

NGA PATHFINDER

Magazine of the National Geospatial-Intelligence Agency

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IMMERSION

'Next phase of intel' touted
at GEOINT Symposium

ALSO FROM GEOINT

Map of the World
Managing chaos
Award winners

'A GROWING DANGER'

NGA analysts critical in fight
against WMD proliferation



The model of success

DIRECTOR CLAPPER, IN HIS SPEECH AT THE 2013 GEOINT Symposium in Tampa recently, called the past 18 months one of the “toughest stretches” he has seen in his career. Times are indeed tough. But, as volatile and uncertain as they have been, you remained solid. You helped NGA rise to every occasion by providing our nation’s leaders, decision makers, and front line responders with the information required to make sound decisions and save lives. Director Clapper called GEOINT the most transparent of all intelligence and praised NGA as the model of how to support customers.

You deserve his praise and recognition of your efforts, and I am proud to be your director. We are an agency with a long history of success and, today, our ranks are still full of professionals like Melissa Martz, Robert Arbetter and Brian Goltry, who were recognized individually for their efforts in the GEOINT arena. Their actions put them in the company of legends like Bobbi Lenczowski, who at the symposium became the first woman to receive the USGIF lifetime achievement award for a career of pushing boundaries and breaking glass ceilings. You can read more about each of these amazing men and women in this issue of Pathfinder magazine.

Also at the GEOINT Symposium, we highlighted the future of NGA and outlined many of the initiatives driving us toward a more dynamic age of GEOINT – one where analysts live in the data, fully immersed and able to anticipate customer needs and rapidly respond to them. An example of successful immersion is evident in the story of Rivanna Station. Our analysts there were critical in identifying the threat of weapons of mass destruction posed by Syria and arming decision makers with the information necessary to mitigate that threat.

This issue highlights our newly launched Web presence on three networks and how that consistency allows us to present our information, products and services in a way never before possible. You can also discover how our partners in the National System for Geospatial Intelligence are transforming how we create and deliver new analytic value for decision makers with products like the Protected Internet Exchange, or PiX.



As exciting as our successes in technology and intelligence reform are, I am equally proud of our role in positively changing people’s lives here at NGA. Through our participation in the Department of Defense Wounded Warrior Program, we are giving hope where none existed. In the story of our intern program, you will see how NGA helped retired Marine Corps Sgt. Rafael Saldana transition back into a “normal” world. In another story, you will see how our STEM symposium and other outreach programs inspire young minds and help us grow a potential cadre of future analysts who can help ensure NGA’s future remains bright and able to answer our nation’s call.

Through all of this, we continue to honor those who paved the way for us. We added four new members to the NGA Hall of Fame, celebrated the contributions of our former leaders, and dedicated one of our conference rooms in St. Louis to a member of the Greatest Generation.

This issue of Pathfinder magazine is chock full of success stories, including an interview with our new Military Deputy, Army Brig. Gen. Mark Quantock. Yet, they are but a sliver of the amazing things regularly accomplished at NGA. I am proud of you and proud of your accomplishments. I hope you feel the same pride when you read this issue of Pathfinder.

Letitia A. Long
Letitia A. Long
Director

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NGA Salute: SGT. RAFAEL SALDANA, USMC

'WOUNDED WARRIOR' GAINS NEW SKILLS, HOPE FOR FUTURE AS NGA INTERN

By Rachael Groseclose, Analysis Directorate



MARINE CORPS SGT. RAFAEL SALDANA WAS medically retired Jan. 30 after six years and a deployment to Afghanistan that resulted in a life-altering head injury.

His road to recovery included a six-month internship at the National Geospatial-Intelligence Agency that provided career-broadening opportunities and a renewed sense of hope for the future, he said.

Despite the challenges, Saldana is grateful for the journey – and he would do it all again, he said.

“Before I came to NGA, I thought I was going to have a huge challenge because of my injuries, but that hasn’t been the case,” said Saldana. “I gained a new career and skill set, but I also gained a sense of hope for the future. This proved I could still serve my country and do more than I thought I could.”

After sustaining a head, brain and compressed spinal injury during combat in 2010 as a machine gunner, Saldana sought assistance through the Intelligence Community Wounded Warrior Program – a Department of Defense Operation Warfighter initiative that places wounded, ill and injured service members in supportive work settings during recuperation.

His recovery didn’t take place immediately, he said.

“I didn’t want my injuries to hinder me, so I didn’t seek help right away,” said Saldana. “But my command recommended I get help and advised me to go to the Wounded Warrior Program for transitioning.”

He took his command’s advice. After attending an IC Wounded Warrior Internship Fair at NGA’s Springfield, Va., campus in August 2013, he was selected for an internship with the agency’s Analysis directorate.

“I had an idea of what I wanted to do,” he said. “I wanted to stay as close to combat as I could. I wanted to keep serving.”

He was aware of the challenges he might encounter because of his injuries and his lack of an imagery background, he said. To bolster his knowledge, he took a basic imagery course with Larry Orndoff, whom Saldana connected with as a mentor.

“My mentor has been so patient,” said Saldana. “He’s so knowledgeable and knows how to approach things so people have a basic understanding.”

The support extended to his entire team, said Saldana.

“My branch has the most friendly, knowledgeable and professional individuals I have ever had the pleasure to work for,” said Saldana. “They have a strict sense of responsibility and take a lot of pride in their jobs.”

The Wounded Warrior Internship Program matches candidates with assignments according to their interests and skills. It is designed to create productive assignments that are beneficial to the warrior and employer.

Saldana’s combat experience helped inform ways to better support customers in the field and at home, said Orndoff.

Along with new job responsibilities, wounded warrior interns must contend with ongoing medical issues. But NGA made sure his medical care was his top priority, said Saldana.

“NGA was very flexible and encouraged me to take care of my medical issues,” said Saldana.

Saldana also draws strength from his family, he said. His wife and kids have motivated and supported him through every step of the process.

“My family (and) my fallen and wounded brothers are my inspiration and my desire to live,” he said.

Saldana’s service and strength also inspired those around him, said Orndoff.

“Working here at NGA with Rafael, and his fellow soldiers, sailors, airmen, and Marines has revitalized that long-ago feeling of accomplishment and anticipation of going to work,” said Orndoff. “Rafael is an outstanding role model for all future wounded warriors seeking a new career at NGA. He (believes) that NGA provided him the opportunity and privilege to continue to

serve his fellow service members, the United States Marine Corps, and his country. I am humbled by his sacrifice, sincere desire to help others and duty to country.”

Since the program started in 2009, more than a dozen wounded warriors have been assigned to the Analysis directorate. The directorate continues to work with Human Development to find opportunities to help others, said Laura Jones, deputy chief of staff for Analysis.

Saldana encourages other wounded warriors going through similar transitions to never give up, he said.

“I think it’s hard because you see yourself as not being the same person,” said Saldana. “But you must remind yourself that greatness is nothing but the ability to overcome adversity. It is nothing but an opportunity to become greater.”

“Before I came to NGA, I thought I was going to have a huge challenge because of my injuries, but that hasn’t been the case.

I gained a new career and skill set, but I also gained a sense of hope for the future. This proved I could still serve my country and do more than I thought I could.”

–Rafael Saldana

Saldana completed his internship in January and is now looking ahead to what’s next in his journey, he said.

“When I joined the military, I went in knowing what the possibilities could be,” said Saldana. “What I wasn’t expecting was all the generosity and support I received. I was proud to be an American before, but after my injuries and all the support I’ve received, I’m even prouder.”✱

NGA director provides vision for next phase of intel at GEOINT Symposium

By Jacquelyn Karpovich, Office of Corporate Communications

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY DIRECTOR LETITIA

A. Long delivered a keynote touting the agency's ongoing transformation from a static product provider into a dynamic resource for geospatial intelligence services at the U.S. Geospatial Intelligence Foundation's GEOINT symposium in Tampa, Fla., April 14-17.

Long cited NGA's priority initiatives making this transformation possible, which include Map of the World, analytic capabilities, next-generation collection, the Globe, open information technology and research.

"These pillars are so critical that we are changing the way we do our mission and manage our enterprise," said Long.

This transformation and the initiatives supporting it will usher in the next phase of intelligence – immersion, she said.

"By immersion, I mean living, interacting and experimenting with the data in a multimedia, multi-sensory experience with GEOINT at its core," said Long. "Immersion will break down the barriers between collectors, analysts, customers and decision makers."

Long expanded on the concept of an immersive intelligence environment by asking the audience to imagine a not-too-distant future where virtual teammates "live in the data," collaborating in virtual multimedia and gaming environments with constant access to multi-source data in the Cloud.

Originally scheduled for October 2013, the symposium was postponed until April 2014 due to the government shutdown.

The location of this year's symposium in Tampa, is also the headquarters location of U.S. Central Command and the U.S. Special Operations Command. The CENTCOM and SOCOM commanders spoke at the symposium, highlighting the importance of geospatial intelligence to their mission requirements and reflecting the symposium's theme of "Operationalizing Intelligence for Global Missions."

GEOINT is the "coin of the realm" and is at the core of SOCOM's operations, said Navy Adm. William McRaven, SOCOM commander.

"I realize that there is no such thing as a local problem," said McRaven. "Things that happen in Mali affect us. Things that happen in Algeria affect us. Things that happen in the Pacific, in Asia, they will affect us. They may not affect us this very minute, they may not affect us tomorrow, but sooner or later they are going to affect us, so we can't ignore those problems. We have to look at the problem set globally. We have to have a global perspective."

Panels and presentations at the government pavilion stage addressed several of NGA's priority initiatives. Agency leads for strategy and future vision, Map of the World, the Globe and other initiatives all discussed how NGA is leading the way to the next immersive phase of intelligence.



NGA Director Letitia Long delivering the keynote presentation at the GEOINT 2013 Symposium. Photo courtesy of USGIF.

"Immersion will break down the barriers between collectors, analysts, customers and decision makers."

—Letitia A. Long

Doug McGovern, NGA's InnoVision director, provided an opening day keynote and a government pavilion discussion of the agency's research and development efforts around immersive intelligence, including the multimedia and multi-sensory experiences mentioned in Long's keynote.

"When I think about the future of GEOINT, I think about immutable characteristics," said McGovern. "In the future it's about being persistent ... and it's about how you establish a virtual persistence by bringing all the different kinds and quantities of GEOINT data together."

The future immersive intelligence environment must be considered from an analyst and a network perspective, said Dave Gauthier, NGA's Activity Based Intelligence lead, during his presentation at the government pavilion.

"I think immersion goes both ways," said Gauthier. "Not only do we have to have analysts immersed in a data environment and comfortable in that environment, living there every day, but we need to think the opposite, as well. We need to have our network and our algorithms immersed in the knowledge that the analysts have in their minds about our intelligence problems ... We're really out there looking for power tools that we can put in the hands of the analyst where they've been given hand tools in this environment in the past."

NGA staff also demonstrated capabilities for Map of the World and the NGA App Store and concepts behind Activity Based Intelligence in the exhibit hall at a government kiosk space shared with counterparts from the Defense Intelligence Agency and National Reconnaissance Office.

Logan Schwartz, systems engineer in NGA's Xperience directorate, was one of the NGA staff manning the agency's kiosk in the exhibit hall. Many kiosk visitors were interested in learning about the Globe or how they can be a part of the online NGA App Store, said Schwartz, adding that the value of NGA's symposium presence demonstrates the agency means business when it comes to GEOINT.

"We want to engage our partners, we want to be out there," said Schwartz. "We want to be forward leaning, we want to change the way we acquire new technologies and get them into the enterprise."

Find more coverage of NGA at GEOINT 2013* at <https://www1.nga.mil/MediaRoom/GEOINT2013/>



WWW1.NGA.MIL/
MEDIAROOM/GEOINT2013/



Director of National Intelligence James R. Clapper speaks to attendees April 15 at the GEOINT symposium in Tampa. The DNI praised NGA as a model of customer service and assured the crowd that NGA's efforts are noticed by the nation's leaders. Photo courtesy of USGIF.

NGA's InnoVision poised to help agency deliver 'immersive' future for GEOINT

By Jason Moll, Office of Corporate Communications

THE NATIONAL GEOSPATIAL-INTELLIGENCE

Agency is working to acquire and develop capabilities that will usher in the next, "immersive" phase of intelligence, said the agency's lead for research and development at the 2013 GEOINT Symposium April 15.

InnoVision Director Doug McGovern detailed his directorate's role in designing and building the immersive future for geospatial intelligence, or GEOINT, that NGA Director Letitia A. Long outlined in her keynote address the same day.

Long described a future where "living, interacting and experimenting with data in a multimedia, multi-sensory experience ... will break down barriers between collectors, analysts, customers and decision makers."

To achieve that vision, NGA's research and development must evolve beyond enhancing tools like radar and imagery, to creating technologies that enhance decision making and unravel complex systems, such as global flows of information and people, said McGovern.

InnoVision is testing and fielding capabilities that will deliver the "multimedia and multi-sensory" experience outlined by Long, said McGovern. NGA is relying on InnoVision's expertise in phenomenologies,

spatio-temporal analytics and computational science to acquire visualization technologies, hands-free data interfaces, virtual games and collaborative environments.

These capabilities will "place the person at the center of the data," and enhance and deepen the analyst's thinking and expertise, said McGovern.

"Visual thinking increases cognitive productivity," said McGovern.

Enhancing the ability of analysts to generate insights and make meaningful decisions will be even more important in the future, given that they will be completely awash in data and information, said McGovern.

McGovern also discussed a future GEOINT that is "persistent, immersive and anticipatory."

That involves the creation of a worldwide network of sensors and platforms and the cultivation of an analytic capability that can identify natural and man-made changes to the environment and flows of ideas and goods in real time, said McGovern. Further, it will create the ability to cue analysts before something happens so they know where they should be watching. ✨

"InnoVision is testing and fielding capabilities that will deliver the multimedia and multi-sensory experience."

—Doug McGovern



InnoVision Director Doug McGovern speaks April 15 at the GEOINT 2013 Symposium. Photo courtesy of USGIF.

Communication, transparency help NGA revolutionize business

By Regina Galvin, Office of Corporate Communications

AS AN INFORMATION-PACKED WEEK ENDED AT THE GEOINT symposium in Tampa April 17, the National Geospatial-Intelligence Agency's advocate for industry innovation highlighted the agency's plan to change the way it works with industry.

"By taking the energy of uncertain times, combining it with clarity of vision and purpose, together we will produce another great era of American invention, ingenuity and teamwork," said Polly Shaffer at the Tampa Convention Center.

NGA is operating under five principles to accelerate its strategy, said Shaffer. The principles are: strengthening private sector partnerships; changing the relationship with industry; driving industry's investments in the development of innovative, operational GEOINT capabilities; maximizing transparency and expanding the agency's contractor base; and disaggregating its supply side.

In a pre-symposium interview, Shaffer discussed NGA's plan to implement the transformation of its business practices, including a focus on what the agency calls the "seven C's," which are communicating, connecting, clearing, compensating, contracting, collaborating and co-creating.

"We need to communicate NGA's vision, needs, challenges and opportunities," said Shaffer. "To increase transparency, we need to expose more about NGA to prospective partners in an unclassified environment."

Connecting with prospective partners will help the agency learn their capabilities, interest areas and ideas, said Shaffer.

The clearance process is another area that needs to be streamlined to make cleared people available on-demand, said Shaffer. The agency must also look beyond the

traditional ways of contracting services for innovative ways to compensate partners for their services.

"We're talking about pay-per-use and pay-per-impact on mission," said Shaffer. "Additionally, we're considering non-monetary compensation."

The new compensation model will seek to implement agile ways to contract with partners, so that getting a contract could be as simple as clicking a link.

"We will develop and implement processes and high-performance technical solutions that allow globally distributed virtual teams to be formed on-demand, based on topics, people's registered skills and security classifications," said Shaffer.

"Finally, NGA with its customers and partners will co-create capabilities, content, products and services in an online common environment that builds on our collaboration efforts," said Shaffer.

The target for implementing these changes is 2017, she said.

"The era of the [request for proposal] and traditional acquisition is waning," said Shaffer. "We have to craft a new national defense economic model based on a disaggregated supply side."*



Sandra Broadnax, director of the Small Business Programs at NGA, also discussed business opportunities during a panel at the symposium. Photo courtesy of USGIF.



Ben Tuttle, NGA mobile applications team lead, speaks during GEOINT 2013 Symposium April 14. Photo courtesy of USGIF.

the Mobile Interactive Intelligence Reports allows easy creation of reusable interactive content deployable across many platforms.

"We will soon have disconnected capability for these apps on Android, iOS, the Blackberry 10 and Windows 7 and 8," said Tuttle. "There are obviously certain limitations to what we can and cannot provide without

a network connection, but our apps allow us to gracefully degrade the service as analysts lose access to the data they need."

The new apps were used by security personnel as part of NGAs support to recent special events such as the Sochi Olympics and continue to be used by our federal partners, said Tuttle. The mobile devices and apps continue to transform how GEOINT is collected, increase situational awareness, promote information sharing, and enable NGA's vision of an online, on-demand environment on multiple security domains, much like the Map of the World and the Globe.

"The feedback has been positive and we have been able to implement suggestions users have made at a rapid pace," said Tuttle. "It's the agency's priority to make

data accessible on all platforms at all times and provide users with online on-demand access to search, discover and access that data. I believe that apps like MapCache and standards like the GeoPackage will be instrumental building blocks in fully realizing those goals."*

"NGA works with a wide range of GEOINT users, to include emergency response, search and rescue, security, and military personnel who require constant use of mobile applications."

—Ben Tuttle

NGA alumna first woman to receive USGIF lifetime achievement award

Office of Corporate Communications

THE UNITED STATES GEOSPATIAL Intelligence Foundation announced its renamed lifetime achievement award in Tampa, Fla., April 17 at the GEOINT 2013 Symposium and added the first woman to the ranks of pioneers who have received the award.

The USGIF Arthur C. Lundahl-Thomas C. Finnie Lifetime Achievement Award was presented to Roberta "Bobbi" Lenczowski for her past and present work at NGA and its predecessor organizations.

"For me, this award is a reminder that we must continue to pay it forward as mentors and advocates, following the example of both Art Lundahl and Tom Finnie," said Lenczowski in an April 17 USGIF press release.

Lenczowski is the 10th recipient of the award now named for both Art Lundahl, an imagery analysis pioneer best known for leading his team's discovery of Soviet missiles in Cuba, and his contemporary Thomas C. Finnie, a pioneer in modern mapping, charting and geodesy.

Lenczowski retired in 2005 from NGA after spending 28 years in the public sector, according to the USGIF release. Her final assignment was executive director of NGA Campus West in St. Louis. Lenczowski also served as NGA's technical executive, director of operations at the National Imagery and Mapping Agency, and president of the American Society for Photogrammetry and Remote Sensing. She is serving her second appointment as NGA representative to the National Oceanic and Atmospheric Administration's Advisory Committee on Commercial Remote Sensing.

To learn more, visit USGIF's website at www.usgif.org, or the NGA Alumni Association's website at <http://www.ngaalumni.org/1.html>.*

Editor's Note: NGAA and USGIF contributed to this article.



WWW.USGIF.ORG



WWW.NGAALUMNI.ORG



Roberta "Bobbi" Lenczowski accepts the USGIF Lundahl-Finnie Lifetime Achievement Award in Tampa April 17. Photo courtesy of USGIF.

NGA EMPLOYEES RECOGNIZED AT GEOINT SYMPOSIUM

Three NGA employees were recognized at this year's GEOINT symposium for their achievements.

Photos courtesy of USGIF.



Melissa Martz of Analysis received the USGIF Outstanding Administrative/Support Award for her commitment to mission at the State Department NGA Support Team.



Robert Arbetter of IT Services received the USGIF Government Intelligence Achievement Award for his role in formalizing the concept of Activity Based Intelligence.



Bryan Goltry of Analysis received Penn State University's Lt. Michael P. Murphy Award for exceptional contributions to geospatial intelligence and academic excellence as a Penn State graduate student.

Mobile apps help manage chaos of disconnected world

By Erica Fouche, Office of Corporate Communications

WHEN INTERNET NETWORKS CRASH during natural disasters or bandwidth becomes unavailable at crowded national special security events, analysts must be able to continue doing their jobs.

The National Geospatial-Intelligence Agency's Geospatial Intelligence Advancement Testbed Mobile Apps Team has created a capability that allows analysts to maintain access to GEOINT data despite limited or no connectivity, said Ben Tuttle, Ph.D., mobile apps team lead.

The April 14 panel at the GEOINT Symposium, "Chaos Management in a Disconnected World," highlighted how Tuttle and his team have worked with other analysts across the agency

and throughout the GEOINT community to explore the legal issues, application governance, and emerging standards for mobile capabilities.

"NGA works with a wide range of GEOINT users, to include emergency response, search and rescue, security, and military personnel who require constant use of mobile applications," said Tuttle. "Many commercial apps are completely dependent on access to servers to function properly. We know analysts need the capability to use their GEOINT apps when disconnected from servers, because it's the most frequent request our customers have."

The mobile apps team sought to develop applications that provide persistent and relevant GEOINT

when connected and disconnected from their servers, and to ensure the apps, and the data they store, gracefully transition between periods of connectivity.

An interagency working group, led by the Army Geospatial Center, developed GeoPackage, said Tuttle.

GeoPackage provides the Open Geospatial Consortium with a set of universal standards for storing data to reduce duplication on mobile devices' limited storage space.

Tuttle and his team developed MapCache to ease the creation of caches for offline use, he said. The Mobile Analytic GEOINT Environment, known as MAGE, allows users to create and share observations in the field using mobile devices, and



Geoff Fowler (R) and Mark Riccio discuss customer service at the GEOINT Symposium in April. Photo courtesy of USGIF

New online presence paves way for more robust collection of NGA products, services

By James Brown, NGA Xperience Directorate

THE NATIONAL GEOSPATIAL-INTELLIGENCE Agency has launched three interactive, customizable sites in the last year with a consistent look and feel and improved tools to allow NGA customers to discover GEOINT content faster and easier.

“Putting GEOINT in the hands of our users and providing iterative improvements are top agency priorities,” said Geoff Fowler, director of the agency’s Xperience Directorate.

“The consolidation of NGA websites this spring has laid the groundwork for the Globe, an enterprise platform that will be the customer’s entry point to NGA’s knowledge, content and services,” said Fowler. “NGA is serious about providing customers what they need, when they need, where they need it.”

The landing pages launched earlier this year on the Secret Internet Protocol Router Network, or SIPR, and the Non-Classified Internet Protocol Router Network, or

NIPR, include improved search tools; live data updates; Map of the World; content management; dynamic updates to country pages, which include information pertaining to geopolitical climates; and a consolidated list of NGA products and services. NGA launched a landing page for the Joint Worldwide Intelligence Communications System, or JWICS, in late 2013.

“I check the NGA website every day, and find it very helpful,” said Betty Pearce, from the Defense Department’s Missile Defense Agency. “Having the geospatial information in one spot saves me time and makes my job a lot easier. I think I save about 30 minutes or more every day using this new site.”

The first iteration of the Globe is available to a limited group of customers now and will be available to a larger group this summer, said Fowler. The capability will eventually reside on all three networks and will improve with each release. ✨

NGA’s Map of the World provides foundation for intel integration

By Nancy McGillicuddy, Office of Corporate Communications

NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY LEADERS AT THE GEOINT symposium in Tampa, Fla., April 14-17, touted the agency’s Map of the World as one of the six principal pillars in the new immersive intelligence experience.

NGA’s Map of the World is an environment where all GEOINT-related and multi-source content is integrated and available to users. It is the foundation for intelligence integration, said NGA Director Letitia A. Long in her keynote address at the four-day event.

During the past year, NGA has made tremendous progress making the Map of the World a reality, she said. Map of the World will be comprised of 12 different data views, and nine of them are online now, including maritime and aeronautical.

“As we integrate these views and add analysts’ observations, we can deliver deeper analysis more quickly than ever before,” said Long.

As the Map of the World continues to evolve, NGA knows it is building more than just a map, said John Goolgasian, director of NGA’s Foundation GEOINT Group.

“It is the foundation for intelligence, information and knowledge to be anchored, integrated, presented, accessed and analyzed,” said Goolgasian. “Through a single point on the Earth, the Map of the World will present an integrated view of collection assets from across the community, mapping information for military operations, GEOINT observations, and NGA analytic products, data and models.” ✨



STEM symposium sparks agency interest among students

By Nancy McGillicuddy, Office of Corporate Communications
Photo by Kevin Clark, Office of Corporate Communications

PROSPECTIVE COLLEGE STUDENTS FROM THREE HIGH SCHOOLS near the National Geospatial-Intelligence Agency's Springfield, Va., campus spent March 12 presenting their research to scientists, mentors and fellow students as part of the agency's science, technology, engineering and mathematics high school symposium.

About 20 students from Thomas Jefferson High School for Science and Technology in Alexandria, Va., Benjamin Banneker High School in Washington, D.C., and Springbrook High School in Silver Spring, Md., participated in the inaugural STEM event.

Three of the students presented research during the morning session.

Isabel Roscoe and Anne Li, both seniors at Thomas Jefferson High School for Science and Technology, spoke about their research evaluating image classification techniques on hyperspectral imagery collected over the Deep Water Horizon oil spill in the Gulf of Mexico in 2010. The two visited NGA last year and decided they were interested in the STEM program.

"This mentorship program opened up quite a lot of new fields of study for us," said Li, who thanked the NGA project scientists and mentors who helped them.

Larry Hensley, a senior at Thomas Jefferson High School, presented research on large-scale image processing using high-performance computing. He has visited the agency as part of the program and likes the opportunities available in government service, he said.



Lenora P. Gant, Ph.D., NGA's senior advisor for STEM workforce initiatives, speaks to about 20 high school students during a STEM event at NGA. Gant said the STEM program promotes geospatial-intelligence awareness among students and faculty.

"I will definitely consider (NGA)," said Hensley.

The program promotes geospatial-intelligence awareness among students and faculty, said Lenora P. Gant, Ph.D., NGA's senior advisor for STEM workforce initiatives.

"Thank you to the mentors, advisors and project scientists who have reached out across these high schools to mentor and advise these students," said Gant.

The STEM event also included a tour of the NGA facility and a networking opportunity with NGA scientists, analysts and program managers. Students also had an opportunity to ask about future work career opportunities at NGA. ✨

NGA products critical to security, preparedness at Olympic Games

By Nancy McGillicuddy, Office of Corporate Communications

AS THE WORLD WATCHED ATHLETES compete in the 2014 Olympic Winter Games in Sochi, Russia, the National Geospatial-Intelligence Agency was busy providing specially designed geospatial products to help ensure security and emergency preparedness.

"There was a significant security challenge that required the analytical capabilities of NGA to ensure the safety of U.S. athletes and citizens attending the event," said Lorean Goodwin, NGA's Sochi Olympics special events coordinator.

NGA produced multiple products prior to the game, said Goodwin. Products included a field book, a 3-D flythrough, the Navigation Viewing Tool and a torch relay graphic.

One of the most popular items was the field book, said Goodwin. Produced at the request of the Department of State, the 198-page book enabled liaison officers to help inform athletes by providing

reference and venue information. The book included base maps, hospital and emergency services locations, climate data and railroad data.

The Navigation Viewing Tool was another item created by NGA for the games, said Goodwin. The tool allowed analysts to view products over an area of interest in real time.

The 3-D flythrough was created before the start for the Olympic Games and provided an aerial overview of the coastal and mountain games locations.

NGA also deployed two people to Russia to provide on-the-ground support, said Goodwin. Operations were run from both NCE and NCW 24 hours a day.

Support to the games required long-term planning that drew upon lessons learned during support to the London, Beijing and Vancouver



A screen shot from a 3-D flythrough shows the coastal region of Sochi, Russia, where portions of the 2014 Olympic Winter Games took place. NGA produced the 3-D graphic and multiple other products in support of the games, including a field book, the Navigation Viewing Tool and a torch relay graphic. Approved for public release, case number 14-279.

Olympic Games, said Goodwin.

"This is a challenge our agency began preparing for in 2007, when the Sochi site was selected," said Goodwin. "The biggest lesson learned was to get started early." ✨

'A growing DANGER'

NGA ANALYSTS CRITICAL IN FIGHT AGAINST WMD PROLIFERATION

By Kristen Mackey, Office of Corporate Communications

LIKE NO TIME IN RECENT HISTORY, NATIONS LIKE Syria, Libya, Iran and North Korea have the potential to develop or obtain weapons of mass destruction, a serious and growing concern in the U.S. and throughout the international community.

TO ensure the intelligence community and Department of Defense are able to manage the threat of WMDs, a group of National Geospatial-Intelligence foundation GEOINT analysts work with mission partners at the Defense Intelligence Agency's Counterproliferation Office at the Army's Rivanna Station facility in Charlottesville, Va.

There is a continuously evolving landscape with potential for foreign acquisition, development or use of WMDs and numerous potential threats and actors – state and non-state, said Tom Francis, director of the Counterproliferation Office, or DCP.

Francis and his teams assess all aspects of biological and chemical weapons and foreign nuclear programs, including policy, security and the capability to produce or acquire nuclear material or weapons, he said.

Many countries are pursuing WMD programs and will continue to improve capabilities over the next decade, according to assessments of the proliferation threat, said Francis. The assessment

“With this mission, if you get it wrong, a lot of people die. A church or school cannot be mistaken for a storage unit, (and) humans cannot be mistaken for animals – it is critical that we have unanimous consensus. These mistakes can't be made, and Syria was a perfect example of multi-agency coordination.”

–Tom Francis

also shows that biological and chemical materials and technologies move easily in a globalized economy, as do personnel with the scientific expertise to design and use them.

Additionally, terrorists or insurgent organizations, acting alone or through middlemen, may acquire nuclear, chemical and biological weapons – possibly even in states that do not currently have such programs, said Francis.

“I wish I could say WMDs were something we have seen the last of with treaties and handshakes, but the fact is, this mission is a growing danger to the U.S. and its allies, not a decreasing mission,” said Francis. “That makes our job at DCP more important than ever, and my analysts from NGA even more critical to me.”

Though there is a contingent of analysts supporting the DCP mission at DIA headquarters and at the combatant commands, Francis is a proponent of co-locating the people who work on this growing mission, he said. So, when a decision by the

Base Closure and Realignment Commission, or BRAC, relocated DIA from Herndon, Va., to Charlottesville, Francis advocated bringing NGA analysts, as well.

The NGA support team at the new DIA building on Rivanna Station and others there help facilitate DIA's ground intelligence mission and the Army's National Ground Intelligence Center there, said Francis. They work on many sensitive issues. Having NGA

analysts familiar with the intelligence allows them to engage early, anticipate the DOD's needs and quickly meet requirements.

The NGA analysts at DCP are good at getting Francis what he needs to meet his mission requirements, often providing much more than what was requested, said Tom Cooke, NGA's division chief, who oversees embedded GEOINT support to DIA at Rivanna Station.

“That is very true,” Francis said. “NGA's analysts (here) are not just physically integrated with the mission. By working side by side with my guys, the mission is second nature to them. They know what I need, often before I need it.”

The NGA analysts are able to provide tailored products critical to the mission that Francis cannot get elsewhere, he said. But despite that expertise, he knows that other agencies, including other offices at NGA, have intelligence that DCP may not. Cooperation and communication with those other offices is critical to making sound decisions.

“With this mission, if you get it wrong, a lot of people die,” said Francis.

So, as events unfolded in Syria in 2013, Francis and his teams coordinated with analysts and experts from other agencies and offices to reach a sound conclusion, he said. In the end, they all agreed WMDs had been used in Syria.

“A church or school cannot be mistaken for a storage unit, (and) humans cannot be mistaken for animals – it is critical that we have unanimous consensus,” said Francis. “These mistakes can't be made, and Syria was a perfect example of multi-agency coordination.” ✨

NGA SUPPORT TEAM AT RIVANNA STATION HAS MULTIPLE MISSIONS

ANALYSTS AND TECHNICAL EXPERTS ASSIGNED TO THE National Geospatial-Intelligence Agency Support Team at Rivanna Station provide direct GEOINT support to the National Ground Intelligence Center and Defense Intelligence Agency operations in Charlottesville, Va.

The NST is an extension of NGA's Analysis directorate and provides a holistic GEOINT solution for NGIC and DIA-Rivanna, said Army Col. Joe Secino, NST chief. The analysts there are embedded and engage in some of the most pressing intelligence challenges facing the nation. The NST's three divisions provide foundation GEOINT for order-of-battle assessments, myriad specialized geospatial analytic and image science capabilities, and detailed long-term analysis of ground weapon systems and potential adversaries.

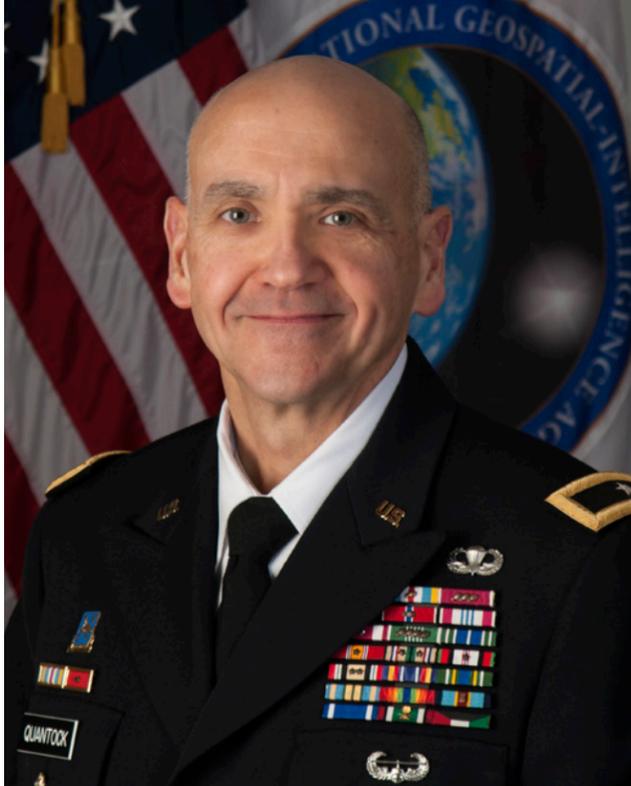
The NST implements NGA's strategic vision by drawing on partner expertise to broaden and deepen analytic capabilities, said Secino. The team recently leveraged its expertise to develop an automated advanced mobility toolbar for determining the effects of terrain on artillery range rings – in direct support of NGA's goal of ensuring online, on-demand capabilities for mission partners.

This legacy of direct GEOINT support dates back to the U.S. Army's longstanding scientific and technical intelligence and general military intelligence analytic presence in the central Virginia location. The Rivanna Station NST was established at Charlottesville in July 2010 when DIA moved many of its missions and resources there.

**NGA SENIOR Q&A:
BRIG. GEN. MARK R. QUANTOCK**

By Kristen Mackey, Office of Corporate Communications
Photo by Kevin Clark, Office of Corporate Communications

BRIG. GEN. MARK QUANTOCK IS THE MILITARY DEPUTY of the National Geospatial-Intelligence Agency. As NGA's senior military officer, he is a member of the NGA command element. He advises the NGA director on combat support functions and provides a military perspective to the NGA board of directors. He also oversees NGA's expeditionary operations. He manages more than 400 active duty military billets across the NGA enterprise and has oversight of NGA's Military Services directorate.



DESCRIBE YOUR LEADERSHIP STYLE.

I WOULD DESCRIBE MY LEADERSHIP STYLE AS PARTICIPATORY. I LIKE active stakeholder involvement in the decisions we make. I think stakeholder buy-in is critical to successful execution.

I'm also a believer in heliotropic leadership. The "heliotropic effect" argues that all living systems lean toward positive energy rather than negative energy – that people remember better, learn faster and perform better in a positive environment.

While practicing it my entire career, I didn't even realize it had a name until Gen. Curtis Scaparrotti described the type of command environment he wanted in his International Security Assistance Force Joint Command headquarters when I worked for him as his Joint Intelligence chief, or J2, in Afghanistan. The command climate he fostered was the best I've ever seen, even on the darkest days in a year of combat operations.

I've been fortunate to have worked for some great men and women who live by Army values and create the positive type of climate I seek. But Gen. Scaparrotti stands out because of his positive brand of leadership. I would follow that guy anywhere.

TELL US ABOUT THE NEW STRUCTURE OF NGA'S MILITARY SERVICES DIRECTORATE.

MR. SAMMIE JACKSON IS THE NEW DIRECTOR FOR MS, AND HE is the right person for the job. His depth and breadth of knowledge in all things MS make him the perfect senior to lead the organization.

MS has not undergone a true reorganization. Rather, there is better alignment of functions. For example, we are moving personnel, technology and logistics to the same organizations that manage those functions for most of the agency, like Human Development and Security and Installations.

At the beginning of the wars in the Middle East, it made sense to have those administrative things managed within MS, but as we wind down large combat operations abroad and are challenged to maximize efficiency, I recommended to the director that now was the time to make adjustments.

WHAT DO YOU SEE AS MAJOR PRIORITIES IN YOUR ROLE AS NGA'S MILITARY DEPUTY?

MY PRIORITY IS TO HELP NGA REALIZE ITS STRATEGIC VISION. THIS involves helping communicate our message to the field – chiefly to the services, combatant commands, the Office of the Secretary of Defense, and the intelligence community.

WHAT AREAS DO YOU BELIEVE YOU CAN IMPROVE OR ADVANCE FOR THE AGENCY?

As a combat support agency, we must interface with our partners to ensure we understand their requirements, and they understand our capabilities.

The senior military advisor role runs the gamut – from helping the director formulate options for senior decision makers, to providing a military perspective on any topic. I think a top priority is to ensure I'm available to work issues at the flag level for her with the military.

I THINK WE CAN IMPROVE OUR COMMUNICATIONS WITH OUR

partners. You cannot have too many messengers – provided you have a consistent message. The director has asked me to help build relationships with foreign partners in conjunction with our International Affairs office, for example – specifically where military-to-military conversations can help move us forward faster.

The director has asked me to provide oversight on a number of topics and to ensure we have tight linkages between the agency and our partners. Afghanistan, for example, remains a top priority. Supporting transition to the Resolute Support mission is not a task for any one key component in NGA. It's an agency mission. I try to ensure we incorporate all relevant KCs in the transition, while I interface with NATO's International Security Assistance Force and U.S. Central Command senior leaders to present a clear NGA message and resolve any issues.

Other areas where I think the MD can be helpful are cyber warfare and optimizing the placement of our military professionals. Wherever I'm needed, I'm happy to help.

WHAT IS YOUR RELATIONSHIP WITH OSD AND THE JOINT CHIEFS OF STAFF?

CLEARLY THE PENTAGON PLAYS A SIGNIFICANT ROLE IN WHAT WE do. They are one of our key customers, and one of our bosses. No KC should have to go it alone working tough issues with the joint staff, OSD, combatant commands and the services. Leveraging the military deputy ensures we bring the full power and weight of NGA to bear in achieving success with our military partners.

YOU HAVE STATED THAT NGA SHOULD HIGHLIGHT SUPPORT WE GET FROM RESERVISTS WHO WORK HERE. TELL US WHY THAT IS IMPORTANT TO YOU.

OUR RESERVISTS DO A FANTASTIC JOB. WE NEED TO CONTINUE TO capitalize on this capability and capacity – they are "value added," to be sure.

We need to expand the Reserve capacity here – to partner with geospatial-capable Reserve units and individual reservists across the country to leverage their capabilities for service requirements. This expands our ability to meet requirements and broadens and deepens the capability of the GEOINT enterprise.

HOW DO YOU BALANCE MILITARY SERVICE, INCLUDING MULTIPLE AND MAJOR OPERATIONS OVERSEAS, WITH YOUR FAMILY LIFE AT HOME AT FORT BELVOIR, VA.?

PROBABLY NOT WELL. BUT MY WIFE COMES FROM GOOD STOCK. HER father was an Army command sergeant major, so she had a pretty good idea of what she was getting into when she "married down" to a lieutenant in 1982.

She's been the love of my life, a terrific mother to our three fantastic, now grown, children, and she is, simply put, a wonderful human being. I clearly married up. We balance our time together by focusing on "quality" time over "quantity of" time. And we treat each other as equal partners – with love, dignity and respect. But make no mistake – she owns the checkbook, so I give her a little more respect.

I am honored and humbled to be NGA's military deputy. I've worked on the periphery of NGA for many years as a military intelligence officer and have been the beneficiary of NGA's superb support. So, I jumped at the opportunity to join the NGA family and am grateful to Director Long for bringing me on board. ✨

Capitol Hill tour ‘invaluable’ to understanding Congress

By Kristen Mackey, Office of Corporate Communications
NGA photo

AN ANALYTIC ADVISER WITH THE NATIONAL GEOSPATIAL- Intelligence Agency’s Office of Corporate Communications Congressional and Intergovernmental Affairs Division recently returned from a one-year fellowship on Capitol Hill.

Jo Lea Wigley, who now works as a conduit between OCC and the Analysis directorate, worked for Maine Sen. Susan Collins and said her time on the Hill broadened her experience and will help in her NGA career.

Although part of the reason she chose Collins’s office was the senator’s appointment to the Senate Select Committee on Intelligence and its relevance to Wigley’s own career in the intelligence community, Collins’ solid reputation and known leadership on the Hill was the most appealing reason for choosing the senator, said Wigley.

“I had followed Collins’s career and viewed her as a hardworking, pragmatic, reputable public servant,” said Wigley. “She works issues that are vital to the well-being of the nation, not just her home state of Maine. She is well respected by other senators on both sides of the aisle, which I believe is largely due to her grasp of substantive policy issues, her attention to detail and her ability to work out compromises.”

Years of interest in the legislative process prompted Wigley to answer NGA’s competitive-education call for a congressional fellowship offered in conjunction with the Brookings Institution, a Washington, D.C.-based think tank, she said.

The agency selected Wigley as its candidate for the program in February 2012, she said. She received word from Brookings in late 2012 that she was accepted and would start the program in January 2013. She chose to do the 12-month fellowship to maximize her experience on the Hill. Brookings also offers a seven-month fellowship.

During her time with Collins, Wigley focused on foreign affairs, defense and national security, she said. Her job included researching topics, drafting legislation, coordinating with other congressional offices, weighing in on vote decisions, and meeting with think tanks, lobbyists and academia – many of which vie for congressional aid and support. She spent most of her time doing hearing preparation.

“The most important part of hearing preparation was crafting questions for the senator to ask the witnesses,”

said Wigley. “We had to know specific topics the senator was interested in, research positions of other senators on the topic, collect public statements of the witnesses, then craft questions for her that were pointed and well sourced.”

People don’t understand how hard Congress works, said Wigley.

“Most of us have an impression of Congress from Hollywood, TV shows and the news media – with crooked staff, fine dining and ‘bad’ lobbyists,” said Wigley. “In reality, the staff and members work tirelessly for issues they believe in, and the lobbyists are legitimately seeking support for important issues.”

One of Wigley’s proudest accomplishments during her fellowship was drafting a piece of the Iran sanctions legislation, she said. She worked for months with another fellow and a variety of experts from the Congressional Research Service, industry and experts on foreign affairs to negotiate the first draft of the sanctions language.

There were policy differences between the fellows and their respective offices, said Wigley. But, they were able to reach mutual agreement and coordinate with other committees, special interest groups and the State Department to address all concerns before presenting the final language of the bill to the senators.

“Being a fellow gave me an unprecedented understanding of Congress and how it works,” said Wigley. “I know that my experience there makes me a better NGA employee in that the fellowship helped me understand how members think about issues. That’s invaluable.”

The Legislative Fellows Program consists of an intensive orientation to the operations and organization of the U.S. Congress, followed by a full-time assignment on the staff of a congressional member, committee or support agency.

Opportunities are open to all NGA civilian Band 4 employees and above who have a minimum of two years of continuous federal service, at least one of which is NGA. Additional information on this program is available at <http://www.brookings.edu>.



WWW.BROOKINGS.EDU

“Being a fellow gave me a (new) understanding of Congress and how it works, I know that my experience there makes me a better NGA employee in that the fellowship helped me understand how members think about issues.

That’s invaluable.”

–Jo Lea Wigley



Seamless info stream key to success of NGA operations centers

Story and photo by Kevin Clark, Office of Communications

DESIGNED WITH INSPIRATION FROM THE TELEVISION SHOW “24,” the state-of-the-art NGA Operations Center in Springfield, Va., has been the center for agency operations in the Washington Metro area since it opened in September 2011.

The facility offers GEOINT analysis, products and services around the world and around the clock, seven days a week by consolidating personnel who were previously spread throughout the capital region, said Erik W. Medlin, the NOC’s Public Affairs Officer.

Having everyone in a single location allows for a seamless flow of information between divisions and a direct line to NGA leadership, said Medlin.

The NOC contains a multitude of computer workstations for GEOINT analysis, and 56 80-inch monitors stitched together and configurable into whatever size leadership requests for any given task. More than 100 employees work on rotation to support U.S. military operations, maritime security operations and disaster relief efforts. A similar facility exists at NGA’s Western campus in St. Louis.

PiX provides avenue for sharing unclassified information

By Simmie A. Adams and Brent Studts, NSG Expeditionary Activities

IN TIMES OF CRISIS, POLITICAL UNCERTAINTY OR WARFIGHTING support scenarios, reliable access to operational information can be hard to come by for U.S. and allied civilian and military personnel.

For the past three years, the National System for Geospatial Intelligence Expeditionary Activities has provided geospatial information for NSG partners in these scenarios around the world through its Protected Internet Exchange, known as PiX, said Ron Siudzinski of the Imagery Management Division within the National Geospatial-Intelligence Agency's Information Technology Services Directorate's Content Solutions Office.

"PiX provides a gateway to imagery, reporting and a wiki website that encourages collaborative content editing and is managed by a subject matter expert support team," said Siudzinski.

PiX platform hosts unclassified, for-official-use or sensitive, data and the same single sign-on authentication software as Intelink applications on top secret and secret networks, he said.

The platform was created to combat inadequate sharing of current information between intelligence, defense, civil and nongovernmental organizations and a lack of systems to support continuity of operations, said Siudzinski. PiX allows users to create and find information outside normal Department of Defense networks.

The atmospheric and background data provides a great frame of reference for the information without viewing multiple sources, said Army Maj. Caroline O'Malley, U.S. Central Command-Forward.

"PiX enables consumers and stakeholders to see and understand their environment in a meaningful way, which translates to greater collaboration, enhanced analytical fusion and seamless operations," said Army Maj. Kris Cornwell, CENTCOM.

Syria is another area where PiX has provided significant value in coordinating humanitarian, transition and nonlethal assistance, said O'Malley.

"Given the additional tasks that we all have, the compilation and reference that PiX-Syria provides is an invaluable asset for those of us who may be limited on time and require a wealth of information quickly," she said.

A website created for PiX-Syria supports an interagency transition-assistance response team in analyzing information on the U.S. government's response to the complex Syrian emergency, said Siudzinski.

"PiX-Syria has some of the best information on the region and is providing a platform in which people can easily share information," said Army Maj. J. Tyler Wilson, collection manager officer at CENTCOM-Forward Jordan.

For more information, contact NEAStrategicCommunications@nga.mil, NEAStrategicCommunications@nga.smil.mil, or NEAStrategicCommunications@nga.ic.gov ✦

NSG Expeditionary Activities releases latest outreach booklet

By Simmie A. Adams, NSG Expeditionary Activities

THE NATIONAL SYSTEM FOR GEOSPATIAL-Intelligence Expeditionary Activities released the latest version of its outreach booklet in December.

This is the third version of the NEA Outreach Booklet, which was first introduced in April 2013, to advertise available services to users in deployed areas and other austere environments, said Jay Driscoll, lead for NEA tactical operations.

NEA capability leads created the first version of the book and continually update it to keep pace with the constant evolution of NEA capabilities and services, said Driscoll. The NEA capabilities and services cataloged in the booklet are essential to warfighters in Afghanistan, who rely on agile and reliable access to GEOINT.

Through the NEA, the NSG community in Afghanistan has access to a wide range of capabilities and services, from same-day imagery and geospatial visualizations, to full-motion video and wide-area motion imagery, said David Bottom, NGA director of Information Technology

Services. It is important for the outreach booklet to remain current.

"The NEA previously relied on word of mouth to advertise its core services," said David Caener, NEA director. "Through the outreach booklet, NEA can now make known to users at the tactical level all its available capabilities and services."

NEA's endeavors help NGA meet two of its strategic objectives – broadening and deepening analysis, and making content available online and on-demand, said Bottom. NEA continues to expand online and on-demand GEOINT to the intelligence community and Department of Defense information technology enterprise through a global infrastructure and support. NEA's capabilities and services also improve the access, discovery and retrieval of

"Through the NEA, the NSG community in Afghanistan has access to a wide range of capabilities and services, from same-day imagery and geospatial visualizations, to full-motion video and wide-area motion imagery."

–David Bottom

data, and increase the availability of advanced analytic capabilities for the NSG community.

"NEA continues looking for the best ways to deliver GEOINT data and capabilities to warfighters worldwide," said Caener. "NEA is creating additional outreach booklets for the Southwest Asia Strategic Node, which is a NSG Forward data strategy providing GEOINT to the expeditionary user."

Customers with GEOINT online accounts can access this and other content at www.nga.mil. ✦



NGA deploys team to Washington state to assist FEMA in recovery efforts

By Erica Fouche, Office of Corporate Communications

THE NATIONAL GEOSPATIAL-Intelligence Agency deployed a small team of analysts to support the Federal Emergency Management Agency and state and local responders in recovery efforts following the March 22 mudslide and flooding which engulfed an entire square mile of Snohomish County, Wash.

Within hours of the disaster, NGA set up a disaster event Web page to provide NGA analysis and products and enable information sharing between first responders. Over the next several days, the agency provided access to commercial imagery collection. NGA analysts also developed disaster atlases that depict pre- and post-event imagery of the affected areas in Snohomish County.

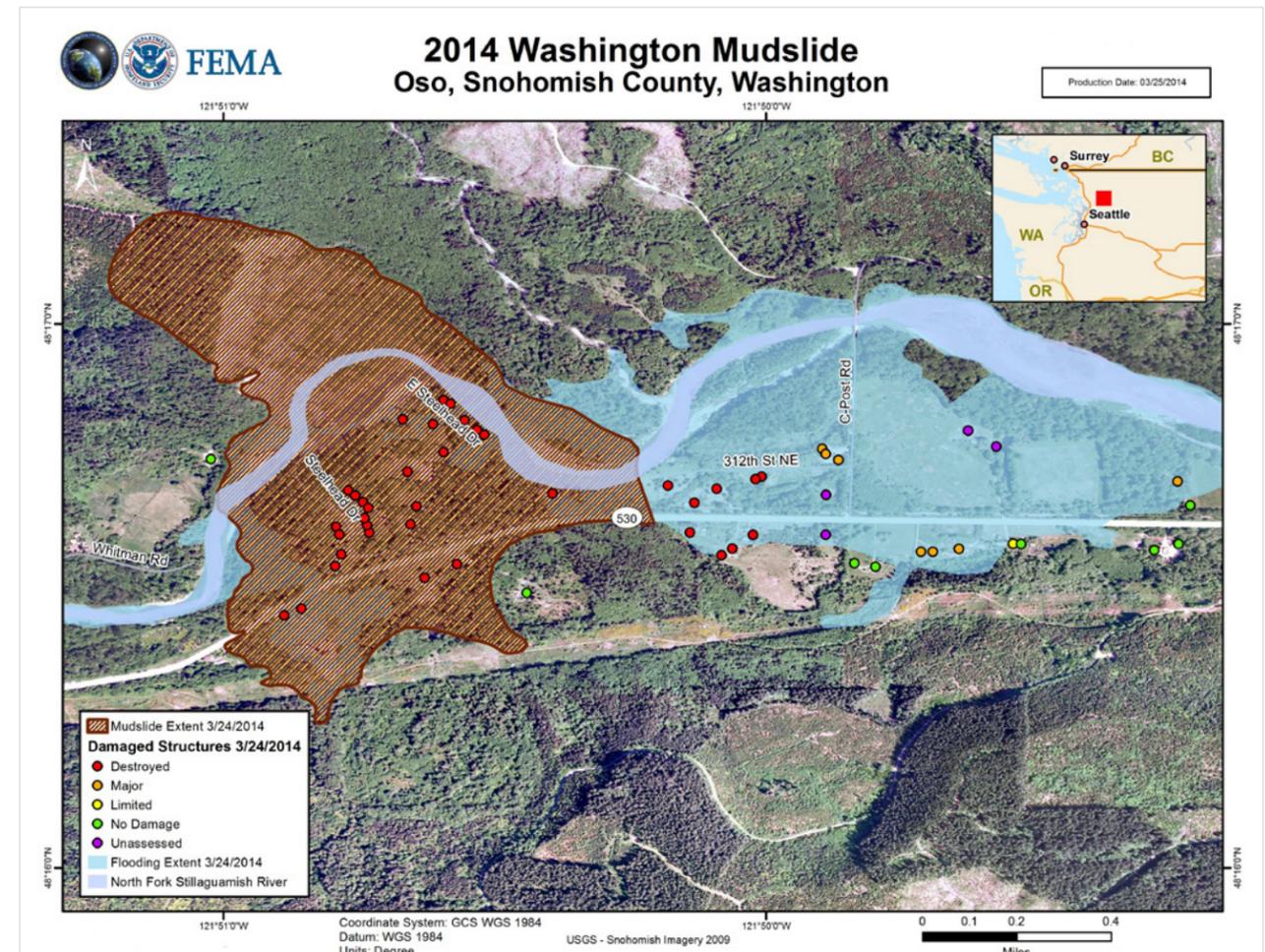
The deployed team provided on-site expertise to the FEMA

Incident Support Team, Urban Search and Rescue teams and other disaster response personnel. The support included depicting damage, providing structure assessments, elevation models, field mapping and analysis, refining search grids and recording field observations.

Imagery also was used to evaluate the actual location of the Stillaguamish River. Located about 55 miles northeast of Seattle, the river's path was rendered unrecognizable and potentially changed, due to the flooding. The mudslide forced the river to back up and flood the area until it began cutting a new channel. As the river tried to correct itself, it caused severe underground tunneling, making the recovery effort even more dangerous. ✦



Members of the Washington National Guard sift through the remains of the city of Oso, Wash., to provide closure for the community, March 31. Products and services provided by the National Geospatial-Intelligence Agency, like those below, play an important role in determining scope of damage and allowing responders to prioritize search areas. Photo by Army National Guard Spc. Sarah M. Booker



NGA damage assessment of mudslide area.

Reservists' value, flexibility enhance NGA mission capability

By Regina Galvin, Office of Corporate Communications
Photo by Tony Boone, Office of Corporate Communications

PROPOSED FY2015 BUDGET CUTS IN MILITARY spending underscore the imperative for the National Geospatial-Intelligence Agency to continue to operate as efficiently as possible.

In the current resource-challenged fiscal environment, the NGA Reserve program, via activated full-time reservists and drilling reservists assigned to NGA, provides cost-effective operational support and resource efficiencies for NGA offices, said Jessica Carter, Reserve NGA Support Team deputy chief.

“Reservists provide a powerful bang for the buck and greatly enhance operational capacity,” said Carter.

“Reservists are trained to be ready on a moment’s notice to execute high-priority, real-world missions,” she said. “They are most often on the forefront of their tradecraft due to relevant experiences in both their military and civilian capacities.”

NGA has about 100 reservists on activated full-time orders and about the same number of assigned Navy reservists and Army and Air Force Individual Mobilization Augmentees drilling in a traditional reserve capacity.

“Our activated full-time and traditional part-time reservists are integrated into key NGA missions throughout the organization,” said Carter. “They fulfill requirements in safety of navigation, full-motion-video analysis, source strategies, human geography missions, open source, and advanced analytic tradecrafts – just to name a few. Embedding reserve support into the total workforce and aligning respective missions to the highest priority NGA requirements helps to achieve optimal mission management.”

Air Force Tech Sgt. Daniel Garcilazo is a geospatial analyst who works in NGA’s Analysis directorate. Prior to working at NGA as a full-time reservist, Garcilazo served seven years on active duty, he said. He was deployed twice to Qatar and once to Italy.

“I bring a lot of tactical experience to the table,” said Garcilazo.

Garcilazo uses his experience to learn how things at the new job work – the techniques, tactics and procedures – then, works to find

ways to streamline products and become more efficient and proficient, he said.

“After a month or two here, I suggested a few things to reduce production time,” said Garcilazo. “From what my supervisor has told me, so far our production numbers are ahead of last year’s pace.”

Like his fellow reservists, Garcilazo brings an outside perspective to his KC.

Reservists who come to NGA on active duty orders for six or 12 months share a different perspective on procedures, products and analytic methods, said Garcilazo. The reservists come in eager to work and learn as much as they can.

Army 1st Lt. Michael Hornyak is a full-time reservist working in Cyber Command who brings a business approach to his work, he said.

“I come from the private sector,” said Hornyak. “I have a more bottom-line approach. The military throws a lot of money at things. I’ve worked for a (research and development) company. We don’t have unlimited funding in the private sector. I bring a business mentality of cost-effectiveness to my job.”

Christian Cintron is the special advisor for cyber integration and Hornyak’s supervisor. In addition to Hornyak, he manages one other reservist. Cintron said besides reservist’s outsider perspective gleaned from their civilian experience, he values the benefits that come with the uniform.

“Reservists have unique skill sets that we don’t normally get through contractors unless they are prior military,” said Cintron. “They engage immediately to improve processes. They’re a great augmentation to the work force and the costs are well below the equivalent expertise and capability we receive from contracting.”

“The great thing about reservists is the unique perspective and diversity of thought they bring to bear,” said Cintron. “They’re very versatile. It is often difficult to tell the difference between active duty, reservist, or civilian when it comes to their potential and mission impact.”

Reservists are an asset in terms of executing day-to-day decision making, and can do some things contractors legally cannot, said Cintron.

“For example, contractors can’t make a decision on behalf of the government, but reservists, as military members, can be representatives of the government. That’s beneficial.”

The operational experience is a driving factor for why many reservists hope for a full-time opportunity with the agency.

As beneficial as reservists are to the NGA workforce, the NGA experience is equally advantageous for a reservist, according to Navy Petty Officer 1st Class Julio Rodriguez.

Rodriguez, an intelligence specialist, is currently working at NGA in a full-time, eight-month position as an imagery analyst. Rodriguez had been previously supporting NGA as a drilling reservist, he said.

“I was happy to get the opportunity to support NGA full time,” said Rodriguez.

In his time as a drilling reservist, he would work one weekend a month for eight to nine hours each day he said.

“The work was very task oriented,” said Rodriguez. “There was great communication of what they needed done. In my full-time position I’m having a long-lasting impact. I’m able to support NGA in an area where they are lacking personnel. With my intel experience – I have worked with many different ‘INTs – I’ve been able to enhance the work I’m doing here and help bring the big picture together. I’m able to fully support the people I work with, and they are very supportive of me.”

“Embedding reserve support into the total workforce and aligning respective missions to the highest priority NGA requirements helps to achieve optimal mission management.”

–Jessica Carter



Navy Reserve Lt. Cmdr. Jarrod Trujillo and Jessica Carter discuss the details of a project at NGA’s Springfield, Va. campus. Carter, the deputy chief of the Reserve NGA Support Team, has a lot of praise for the versatility reservists bring to the agency.

GEOINTERESTING



THE RED PLANET
 Power to the people, or aliens, whatever. A space-funding company is hoping that selling the naming rights of the 500,000 craters for as low as \$5 will yield enough to fund grants in space exploration, research and education. The "People's Map of Mars" won't be sanctioned by the International Astronomical Union, the official body authorized to select names for celestial bodies, but a nonprofit aiming to land four astronauts on Mars in 2025 plans to use the map to navigate the Red Planet.

WWW.SPACE.COM



ATLANTIC OCEAN
 Cue the Kenny Loggins music, populations of leatherback turtles are swimming the underwater highway to nine danger zones in the Atlantic Ocean. Satellite data collected over a period of 10 years revealed where the turtles are most vulnerable to unintended capture by fisherman. Researchers hope to incorporate this data into future maps and create predictive tools to assist fisherman in determining where to fish.

WWW.NATURE.COM



DENMARK
 Think of it as a time-out room for satellite interference. The radio frequency anechoic chamber at the Technical University of Denmark is one of the European Space Agency's first stops when it comes to calibrating satellite antennas. Buffered by a steel Faraday cage to block out interference and foam pyramids to keep radio waves from bouncing around the room, engineers have an almost perfect environment to measure signals coming directly from the antenna and make adjustments.

WWW.POPSCI.COM



CENTRAL TURKEY
 Is that 9,000-year-old interior design or world's oldest map? Archaeologists are debating whether a mural at the ancient Catalhoyuk settlement depicts a leopard skin or an erupting volcano. Aiming to prove the latter, a team of researchers collected samples from the volcano allegedly depicted in the painting and proved an eruption did occur 9,000 years ago. While the debate continues, this scientific proof is encouraging to those interpreting the mural as a depiction of the volcano created during a period thousands of years before other accepted maps.

WWW.NPR.ORG



QUEENSLAND, AUSTRALIA
 Police in Queensland are using a handheld mapping scanner, previously used to map the interior of the Leaning Tower of Pisa, to create 3-D diagrams of crime scenes. This technology has the potential to save time. 3-D maps can be generated in 20 minutes, reduce crime scene contamination and provide access to hard-to-reach areas. CSI: Laser Mapping?

WWW.WIRED.CO.UK.COM



YUCATAN PENINSULA, MEXICO
 File under "things that are surprisingly easy to miss." An asteroid crashed off the eastern coast of Mexico 65 million years ago, causing the extinction of the dinosaurs. The resulting crater – about 100 miles across – was buried under debris and marine sediment, rendering it nearly invisible. Researchers used multi-beam sonars to examine an immense underwater cliff, comparable to the Grand Canyon, in the Gulf of Mexico and created the first detailed map of the area. They hope that analysis of the sedimentary rock layers will yield clues about this massive impact event.

WWW.MBARI.ORG



GRAND CANYON
 Rollin' on the river. In its first 360-degree image of a U.S. river, Google Street View, partnered with the American Rivers advocacy group, brought 300 miles of whitewater rapids and remote canyons along the Colorado River to armchair rafters. This is a cost-effective alternative to in-person trips down the river, which can cost up to \$3,000 and are only available through a highly competitive lottery system. However, American Rivers hopes the true value comes from encouraging interest in the river's preservation.

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Map is for illustrative purposes only.



Maj. Adela Riek Scharr's nephew Jack Scharr and niece Peg Scharr Tebo, NGA Director Letitia A. Long, St. Louis Mayor Francis Slay, and Fran Early, deputy director of Source, cut the ribbon to the new room at the NCW Conference Center.

St. Louis conference room named for pioneering female pilot

By Jessica Daues, Office of Corporate Communications

Photo by Kevin Clark, Office of Communications

THE NATIONAL GEOSPATIAL-INTELLIGENCE

Agency dedicated a conference room at its St. Louis campus Feb. 12 in honor of a St. Louis native and pilot with the World War II-era Women Airforce Service Pilots, or WASPs.

NGA's dedication of the Maj. Adela Riek Scharr-WASP Conference Room is part of the military appreciation and partnership program managed by the agency's Aeronautical Navigation Office and contains photographs and artwork featuring Scharr and other WASP members.

By recognizing the accomplishments of Scharr and the WASPs, NGA honors some of our best and bravest Americans, said James Samuel, national geospatial-intelligence officer for aeronautical issues.

"Maj. Adela Riek Scharr was a true American patriot and servant leader," said Samuel. "Her demonstrated excellence, determination, strength of character, and unrelenting desire to serve her country are the very attributes to which we all aspire as public servants.

Scharr was also the first female commercial pilot, first female ground instructor and first female flight instructor at the city's Lambert Field.

NGA director Letitia A. Long and St. Louis mayor, Francis Slay joined members of Scharr's family at the ceremony. Members of the St. Louis Ninety-Nines, an organization of women pilots Scharr helped establish, also attended.



Maj. Adela Riek Scharr courtesy of Texas Women's University

"Maj. Scharr is the personification of our NGA core values, and she is a role model for us all," Samuel said. "Her leadership, sacrifices and accomplishments opened many doors for other Americans to contribute their gifts and talents to our national efforts, which is the entire point of diversity and inclusion."

In 2009, Congress passed legislation awarding WASP pilots the Congressional Gold Medal, one of the nation's highest honors.

For more information on the WASP pilots, visit the Texas Women's University WASP Archive website at <http://twu.edu/library/wasp.asp>.



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NGA inducts four GEOINT pioneers into Hall of Fame

By Kristen Mackey and Jason Moll, Office of Corporate Communications

Photo by Kevin Clark, Office of Corporate Communications

THE NATIONAL GEOSPATIAL-Intelligence Agency inducted four members into its Hall of Fame in a May 6 ceremony in the William Allder Auditorium at the agency's headquarters in Springfield, Va.

Steven C. Hall, Raymond J. Helmering, Ph.D., Marie Tharp and Steven P. Wallach were added to the list of members in the hall of fame, which formed in 2001 and now has 55 members.

"The NGA Hall of Fame is our way of honoring the women and men that helped build this agency on a foundation of leadership, integrity and ingenuity," said NGA Director Letitia A. Long, who hosted the induction ceremony.

Hall and Wallach attended the ceremony in Springfield, and Helmering participated via a video in which Deputy Chief Operating Officer-West Ed Donaldson presented him with his citation and plaque. Fiona Schiano-Yacopino, a representative from Marie Tharp Maps, also attended the Springfield ceremony and accepted the award on behalf of Tharp, who died in 2006.

Members of the agency's hall of fame are selected for their significant accomplishments at NGA or one of the agency's predecessor organizations. Criteria include: accomplishments that helped transform NGA operations; legacy of leadership that exemplifies NGA's tradition and core values; technological or analytical improvements that helped improve U.S. government GEOINT operations; provision of GEOINT that enabled the country to resolve a national security crisis; other support or sacrifices that personified or enhanced the NGA mission.

Three of the inductees were nominated by the NGA Alumni Association, said Katy Smith, NGAA chairwoman.

"These inductees exemplify the history of technical leadership and accomplishment that has provided the foundation for today's GEOINT capabilities," said Smith. "NGAA was very pleased to be able to contribute to this year's nomination process." ✨

NEWEST NGA HALL OF FAME INDUCTEES

Marie Tharp



Her production of the first map of the planet's ocean floors established the late Marie Tharp as a pioneer in the fields of bathymetry and marine cartography. Her work was an immense contribution to our knowledge and understanding of one of the last great frontiers of geography and science.

Raymond J. Helmering



Raymond J. Helmering helped develop and implement the revolutionary photogrammetry solutions that underlie the digital geospatial products and information NGA uses. Helmering also provided technical leadership of the lunar Apollo mapping project sponsored by NASA. The multi-year program generated the most precise lunar maps ever produced at the time.

Steven C. Hall



Steven C. Hall helped lead the effort to digitize NGA's maritime safety of navigation charts and publications. His leadership and direction helped the agency seamlessly meet warfighters' needs for digital data in the field and transform agency operations forever.

Steven P. Wallach



Steven P. Wallach had a long and distinguished career providing geospatial intelligence to partners in the defense and intelligence communities and civil realm. Wallach led a study that sparked the effort to map 80 percent of the Earth's surface in collaboration with NASA.

NGA alumni visit NCE

Office of Corporate Communications

Photo by Tony Boone, Office of Corporate Communications



NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY DIRECTOR LETITIA A.

Long speaks to a group of about 40 former employees and members of the National Geospatial-Intelligence Alumni Association, or NGAA, during the group's spring seminar May 6 at the agency's Springfield, Virginia, headquarters.

NGA hosted the event and briefed attendees on activity-based intelligence, the Intelligence Community Information Technology Enterprise, or IC ITE, and the some of the agency's biggest science and technology challenges.

"I'm very excited about where we are, (and) I'm very excited about where we're going," said Long, who thanked the alumni for their service and the work they did that contributed to the agency's current successes.

All current and former NGA employees are eligible to join NGAA. For more information, visit www.ngaalumni.org ✨



WWW.NGAALUMNI.ORG

NGA scientist receives presidential early career award

JOEANNA ARTHUR, PH.D. IS A NATIONAL GEOSPATIAL-Intelligence Agency project scientist who was among 102 science and engineering professionals awarded the Presidential Early Career Award for Science and Engineers April 14 in a ceremony at the U.S. Department of Agriculture's Jefferson Auditorium in Washington.

Arthur received the award, the highest bestowed by the federal government on science and engineering professionals in the early stages of their independent research careers, for her efforts within the NGA science and technology directorate where she applies advanced vision science and cognitive neuroscience to develop tools and methodologies that can improve analysts' performance.

"We use cognitive and imagery-based factors to validate the reliability of analytic standards, and we verify whether work processes such as new technology, methodology or training will or will not improve the analysts' performance," said Arthur.

Arthur's project called "Enhancing Analyst Machine Interaction," which involves multimodal human-to-computer interfaces, can potentially transform analyst and machine interaction, and her "Spatial Interface Lab" is being developed to provide NGA an in-house test bed for methods of interaction with massive, multi-source, and multi-dimensional data. Both were part of many criteria that led to her selection by the White House.

The award reflects the priority the administration and NGA place on producing outstanding scientists and engineers to advance the nation's goals in national security and the economy.

For more information, visit us online at www.nga.mil, on Facebook at www.facebook.com/NatlGEOINTAgency or on Twitter at https://twitter.com/nga_GEOINT.



Photo by Kevin Clark, Office of Corporate Communications



I am INGA

National Geospatial-Intelligence Agency

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