers and for STEM careers. We need more young people like this in both government and industry,” she said.

While at SSC Atlantic James met Commanding Officer Capt. Scott Heller and Executive Director Chris Miller, and received a SquirrelWorks brief. SSC Atlantic’s Bill Littleton and a S.C. National Guard rep conducted introductory cyber security classes after the luncheon at TTC.



Above, James is greeted at SSC Atlantic by Commanding Officer Capt. Scott Heller and Executive Director Chris Miller. Below, James chats with SSC Atlantic’s Vincent van Houten, left, and Bill Littleton, second from left, about SSC Atlantic’s cyber ranges in development and cyber forensics at the luncheon.



Photos by Joe Bullinger



Photos by Joe Bullinger

Brooke Baker and Robert Brown work in SSC Atlantic's optical lab, which provides two vibration isolation optical tables, one active and one passive, for precision alignment and multiple test set ups, hundreds of lenses, filters, mechanical fixtures and ample work space for running concurrent projects.

Optical lab opens new research realms

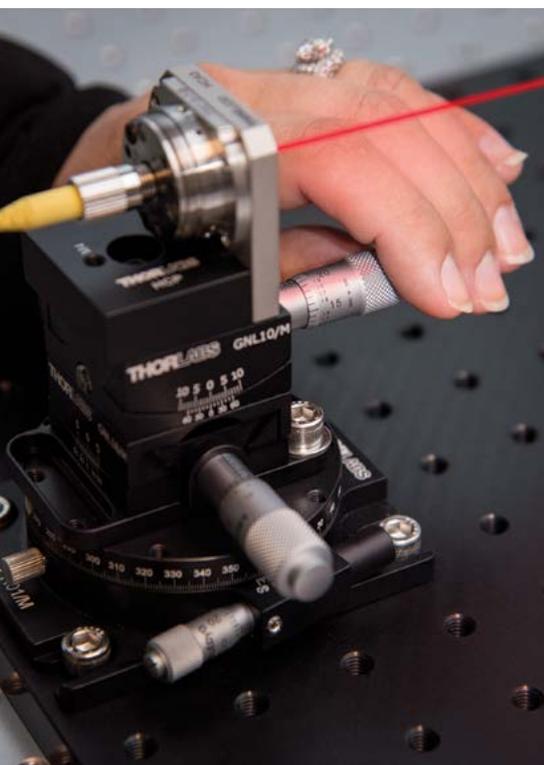
**By Brooke Baker
Physicist, Code 71000**

Over the past year SSC Atlantic's Science and Technology (S&T) group has built a state-of-the-art optical research laboratory in the Multidisciplinary Research Center (MRC). The optical laboratory provides a wide range of new research capabilities, including free space optical communications, high data rate transmission, datalink development and Position Navigation and Timing (PNT) in a global positioning system (GPS)-denied environment, all to support SSC Atlantic's continued growth in S&T.

This versatile, top-of-the-line photonic research laboratory provides two vibration isolation optical tables, one active and one passive, for precision alignment and multiple test set ups, hundreds of lenses, filters, mechanical fixtures and ample work space for running concurrent projects. This modern facility enables current and future research at SSC Atlantic to support the Navy's continuing expansion into the photonics and laser communication fields.

The optical lab presently supports two Naval Innovative Science and Engineering (NISE) projects in Charleston, and another involving Range Tracking which is being managed in Hampton Roads. More projects involving the optical lab are planned for next year.

The first project is a small-scale Light Detection and Ranging (lidar, also written LIDAR, LiDAR or LADAR) setup and a surrogate over-the-air demonstration of PNT data using satellite communication (SATCOM) signals. Lidar is a surveying technology that measures distance by illuminating a target with a laser light. This research aims to improve the accuracy of PNT data without relying on GPS.



Weapons, navigation and C4ISR systems have a critical need for PNT data not susceptible to interference, jamming, and spoofing in GPS-denied environments.

The second NISE project is a laser setup to detect changes in the optical properties of laser light due to different atmospheric conditions, such as salt fog. Data gathered in this design will be incorporated into models developed by SSC Pacific to improve laser communications. Describing, predicting and measuring the effects of the atmosphere on propagating electro-optical (EO) signals, i.e., lasers and imagery, is of critical importance to the Navy's strategic and tactical needs, and this lab supports those needs by providing a safe, designated space for continuing optical research and development.

Future plans include continuing the research in these fields as well as expanding SSC Atlantic's involvement in photonics research by reestablishing the Doublet Pulse Coherent (DPC-LADAR) system at the Townes Institute Science and Technology Experimentation Facility (TISTEF) in Cape Canaveral Florida, run by University of Central Florida (UCF) for 1km range tests and eventually hosted payload experiments. Currently housed at Langley Research Center in Hampton, Virginia, the DPC-LADAR system is a ground-based, long-range LADAR system developed by other government agencies for aerospace observation and

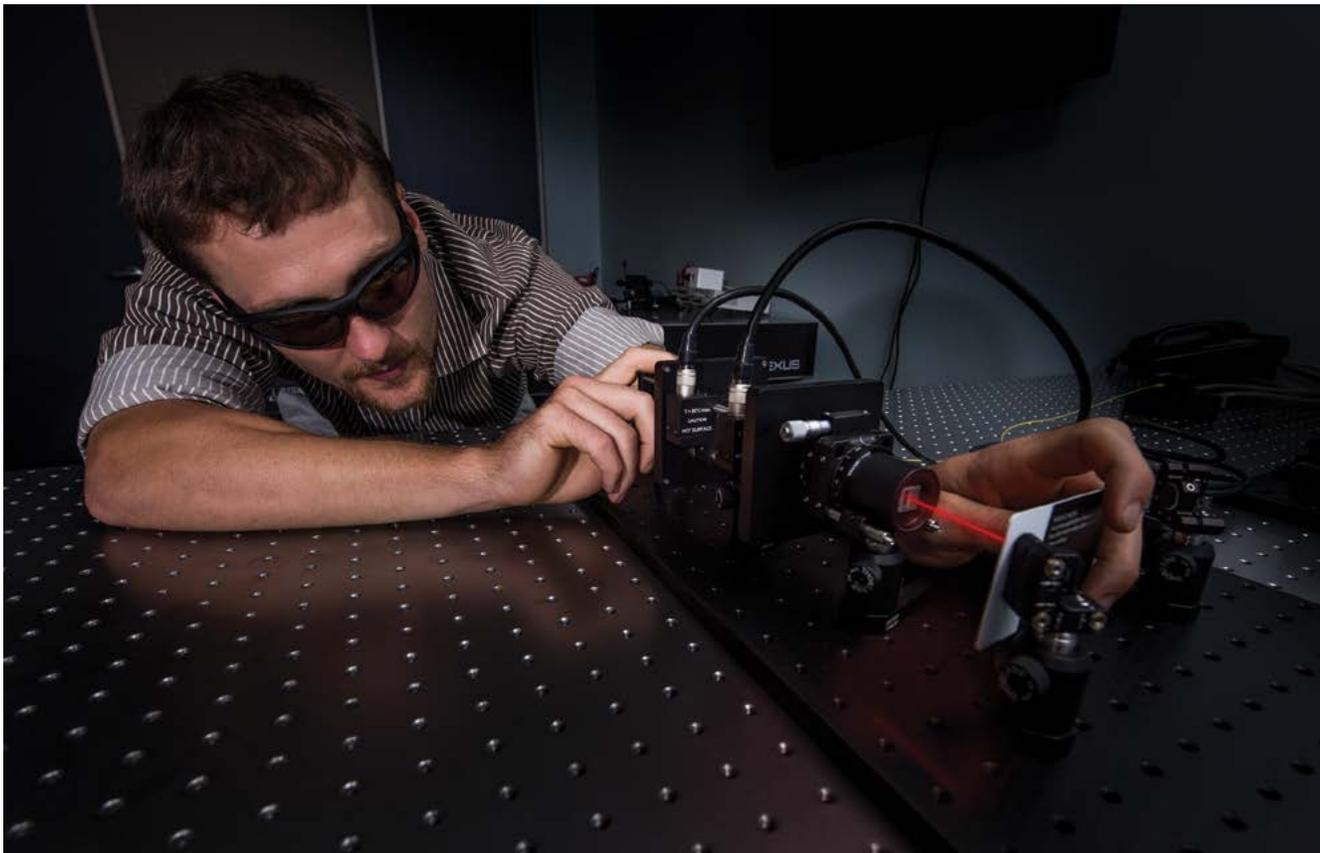
measurement. The objective is to use this system to expand SSC Atlantic's LADAR capability by leveraging the SSC Pacific telescope infrastructure already located at TISTEF. By collaborating with SSC Pacific, University of Central Florida, and other government agencies. Our goal is to have the DPC LADAR system operational in time to participate in the HALO-Net Hosted Modulated Retroreflector payload on the STPSat-5 spacecraft.

Another SSC Atlantic NISE project underway in Hampton, Virginia, is a Range Tracking project, which investigates the use of passive solar illumination to measure and track the range of space objects. The idea exploits variations in the solar radiative output intensity to create a reference signal from direct sunlight, which is cross-correlated to the reflected sunlight from an object in order to determine a delay path time difference and, subsequently, range. The new laboratory will support and assist in the designing and building of telescopes and other equipment needed for this endeavor.

This involvement with current photonic projects is just the beginning of SSC Atlantic's growth into the emerging realm of photonics and lasers and their applications in communications, LIDAR, energy transfer, and so much more.

This advanced optical research laboratory will support innovative laser and photonic research to support SSC Atlantic's mission to deliver information warfare capabilities.

Continued on next page



Robert Brown sets up a laser in the optical lab. SSC Atlantic's optical lab helps support the Navy's continuing expansion into the photonics and laser communication fields and provides a safe, designated space for continuing optical research and development.

Optical lab offers new research capabilities

NISE projects use optical lab to develop information warfare solutions for the warfighter



Electro-Optical Effects of Salt Fog
Brooke Baker, 71000

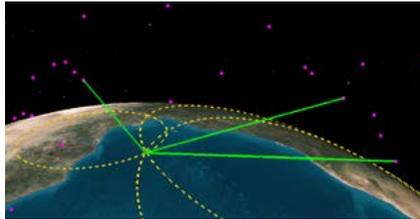
The objective of this project is to increase the reliability and usefulness of Navy electro-optical (EO) systems in all relevant operational environments by working with SSC Pacific to explore the optical properties of salt fog. The ocean presents atmospherically challenging conditions, such as salt fog, that affect communications and network systems on Navy ships.

A better understanding of light propagation through salt fog is necessary for the development and successful operation of emerging Navy EO systems such as free space optical links and laser weapons systems. Predicting and assessing the performance of EO systems in these challenging environments depends on how well atmospheric constituents of salt fog are modeled. Currently SSC Pacific is investigating these affects by using data collected during field tests for their models.

Measuring laser responses to various salt fog densities and temperatures using the salt fog chamber at SSC Atlantic's E3 environmental testing facilities will provide good, laboratory validated predictive models.

Using the controlled salt fog chamber will limit outside environmental variables. Variances are expected in the beam profile, image degradation, decreased output power and decreased range, depending on different salt fog densities and temperatures.

This research will provide the first ground truth and is necessary for advancing the accuracy of these models. The conclusions from the collaboration of SSC Pacific's field tests and modeling and the controlled data provided by SSC Atlantic will make huge contributions to improving Navy EO capabilities.



LIDAR PNT
Phillippe Reed, 71000

Many modern Navy and Joint weapons, navigation and C4ISR systems rely heavily on GPS-based position, navigation and timing (PNT) data. Since reliance on GPS makes these systems vulnerable to jamming, interference, electronic attack or spoofing, there is a need for GPS-independent PNT solutions.

An FY15 NISE project showed the feasibility of using radar or lidar reflections from a single or multiple objects in known position and velocity to determine the location of a ship or other observing station.

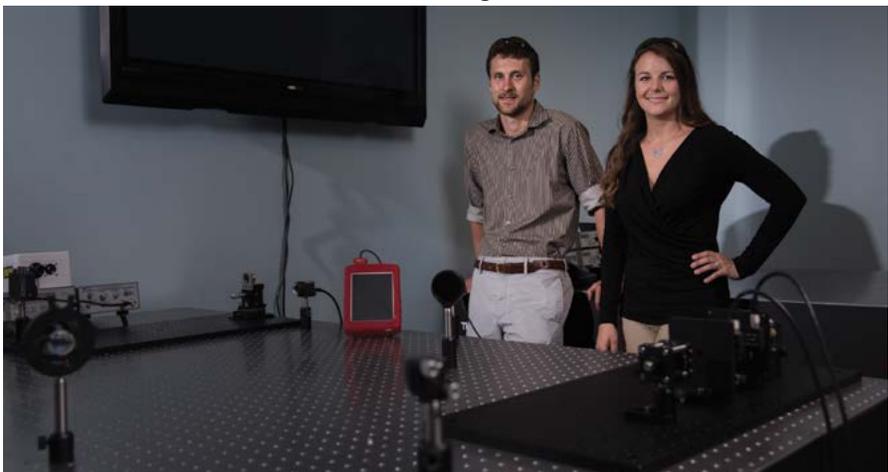
The FY16 project expands the analysis to minimize errors and perform over-the-air experiments. This project will advance the use of radar and lidar technologies toward providing PNT data to the fleet in a GPS-denied environment. It will pave the way for exploring similar shipboard applications of advanced lidar technology for missile defense, relocatable space object tracking, and anti-jam communications.



Range Tracking Using Passive Solar Illumination
Michael McBeth, 71000

This project investigates a new way to measure and track the range of space objects using Passive Solar Illumination. This would exploit variations in the solar radiative output intensity to create a reference signal from direct sunlight that can be cross-correlated with reflected sunlight from an object to determine a delay path time difference and range. A reflected sunlight correlator is being built to measure the distance to the moon using reflected sunlight.

Ground-based optical tracking of space objects is complicated and time consuming. A wide field telescope switches between tracking background stars to tracking a space object. Image processing algorithms are used to determine the space object's orbit. Conventional optical tracking methods cannot determine a space object's range from direct measurements. This approach could allow direct measurement of an object's range and provide a way to identify all objects in the field of view within seconds that are at orbital altitudes of interest by cross-correlating pixels with the direct sunlight reference signal.



Robert Brown and Brooke Baker take a break from testing in the optical lab.



Photos by Joe Bullinger

‘What Would Dr. King Do During These Times?’

As part of the commemoration of Dr. Martin Luther King Jr. Day, SSC Atlantic held a brown bag panel discussion Jan. 12 based on the theme “What Would Dr. Martin Luther King Jr. Do During These Times?”

The discussion featured panelists representing each generation -- Generation Y, Generation X, Baby Boomers and

the Silent Generation -- sharing their perspectives about performing acts of service, creating unity and inclusion, applying principles of nonviolence and working together to find solutions to our nation’s problems.

U.S. Air Force Maj. Kimberly Champagne, a member of the Joint Base Charleston Diversity Council and the lead for the Diversity and Inclusion Working Group at Joint Base Charleston, moderated the panel.





Clean the Bay Day, Norfolk, Virginia

Volunteerism alive & well at SSC Atlantic

**By Diane Owens
SSC Atlantic Public Affairs**

SSC Atlantic employees work diligently during the day to deliver efficient and effective information warfare solutions and support the warfighter, and they don't sit around when the work day ends.

They continue to make the world a better place -- starting in their local communities.

Numerous individuals donate their time after work, at lunch, on leave and on weekends participating in work-related charitable activities such as Lunch Buddies, Day of Caring, Adopt-a-Highway and various science, technology, engineering and math (STEM) children's activities, such as robotics leagues, cyber competitions, summer camps, Math Games, Sea Perch and more.

Many more employees spend an enormous number of hours volunteering for nonwork-related community service projects at

churches, recreation departments, veterans' associations, schools, senior centers and through a variety of national and local organizations.

In early 2016, SSC Atlantic officials conducted a survey of center employees in major U.S. sites asking them to report volunteer work they did on their own time the previous year. The request was initiated because Joint Base Charleston officials planned to apply for a volunteerism award nomination, and they needed employee data from SSC Atlantic and other Charleston base tenants.

After volunteer information was collected in Charleston (from 199 employee respondents), SSC Atlantic leaders decided to capture the same information in Hampton Roads (31 employee respondents), the National Capital Region (11 employee respondents) and New Orleans (13 employee respondents) to gather center-wide data on how much time employees donated and what type of community activities employees supported.

The responses from a total of 254 individuals indicated:

- Charleston employees reported volunteering approximately 28,128 hours during 2015
 - Hampton Roads personnel donated 1,943 hours
 - New Orleans employees volunteered 1,184 hours
 - National Capital Region employees donated 2,049 hours
- Overall, SSC Atlantic employees in major sites (not counting those overseas or in smaller detachments) spent

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Blood drives



Lunch Buddies

security competitions and cyber camps, Girls Day Out, programming classes, DimensionU, career fairs, MathCounts, mentoring for the Math is Cool competition, assisting in schools, refurbishing laptops and teaching repair basics, and working through the Citadel Mentor Association -- accounted for many of the volunteer hours.

Church-related activities consumed many volunteer hours. Teaching Sunday school, leading youth groups and ministries, bookkeeping, serving as a greeter, working in the church nursery, managing Awana youth clubs, singing in the choir, playing the violin in a worship team, performing outreach and church services for orphans and the elderly, translating Bible readings from English to French, directing Vacation Bible School, serving as trailmaster for a Christian group, serving as quiz master for teen Bible quizzing events, serving as bishop of a local church congregation, maintaining church blog, Facebook pages and websites, mentoring, tutoring and Bible studies for high school youth and at-risk youth, running a church Fall Festival, serving a men's hike ministry leadership, working at a church food bank, serving as praise dance teacher, preparing items for church missions, acting as Operation Christmas Child coordinator and participating in church toy drives, assisting with Christian ministry weekend retreats and monthly meetings, performing church yard maintenance and operating video cameras at church and assisting in event production setup, and chaperoning youth group trips were among the activities listed.

SSC Atlantic volunteers also showed they care for those less fortunate and donated many hours to feeding the hungry and the homeless. They logged volunteer time donating food and clothes, working at food banks, participating in the Stand Down for Homelessless, working at a homeless shelter, providing Thanksgiving meals for single parents, preparing fruit bags for seniors and packing and delivering Thanksgiving meals to underprivileged families, nursing home residents and homeless veterans.



Stand Down Against Homelessness

33,304 hours volunteering during 2015.

STEM activities -- such as robotics and LEGO league, cyberse-

curity competitions and cyber camps, Girls Day Out, programming classes, DimensionU, career fairs, MathCounts, mentoring for the Math is Cool competition, assisting in schools, refurbishing laptops and teaching repair basics, and working through the Citadel Mentor Association -- accounted for many of the volunteer hours.

Church-related activities consumed many volunteer hours. Teaching Sunday school, leading youth groups and ministries, bookkeeping, serving as a greeter, working in the church nursery, managing Awana youth clubs, singing in the choir, playing the violin in a worship team, performing outreach and church services for orphans and the elderly, translating Bible readings from English to French, directing Vacation Bible School, serving as trailmaster for a Christian group, serving as quiz master for teen Bible quizzing events, serving as bishop of a local church congregation, maintaining church blog, Facebook pages and websites, mentoring, tutoring and Bible studies for high school youth and at-risk youth, running a church Fall Festival, serving a men's hike ministry leadership, working at a church food bank, serving as praise dance teacher, preparing items for church missions, acting as Operation Christmas Child coordinator and participating in church toy drives, assisting with Christian ministry weekend retreats and monthly meetings, performing church yard maintenance and operating video cameras at church and assisting in event production setup, and chaperoning youth group trips were among the activities listed.

SSC Atlantic volunteers also showed they care for those less fortunate and donated many hours to feeding the hungry and the homeless. They logged volunteer time donating food and clothes, working at food banks, participating in the Stand Down for Homelessless, working at a homeless shelter, providing Thanksgiving meals for single parents, preparing fruit bags for seniors and packing and delivering Thanksgiving meals to underprivileged families, nursing home residents and homeless veterans.

Imagine how many men, women and children benefitted from these selfless acts performed during more than 33,300 volunteer hours given by SSC Atlantic personnel in 2015!



Day of Caring



Volunteering at schools



Contractors from CACI were a part of the MFOM effort.

Photos by Jerry Sekerak

SSC Atlantic deploys new release

MFOM family of systems

By Jerry Sekerak, SSC Atlantic Public Affairs

SSC Atlantic’s Maintenance Figure of Merit (MFOM) Integrated Product Team (IPT), based in Hampton Roads, deployed the latest release of MFOM Family of Systems (FOS) in the New Orleans data center Dec. 19. The release postures the system to be eligible to achieve a full Authorization To Operate (ATO) from the Navy for the first time.

“MFOM is comprised of 20 applications that work together to manage and support ship maintenance and readiness assessment,” said Stan Shelhorse, MFOM IPT Lead.

SPAWAR assumed full responsibility for MFOM in October 2011 and the SSC Atlantic team began fixing Information Assurance (IA) vulnerabilities, as time allowed within planned releases, but IA was often overshadowed by higher fleet priorities and the majority of the work remained incomplete. However, due to the increased attention to cybersecurity, in November 2014, the MFOM Program Office elevated IA to the top of the MFOM priority list and directed a specific effort focused on eradicating all known vulnerabilities.

“Early automated code scans of the MFOM baseline revealed a staggering amount of Category I (9,000) and Category II (13,000) findings, which led to the categoriza-

tion of MFOM as a high-risk system and put the system’s accreditation at risk,” said Shelhorse.

That monumental effort became the MFOM System 2.00.20 release and included all applications within the system. The end goal became a software release for the sole purpose of ensuring security of the system. During the process, an estimated 30,000 vulnerability findings were addressed, analyzed and corrected, and four rounds of System Integration Testing were executed to ensure smooth functionality after the security updates.

As a result of the dedicated efforts of the MFOM team, the MFOM System 2.00.20 release has vastly improved the security posture of MFOM, making the system significantly less vulnerable to the myriad of threats it faces.

“This was certainly a team effort,” said Shelhorse. “The MFOM team consists of 15 civilians, NEDC staff, and more than 100 contractors and they all had a hand in this release. We’re happy to be part of the solution in making the MFOM system more secure and effective for the warfighter. We encountered and overcame many challenges along the way but the team persevered and facilitated a successful deployment. We couldn’t ask for a better ending to 2015!”



Members of the MFOM team in Hampton Roads.



Team members in New Orleans.



CTO CORNER

DR. AL EMONDI

SSC ATLANTIC CHIEF TECHNOLOGY OFFICER

Publications & patents: Let's tell our story

We are now into the sixth year of our Naval Innovation Science and Engineering (NISE – 219) program, and many of our funded projects are producing new capabilities and solutions for our customers. Internally developed technologies are advancing the state of the art and have gained acceptance with our sponsors. Our project seedlings are now receiving external funds from Navy and Marine Corps Program Executive Offices, the National Security Agency, the Defense Advanced Research Projects Agency, the Office of Naval Research and the Naval Deputy Assistance Secretary for Research, Development, Test and Evaluation. These successes have also brought greater awareness of SSC Atlantic's research ability.

As we continue to grow our innovative research base within the command, the high impact, game-changing capabilities our naval forces need are often built through teams that span multiple disciplines and organizations. As organizations increasingly look to SSC Atlantic as a potential research partner, it becomes imperative to make sure our research expertise is communicated, understood and recognized.

In the research world, this means our principal investigators must put adequate time toward publishing in peer-reviewed venues. For example in the model for academia, university professors often document their work externally in professional journals and present at professional technical conferences. This is to not only ensure that they contribute to the advancement of science, but also to ensure their work is appropriately affiliated to the research team and with their university.

This model also applies to SSC Atlantic. As we continue to develop new technologies and capabilities, our dedication to publishing and protecting our ideas must also mature. By

taking the time to document and publish our research work we put a time stamp on our discoveries. This emphasis on publication is also important as we continue to build new partnerships beyond the research personnel in the command. Publishing is incredibly important, as it provides a pointer back to the organization and our research capabilities. The more we publish, the more we facilitate teaming and awareness of SSC Atlantic's technical offerings.

It is also important to protect our ideas through the patent process where at all possible. All of our researchers are encouraged to patent their novel ideas and protect their intellectual property. A number of SSC Atlantic employees have had patent disclosures leading to successful patent issuances. If you feel your work may have patent potential you should actively seek advice from Michael Merriken, who heads up the Office of Research and Technology Applications within the S&T Competency. You can find Merriken in the NMCI Global Address List, and he can be reached at 843-218-3495.

To promote publication and patent submission, the command offers incentive awards that are specifically targeted to encourage employees to publish and patent their work. For publishing, our award structure is based on the level of peer review that your publication submission undergoes before it is published.

The patent award structure is based on your commitment to see your patentable idea through the patenting process – from disclosure to our legal team to award from the Patent and Trademark Office.

Our focus on publication is integral to our over all external S&T communications strategy for the command. Our research has accomplished so much here at SSC Atlantic, let's tell our story to our peers.



Another successful ST

SSC Atlantic volunteers continued their long-standing support of robotics programs in the 2015-2016 school year in elementary, middle and high schools in Charleston, Hampton Roads and New Orleans. They were mentors, judges and cheerleaders for FIRST (For Inspiration and Recognition of Science and Technology) Lego Leagues (FLL), FIRST Robotics competition (FRC), FIRST Tech Challenge (FTC) and SeaPerch teams.

SSC Atlantic mentors assigned to a specific school visit that school regularly during the season, committing five to 12 hours a week for six weeks to six months. Volunteers also help during competitions with judging, registration and as runners.

Robotics outreach programs help students hone their skills in sci-





STEM outreach season

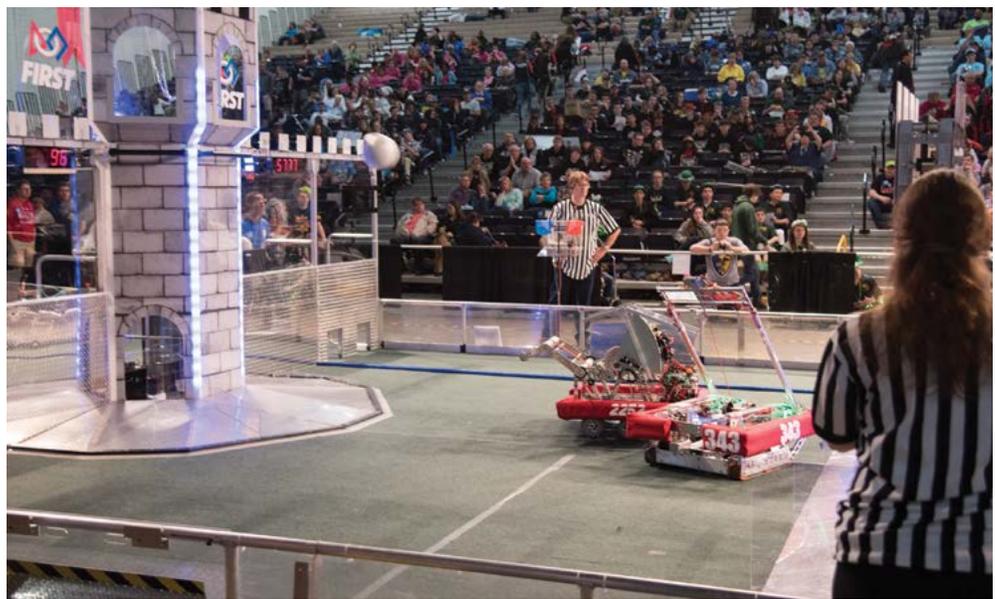
ence, technology, engineering and math (STEM); management and organization, creative thinking and autonomous robots that complete courses and build a team project, and are judged on professionalism. In FRC, teams raise funds, design a team “brand,” hone teamwork skills, and build and program robots to perform prescribed tasks against a field of competitors. In FTC, students design, build and program robots to compete head-to-head in an alliance format against other teams.

SeaPerch is an underwater robotics program that equips teachers and students with the resources they need to build an underwater Remotely Operated Vehicle (ROV). Students build the ROV fol-

Continued on next page



Photos by Joe Bullinger



Continued from previous page

allowing a curriculum that teaches basic engineering and science concepts with a marine engineering theme. Students enter their ROVs in the SeaPerch Challenge, a district-wide, one-day design competition. Winners of local or regional challenges compete in the National SeaPerch Challenge, held each spring.



Photos by Joe Bullinger

DimensionU, Math Games events at SSC Atlantic

SSC Atlantic hosted the Fifth Annual DimensionU Competition March 18 in the Conference Center on the Charleston campus.

Students from Alston Middle, College Park Middle, Dubose Middle, Gregg Middle, Oakbrook Middle and River Oaks Middle schools competed.

The winning teams from that competition -- Alston Middle and Dubose middle schools, and two teams from Gregg Middle -- competed in the DoD Math Games virtual tournament in May, held at SSC Atlantic for the third year in a row. They competed with teams from all over the country, representing the Army, Air Force, Navy and Marines.

Other DoD labs participating were The Griffiss Institute and Air Force Research Laboratory in Rome, New York, working with students from Rome City Public Schools; the U.S. Army Construction Engineering Research Laboratory and students from Urbana School District 116; and the U.S. Army Armament Research Development and Engineering Center at Picatinny Arsenal in New Jersey.

SSC Atlantic hosts these competitions to encourage students to learn and practice math. The interactive multi-player video games focuses on core skills in mathematics and literacy. Students must solve problems to move to the next phase.



Photos by Joe Bullinger

STEM Festival is a celebration of science

SSC Atlantic participated in the third annual Charleston STEM Festival, a celebration of science, technology, engineering and math in the Lowcountry, in February. The event provided opportunities for engagement and exchange between children, teens, families and other local STEM professionals.

Held at Brittlebank Park, the festival featured more than 50 exhibitors with hands-on activities, live performances, interactive demonstrations and family-oriented STEM entertainment.

This year, attendees were treated to presentations on

everything from racing robots, solar cooking, coding, music and rockets to slime.

SSC Atlantic outreach volunteers manned a booth teaching children about deciphering and decoding, and held demonstrations illustrating electrical continuity.

The festival also featured exhibits by Boeing, Blackbaud, Google, the Medical University of South Carolina, Clemson University Restoration Institute, Nucor, Patriots Point Flight Academy, Bosch, SCE&G, The Citadel, S.C. Department of Natural Resources, Water Missions, the Center for Birds of Prey and others.





Pinewood Prep kids combine fun & learning

During a visit to SSC Atlantic's Unmanned Systems Research Range, students from Pinewood Preparatory School got hands-on experience controlling unmanned vehicles remotely. They learned how software is developed to control unmanned aerial and underwater vehicles as they perform reconnaissance and surveillance missions. They also learned how an Atlas robot is programmed to assist humans during natural and man-made disasters.



Photos by Joe Bullinger

My Brother's Keeper

Young men see opportunities at all SSC Atlantic sites

SSC Atlantic's Charleston, Hampton Roads and New Orleans sites hosted a "Day at the Lab" in March as part of the nationwide "My Brother's Keeper" initiative.

Through its STEM Educational Outreach Program, SSC Atlantic organized full days of activities at the Charleston site March 1, in New Orleans March 2 and at Hampton Roads sites March 4.

In Charleston, Rear Adm. Mathias W. Winter, Chief of Naval Research and Director, Innovation Technology Requirements and Test & Evaluation (N84), chatted with the visiting young men about the innovative research and development underway at Navy labs such as SSC Atlantic, and career STEM opportunities available.

Charleston, South Carolina Mayor John Tecklenburg also spoke to more than 20 visiting boys, most of them from sixth and seventh grades.

After being welcomed by SSC Atlantic Commanding Officer Capt. Scott Heller, the young men were treated to various activities that demonstrate how SSC Atlantic rapidly delivers cyber warfighting capabilities from seabed to space. "They're going into the laboratories and seeing what it's like to be an engineer," Heller said, adding that the goal is show them projects – ranging from 3D printing to brain wave research – that will leave the young men wanting to pursue STEM learning, entrepreneurship and innovation. They learned about the innovative research and development at SSC Atlantic sites that ensures warfighters have the information warfare solutions they need. Students interested in pursuing STEM study and careers were linked with a mentor or mentor team.

Launched in 2014, "My Brother's Keeper" (MBK) is a challenge to cities, towns, counties and tribes across the country to become MBK communities that implement a coherent cradle-to-college-and-career strategy for improving the life outcomes of young men, regardless of who they are, where they come from or the circumstances into which they are born. Nearly 200 mayors, tribal leaders, and county executives across 43 states and the District of Columbia – including South Carolina, Virginia and Louisiana – have accepted the MBK Community Challenge.

The goals of the challenge are to ensure all children enter school cognitively, physically, socially and emotionally ready; ensure all children read at grade level by third grade; ensure all youth graduate from high school; ensure all youth complete post-secondary education or training; ensure all youth out of school are employed; and ensure all youth remain safe from violent crime.



Rear Adm. Mathias W. Winter, Chief of Naval Research and Director, Innovation Technology Requirements and Test & Evaluation (N84), right, chats with, from left, Dr. Al Emondi, 7.0; SSC Atlantic Commanding Officer Capt. Scott Heller and STEM Outreach Program Manager Shanda Johnson.



Photos by Joe Bullinger

During a center tour the young men learned how math and science are used to provide information warfare solutions to the warfighter.

Miller Sword presented to Citadel's Scott

Graduating Citadel Cadet (now Ens.) Taylor Scott was presented the Robert G. Miller Memorial Sword Award during an awards convocation held May 5.

The award honors Robert G. Miller, an Army veteran who served as commander of the Palisades Power Squadron in New Jersey and taught public boating classes until his death in 1996.

SSC Atlantic's Bob Miller of 7.2 and his siblings established the memorial award, presented annually to The Citadel Navy Reserve Officer Training Corps (NROTC) sea services candidate excelling in Navy battalion leadership, in the top 25 percent of the class, and embodying Robert Miller's leadership skills, dedication to public service and love of the sea.



Photo by Dr. Keith Plemmons

Presenting the Miller Sword are, from left, Maddie Miller, Sherri Miller, Bob Miller, Maj. Gen. Les Eisner, USA (Ret.), acting director for SC Cyber Consortium and former deputy Adjutant General of S.C., Taylor Scott and Dave Coldren of SSC Atlantic's 5.6, also a colonel in the National Guard.

Cyber defense competition

Continued from page 3

80 volunteers from SSC Atlantic, corporate partners, South Carolina National Guard and Navy Reserve.

Capt. Scott Heller, commanding officer of SSC Atlantic, also noted that PCDC "is a great opportunity to build on the vast cyber and military assets here in the Lowcountry and to attract the next generation of cyber professionals."

Eight high school teams that had prequalified through Cyber Patriot, along with eight college teams, battled Red Team hackers trying to penetrate their medical supply distribution business networks. All the while they had to maintain network availability and configure and protect their network against threats. Winning team members each received a \$500 scholarship.

High school students from around South Carolina competed Saturday, with returning Palmetto Scholars Academy taking first place. Porter-Gaud School earned second, and third went to Stratford High School. All eight competing schools received a Raspberry Pi. Max Harley of Porter-Gaud was voted Most Valuable Player (MVP), receiving a \$1,000 award. Other high schools competing were Ashley Ridge, Blythewood, Home School Network, South Aiken and Wando.

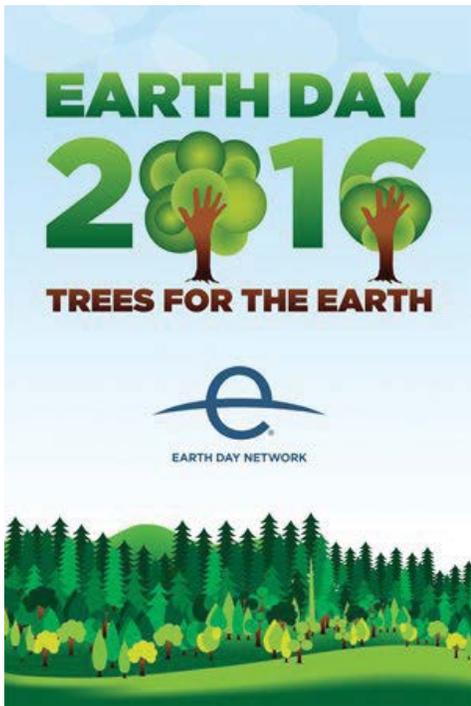
One theme resonating across the teams was the appreciation of the challenge. Anderson Reese from Home School Network said, "It was exhilarating to have a live environment; it is different from anything else we've experienced."

Clemson University took first place, University of South

Carolina second and The Citadel third in Sunday's collegiate competition. Clemson's MacKenzie Binns earned MVP, receiving \$1,000. Charleston Southern University, College of Charleston, ECPI University, South Carolina State University and Trident Technical College also competed in the event. "We loved the experience and environment," said Meagin Arrocha of Charleston Southern University. "We were always learning. We want to give back and help in the competition next year," she added.

A "Pro Day" training challenge for government and industry professional teams was held Monday. Government teams were from Cyber National Mission Force, Navy Cyber Defense Operations Command, North Carolina National Guard and the South Carolina National Guard. Industry teams were from CSRA Inc., Scientific Research Corporation, SCANA Energy, and there was a joint team from Adapt Forward LLC, CACI International. In keeping with the STEM goals of PCDC, two collegiate students were embedded within each pro team. CSRA invited previous high school MVP Amanda Prevatt, now a Stall High graduate, to join their team for the second year in a row. Pro Day is considered an opportunity for workforce development, training, recruiting and networking.

A Cyber Forensics Challenge was held Saturday. Participants earned points solving as many forensics scenarios as possible. Hourly leaders received prizes and overall winner, Lance Alt, received a Samsung Galaxy Tablet. The South Carolina National Guard presented several cybersecurity lectures, including Cyber Legal Policies, Welcome to Cyber, and open-source cyber tools.



Earth Day program highlights water, trees

An Earth Day program in the Bldg. 3147 atrium April 22 featured a discussion by then-Acting Executive Director Dave Monahan, a presentation on how drinking water comes to our homes, winners of the Earth Day quiz, free sugar maple saplings and even free cupcakes. The event was also broadcast to other SSC Atlantic sites.

Monahan, a Montana native, gave the history of Berkeley Pit, a former open pit copper mine located in Butte, Montana. Once known as the “richest hill on earth” due to monumental mining wealth, it is now one of America’s biggest Superfund sites and is recovering from the poisons the copper, silver, gold and zinc mining operations left behind.

Jenny Craft of Charleston Water System (CWS), which is the service provider for SSC Atlantic’s drinking water in Charleston, discussed where their water comes from and how it is treated before it is delivered to customers.

Water is a resource that we use and enjoy every day at home and at work. An average American family uses 300 gallons of water from the time they get up until they end the day. Craft’s presentation helped underscore the importance of having accessible water around the world.

Many people may not know the

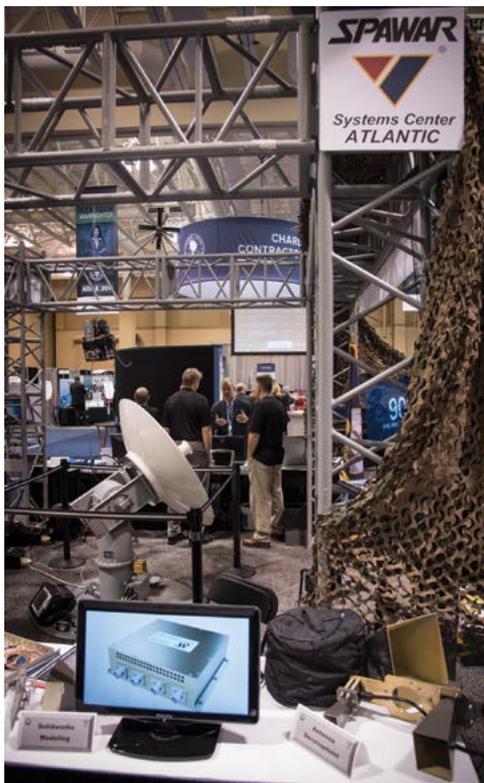
engineering required to obtain and manage source water, treat it so it is safe for human consumption and provide and maintain water distribution networks to deliver the water to customers. Engineers and chemists working at public water utilities all over the country provide communities with safe drinking water.

As Ben Franklin noted, “When the well is dry, we learn the worth of water.”



Photos by Joe Bullinger

At top, Bob Byrnes checks out the free sugar maple saplings being given out by Jeff Meyers of 835 at the Earth Day observance in the atrium of Bldg. 3147 April 22. Above, Jenny Craft of Charleston Water System gives a brief about where water comes from and the process it undergoes before it comes to consumers.



Photos by Joe Bullinger

At top, SSC Atlantic Commanding Officer Capt. Scott Heller welcomes summit attendees. Above, SSC Atlantic's Squirrelworks exhibit attracted visitors.

C5ISR Summit builds on government/industry partnerships, collaboration

SSC Atlantic, Navy and Department of Defense leaders, active duty and retired flag officers, industry partners and community leaders were among more than 1,200 attendees of the ninth annual C5ISR Government and Industry Partnership Summit held Dec. 1 through 4. The Charleston Defense Contractors Association (CDCA) summit's theme was NextGen Warfighter: Building a Knowledge and Technology Network for the Warfighter of the Future.

More than 150 SSC Atlantic employees participated or attended the event, hosting and moderating technical tracks and panels aligned to SSC Atlantic's five portfolios, giving tech talks at the SSC Atlantic booth, making briefing theater presentations and participating in a "Meet the Senior Leadership" series which provided direct access to SSC Atlantic Portfolio Managers, Deputy Portfolio Managers, Sub Portfolio and IPT Leads.

SSC Atlantic Commanding Officer Capt. Scott Heller welcomed the crowd on the first day of the summit. "We work hard -- engineers, logisticians, contracts specialist, financial specialists, installation leaders, and many others -- to ensure we deliver our assigned and essential naval capabilities," the captain said, "including capabilities from seabed to outer space and everywhere in between that forestall conflict, and when necessary, dominate conflict." Heller added that once delivered, every product must be provably working and secure in the cyber domain, and every operator must be able to master the equipment. "Our products are



not maintained and operated by engineers in a lab; our products are designed to be operated by Sailors and Marines in harm's way out in a very brutal environment," he said. "We provide the technical leadership that ensures our naval forces remain the dominate force for good anywhere we choose, anytime we choose," Heller said.

There was record attendance for this year's C5ISR Summit, which provides informational and networking events to promote and enrich the partnership between government and industry. The event serves as a forum to share advanced technical data to support the warfighter.

Guest speakers included Vice Adm. Ted Branch, OPNAV N2/N6; Rear Adm. Christian Becker, PEO C4I (and successor to Rear Adm. David Lewis as COMSPAWARSYSCOM); Victor Gavin (SES), PEO EIS Business Portfolio Manager; SSC Atlantic Executive Director Chris Miller and former SSC Atlantic Commanding Officers Bruce Urbon and John Pope. SSC Atlantic Business Portfolio Managers Kevin Charlow, Charlie Adams, Bruce Carter, Jackie Goff and Ryan Gunst hosted technical panels and tracks.

The 38th Small Business Industry Outreach Initiative (SBIOI), held the last day of the summit, featured briefs by Heller and SSC Atlantic contracting and small business experts. An Office of Small Business Programs panel was held with representatives from Navy, Army, Air Force and Marines. The SBIOI also included a PEO EIS panel and discussion on the ASN RDA initiative of Tapping into Small Business. SSC Atlantic's 2.0 provided a Contract strategy update on initiatives, task order forecasting and other contract-related opportunities.



Pictured, clockwise from top, Norris Mitchell of 50E and Eric Herrman of 4224, Waleed Barnawi of 5613, Rear Adm. Christian Becker and an SBIOI panel with Robin Rourke, OSBP Deputy Director.

The Navy League wants you!



Volunteer opportunities abound for SSC Atlantic employees

Navy League of the United States Charleston Council President Pat Keaveny visited SSC Atlantic in January to inform employees of the Navy League's purpose and to recruit members and volunteers.

"Ninety percent of world trade moves on the sea, 70 percent of the earth's surface is water, and 80 percent of the world's population is located near water," Keaveny said, adding that as an island nation the U.S. is dependent on the sea services.

The Navy League has a long history of providing support and partnership to the Coast Guard, the Marine Corps, the Navy and the Merchant Marine in Charleston. Officially chartered in 1947, the Charleston Council has conducted programs aimed at garnering support and understanding for American's maritime service and for the people who serve them.

Besides presenting scholarships to graduates from The Citadel and College of Charleston, the local council educates and enlightens elected officials about issues such as port access and harbor deepening, fosters the education and development of youth through programs such as Sea Cadets, NJROTC and Young Marines, and enhances the morale of active duty personnel, reservists, Merchant Mariners and their families.

The Navy League has helped commission Navy ships with Lowcountry ties now in service, such as **USS James E. Williams** and **USS Truxton**, the



Photo by Joe Bullinger

Navy League of the United States Charleston Council President Pat Keaveny gives a brief about the league's purpose and goals to SSC Atlantic employees in the Command Briefing Theater Jan. 19.

soon-to-be-commissioned Arleigh Burke-class destroyer Ralph H. Johnson, and Charleston, a Littoral Combat Ship now under construction. The Navy League has also adopted Coast Guard National Security cutter Hamilton.

The local council also partnered with SSC Atlantic to host the annual James T. Lynch award, and is active in science, technology, engineering (STEM) outreach events such as Sea Perch and the Palmetto Cyber Defense Competition (PCDC).

"Our focus is on creating and keeping a maritime perspective," Keaveny said, "and we are hoping that SSC Atlantic employees who share our interests will join us."

The Navy League is looking for SSC Atlantic volunteers who can help prepare kids for PCDC, work on the Charleston Council's website and Facebook pages and in other endeavors.

They are also looking for someone to help prepare local Navy Sea Cadets for The Great Portage Race at Lake Murray's Dreher Island Park. During this competition, cadets traverse six

arrival and departure checkpoints using a map, and portage the canoe to take knowledge tests at four of the checkpoints. The tests require them to identify cloud formations, Navy specialty ratings, flags and pennants, and common nautical knots.

Volunteers are needed for the Military Spouse Employment and Partnership Portal. Someone who may be interested in bringing Operation CHAMPS (Child Heroes Attached to Military Personal) alive in the Tricounty area is also needed.

Monthly luncheons for the Charleston Council are held the first Tuesday of every month at Embassy Suites.

"We are hoping you will help our local Navy League Council enhance our leadership and educational role in the community and grow our organization, building for the next generation," Keaveny said.

Those interested can call Keaveny at (843) 693-0794 or visit the Navy League website at www.NavyLeagueCharleston.org.



Photos by Joe Bullinger

Sullivan praises SSC Atlantic teams, initiatives

SPAWARSYSCOM Executive Director Pat Sullivan talks to SSC Atlantic employees assembled in the atrium of the main engineering center and at all sites via VTC during a visit to Charleston March 16. Sullivan thanked SSC Atlantic for very rapidly improving their cyber readiness, as evidenced by recent cyber inspection success. He also noted that the delivery of contracting actions has been improved and accelerated in order to better meet the IPTs' needs, and the team has also made improvements in preparing contracts that will survive protests. Sullivan also praised the SSC Atlantic team for taking a hard look at reducing administrative steps and approvals needed to perform work. He added that going forward, headquarters is adopting some of SSC Atlantic's business intelligence processes and will use them to shape better decisions in the future.

Hilarides tours SSC Atlantic

Vice Adm. William Hilarides, commander of the Naval Sea Systems Command, visited SSC Atlantic March 2. During a tour of SSC Atlantic's Tactical Integration Facility, Hilarides, at right, is briefed on how SSC Atlantic employees engineer and test communications centers for delivery and installation on new construction ships. While at the center the admiral also received a command overview from SSC Atlantic Commanding Officer Capt. Scott Heller, and toured the Common Submarine Radio Room (CSRR) and Multipurpose Reconfigurable Training System (MRTS).





Educators briefed on importance of EMI testing
Thomas Sessions, 5944, briefs visiting teachers on electromagnetic interference (EMI) testing in SSC Atlantic's anechoic chamber. The teachers from various Charleston County schools visited SSC Atlantic for tours and briefs March 9 as part of the center's STEM outreach initiative.



Photos by Joe Bullinger

Wando High School teachers go to the top...

... of SSC Atlantic's Air Traffic Control (ATC) Facility as they are briefed in the control tower on the center's full spectrum of ATC communications, system automation, surveillance, navigation and C2 systems. The Wando Warrior teachers visited SSC Atlantic Feb. 25 to learn more about the mission of the center and STEM career opportunities that may be available to Wando graduates who aspire to be SPAWARriors.



Photos by Joe Bullinger

Joint Base commander sees SSC Atlantic capabilities

Air Force Col. Robert Lyman, center, commander of Joint Base Charleston and the 628th Air Base Wing, listens as Pete Ward, 01B50 Sub Portfolio Leader, discusses vehicle integration initiatives during Lyman's visit March 10. While at SSC Atlantic the colonel also saw capabilities delivered in the data center, ISR/IO lab, DCGS-N, platform and integration labs, the Digital Integration Facility and the satcomms complex.



Rodriguez emphasizes veteran support, retention

James Rodriguez, Deputy Assistant Secretary of Defense, Warrior Care Policy, speaks during a program on supporting and retaining disabled veterans held Feb. 9 in Charleston. Tim Baker, Director, Resource and Acquisition Management Office/Military Secretariat, Joint Staff J7, also spoke. The program was sponsored by the SSC Atlantic Veteran Workforce Open Community.



SPAWAR Chief Engineer Ailes on board

SPAWARSYSCOM Chief Engineer Rear Adm. John Ailes makes a point during a presentation to an all hands gathering of SSC Atlantic's 50 team during his visit in January. While in Charleston Ailes and Greg Shaffer, head of the Intelligence, Surveillance, Reconnaissance and Information Operations (ISR/IO) Department at SSC Pacific, received a command brief and toured other areas of the center.

Manning students see STEM possibilities

Students from Manning Junior High School watch as D.J. Tyree of 5422 shows how to program the Atlas robot to perform tasks at SSC Atlantic's Unmanned Systems Research Range (SAUSR). The visiting Manning Monarchs also toured various labs during their visit in January and learned how science and math are used to develop information warfare solutions that save warfighter lives.



Photos by Joe Bullinger



Charleston Southern students view cutting edge technology at SSC Atlantic

Students from Charleston Southern University were hosted at SSC Atlantic in January. While at the center they toured various labs and saw several projects illustrating how SSC Atlantic provides information warfare solutions to warfighters. In the Multidisciplinary Research Center, pictured above, Matthew Largent discussed several C4ISR research and development projects underway. Other tours and discussions highlighted career opportunities and salaries available to the college students in science, technology, engineering and math.





What are YOU lookin' at?

Story and photo by
Sharon Marince

The Southern black fox squirrel pictured at left is one of many sometimes spotted on the Charleston campus of SSC Atlantic. The only fox squirrel native to South Carolina, they prefer pine-dominated habitats, using tree cavities and leaf nests as both refuge and for rearing their young, especially during winter and spring. In southern Florida, you can find them in cypress swamps, tropical hardwood forests, live oak forests and mangrove forests.

The preferred habitat of fox squirrels is the sand hills and piedmont regions of the Carolinas and Georgia, in mixed stands of longleaf, loblolly and shortleaf pine, hardwoods and bottomlands. Throughout the black fox squirrel's range, parks, golf courses and residential areas may support substantial fox squirrel populations.

Fox squirrels produce two litters per year, with breeding in late winter/early spring and, to a lesser extent, in summer. Reproductive success is highly variable and dependent on factors such as availability and timing of food sources, availability of cavities and weather.

The diet of the fox squirrel is diverse and varies seasonally and by region. Nuts, seeds, buds and flowers of pines, oaks, hickories, beech, walnut and other available hardwood species like dogwood and maple are major components of the squirrel's diet. Grapes, persimmons, cherries and various fruits, fungi and insects are also eaten.

Hunting fox squirrels is prohibited on many wildlife management areas in South Carolina.

Check out *The Chronicle* online; send in your story

What's happening in your world that you'd like to see in *The Chronicle*? The power of your experiences is even greater when you take the time to share them! We look forward to reading about the great work you are doing as part of the SSC Atlantic team.

If you have a story or story idea that you'd like to see published here, send it to susan.piedfort@navy.mil or call the editor anytime at (843) 218-4973, DSN 588-4973.

The Chronicle is accessible on the Internet on SPAWAR's official U.S. Navy website at <http://www>.

public.navy.mil/spawar/Atlantic/Press/Pages/default.aspx. Check out *The Chronicle* on the Intranet at <https://blog.spawar.navy.mil/chronicle/>.

Check out SSC Atlantic news on Facebook, Twitter, Flickr and YouTube. If you wish to become a SPAWAR

Facebook fan, visit <http://www.facebook.com/spaceandnavalwarfaresystemscommand>.

See us on Twitter <http://twitter.com/SPAWARHQ>, YouTube www.youtube.com/teamspawar and Flickr www.flickr.com/teamspawar.



THE CHRONICLE PHOTO CONTEST

Thank you to all who submitted!

And the winner is...



Piemonte, Italy
October 2015

Mark Held
Code 63

Hit us with *your* best shot

We are now soliciting submissions from
SSC Atlantic employees for next issue's contest.

Send your best shot to *susan.piedfort@navy.mil* or
joseph.bullinger@navy.mil.



Sweetgrass basket historian Karen Smalls Horlback gives a basket making demonstration Feb. 13 during a Black History Month Brown Bag educational session.