



# NPS IN THE NEWS

## Weekly Media Report – Mar. 2-8, 2021

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### EDUCATION:

1. [NPS, Lawrence Livermore National Laboratory Expand Collaboration on Applied Research, Education](#)

*(Navy.mil 3 Mar 21)* ... Mass Communication Specialist 2nd Class Nathan K Serpico

*(NPS.edu 3 Mar 21)* ... Mass Communication Specialist 2nd Class Nathan K Serpico

Conducting applied research to strengthen national defense is something the Naval Postgraduate School (NPS) and Lawrence Livermore National Laboratory (LLNL) have in common. Building upon a long history of collaboration between the two institutions, NPS and LLNL have fortified their mutual collaboration by entering a Memorandum of Understanding (MoU) that establishes a cooperative framework to advance the academic and scientific capabilities of the two institutions as they address future national defense challenges.

2. [Reserve Operations Analysts Bring the Science to Navy Decision Making](#)

*(DVIDS 1 Mar 21)*

Great Power Competition is the name of the game, and how to optimize the delivery of combat power against a near-peer adversary is what Lt. Cmdr Kirsten Davis is helping the Navy achieve... The **Naval Postgraduate School** defines operations analysis as “the development and application of mathematical models, statistical analyses, simulations, analytical reasoning and common sense to the understanding and improvement of real-world operations.” In essence, OAs transform data into information, and information into solutions that empower decision-makers to solve problems from saving money in acquisitions to saving lives in combat.

3. [Air Force ROTC cadet becomes first Trojan to be selected for weather post](#)

*(Troy Today 8 Mar 21)*

Troy University’s Air Force ROTC Detachment 017 has recorded another “first” with the selection of Cadet Col. Camryn Mote as a Weather Officer for the Air Force.

Mote will graduate and commission in the Air Force in May and will be sent to the **Naval Postgraduate School’s** Basic Meteorology Program, one of the leading meteorology programs in the country. There, she will earn a certificate in meteorology under World Meteorological Organization requirements for practicing professional meteorologists.

### RESEARCH:

4. [Naval Postgraduate School and Xerox Collaborate to Advance Additive Manufacturing Solutions](#)

*(Navy.mil 1 Mar 21)* ... Matthew Schehl

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In January 2021, the Department of Defense published its first-ever Additive Manufacturing Strategy to “provide a shared set of guiding principles and a framework for [additive manufacturing] technology development and transition to support modernization and Warfighter readiness” across the military.



## **5. [Seapower Conversation: NPS Hosts Discussion with Tri-Service Maritime Strategy Authors](#)**

*(Navy.mil 2 Mar 21)* ... Matthew Schehl

*(NPS.edu 2 Mar 21)* ... Matthew Schehl

Naval Postgraduate School (NPS) students and faculty recently had the opportunity to directly engage the primary architects of the nation's newly-published Tri-Service Maritime Strategy "Advantage at Sea: Prevailing with Integrated All-Domain Naval Power," gaining first-hand insight into the sea services' new strategic direction.

## **6. [The Apache Software Foundation Announces Apache® Daffodil™ as a Top-Level Project](#)**

*(Globe News Wire 4 Mar 21)*

Open Source universal data interchange implementation of the Data Format Description Language (DFDL) standard in use at DARPA, GE Research, **Naval Postgraduate School**, Owl Cyber Defense, Perspecta Labs, and Raytheon BBN Technologies, among others.

## **7. [Apache Daffodil now ASF top-level project](#)**

*(SD Times 5 Mar 21)* ... Jakub Lewkowicz

The Apache Software Foundation (ASF) announced Apache Daffodil is now a top-level project, which means that the project's community and products have been well-governed under the Apache Software Foundation's meritocratic process and principles. Daffodil is an open source implementation of the Data Format Description Language (DFDL) 1.0, and aims to provide universal data interchange... Daffodil is currently in use at many large organizations such as DARPA, GE Research, **Naval Postgraduate School**, Owl Cyber Defense, Perspecta Labs, and Raytheon BBN Technologies, among others.

## **COMMENTARY:**

### **8. [President Biden needs a 'Devil's Advocate'](#)**

*(The Hill 4 Mar 21)* ... H.R. McMaster and Zachary Shore

Most of President Biden's top-level appointees have been quickly confirmed by the Senate. It is clear that all will be loyal team players. But the president also needs the opposite... Zachary Shore is a professor of national security affairs at the **Naval Postgraduate School**, a senior fellow at UC Berkeley's Institute of European Studies and a visiting fellow at Stanford's Hoover Institution. He is the author of "Blunder: Why Smart People Make Bad Decisions" (2016).

### **9. [Foreign Correspondent: Biden's Bombing of Syria Is a Dangerous Step Backward](#)**

*(The Progressive 4 Mar 21)* ... Reese Erlich

For the first time, the Biden Administration ordered a cross-border military attack in the Middle East... James A. Russell, associate professor at the **Naval Postgraduate School**, Monterey, tells me this policy of retaliation hadn't worked for Obama or Trump, and Biden won't do any better. (He stresses that his views are his own, not necessarily those of the Navy Postgraduate School.)

## **FACULTY:**

### **10. [Brunswick Corporation Expands Autonomy Solutions; Appoints Marine Autonomy Technology Lead](#)**

*(Globe News Wire 1 Mar 21)*

Brunswick Corporation (NYSE: BC) continues to build on its ACES (Autonomy, Connectivity, Electrification & Shared Access) strategy to develop solutions to further improve boater experiences by advancing the efficiency and capabilities of its core product lines. In support of this effort, the Company has announced that Jason Arbuckle has been promoted to a newly formed role of Marine Autonomy Technology Lead. This new strategic position will enable the Enterprise to lead the delivery of highly automated-to-autonomous solutions for the recreational marine industry... Jason has a BS, MS and Ph.D. in Electrical Engineering from Michigan Technological University and contributes his time and talent to students entering the field at the **Naval Postgraduate School**, the US Navy, MIT providing guidance on their Philos autonomous vessel, as well as, student SAE projects at UW Madison.

## **11. Iran Conducts Major Wave of Executions and Shootings of Ethnic Minorities**

*(FDD 4 Mar 21) ... Brenda Shaffer*

Tehran has killed dozens of members of Iran's ethnic minorities in recent weeks, especially among Iran's Baluch and Ahwazi Arab communities. Ethnic minorities are increasingly conducting anti-regime activity, and the wave of demonstrations over the last three years has been centered in provinces where minorities are numerous... Brenda Shaffer is a senior advisor for energy at the Foundation for Defense of Democracies (FDD), where she also contributes to FDD's Iran Program. She is also a faculty member at the U.S. **Naval Postgraduate School**. For more analysis from Brenda and the Iran Program, please subscribe [HERE](#). Follow Brenda on Twitter @ProfBShaffer. Follow FDD on Twitter @FDD and @FDD\_Iran. FDD is a Washington, DC-based, nonpartisan research institute focusing on national security and foreign policy.

## **12. Armenia's nuclear power plant is dangerous. Time to close it.**

*(The Bulletin 5 Mar 21) ... Brenda Shaffer*

In late 2020, the Armenian government announced that its Metsamor nuclear power plant would close for five months in 2021 to attempt significant upgrades. Soon after, the EU urged Armenia to make the closure permanent since the plant "cannot be updated to fully meet internationally accepted safety standards." A major nuclear or radiation accident at Metsamor would not only affect the people of Armenia, but citizens in neighboring Turkey, Georgia, Azerbaijan, Iran, Russia, and southern Europe. Besides, Armenia can meet its energy needs without Metsamor's output, especially as it exports to Iran over half of the plant's electricity. Further, thermal plants and renewable sources could replace what is used domestically. Metsamor does not even help Armenia achieve its declared goal of energy independence, as Russia-Armenia's main energy supplier-provides the country with most of its natural gas, along with nuclear fuel and specialized technicians for the plant. But none of these arguments have swayed Armenia to close Metsamor in the past... Brenda Shaffer is an international energy and foreign policy specialist and faculty member of the U.S. **Naval Postgraduate School**. She also is a Senior Advisor for Energy at the Foundation for Defense of Democracies think tank and a Senior Fellow at the Atlantic Council's Global Energy Center in Washington, DC. She tweets at @ProfBShaffer.

## **ALUMNI:**

### **13. No Woman Need Apply**

*(Salt Lake City Weekly 3 Mar 21) ... Christopher Smart*

The executive team at the Salt Lake City Fire Department is a good old boys club and Martha Ellis didn't fit in. When push came to shove, there was no one at City Hall to protect her from trumped up allegations... Ellis holds a master's degree in homeland security from the **Naval Postgraduate School** and has a graduate certificate in conflict resolution and mediation from the University of Utah. She also was one of four recipients of the Harvard Kennedy School of Government fire service fellowship awards in 2012...

### **14. Richard Giusti selected as Fire Chief for the City of Bryan**

*(KXXV 8 Mar 21) ... Joel Leal*

The City of Bryan Fire Department has named Richard Giusti as their next Fire Chief... Giusti holds a Master of Arts degree in Homeland Security from the **Naval Postgraduate School** Center for Homeland Defense and Security, a Bachelor of Arts degree in Disaster and Emergency Management from American Military University, and two Associate of Applied Science degrees in Fire Science and Instructor of Technology and Military Science from the Community College of the Air Force.

### **15. Naval Surface Warfare Center, Port Hueneme Division Department Officer Reflects on Progress During Women's History Month**

*(NAVSEA 7 Mar 21) ... Esmi Careaga*

Cmdr. Birute Jurjonas, Ship Defense and Expeditionary Warfare Department officer at NSWC Port Hueneme Division, grew up in Chicago, where she attended the Illinois Institute of Technology. In 2002, while pursuing a Bachelor of Science in electrical engineering, she connected with a U.S. Navy recruiter who helped spark her interest in the Nuclear Propulsion Officer Candidate Program... In 2007, she earned a Master of Science in engineering management from Old Dominion University in Norfolk, Virginia, and in 2012, a Master of Science in electrical engineering from the **Naval Postgraduate School** in Monterey, California. In 2018, Jurjonas joined NSWC Port Hueneme Division as the command's S Department officer, a role in which she is responsible for in-



service engineering, test and evaluation and integrated product support for ship defense systems, surveillance radars and underway replenishment.

## **HOUSING:**

### **16. [Two military families sue over mold in base housing at Naval Postgraduate School](#)**

*(Stars and Stripes 5 Mar 21) ... Rose L. Thayer*

*(Military.com 7 Mar 21) ... Rose L. Thayer*

Two military families are suing several private housing companies because the homes that they rented at the Naval Postgraduate School in Monterey, Calif., contained mold that sickened their children and ruined their personal belongings.

## **UPCOMING NEWS & EVENTS:**

**March 26:** [Winter Quarter Virtual Graduation Ceremony](#)



## EDUCATION:

### **NPS, Lawrence Livermore National Laboratory Expand Collaboration on Applied Research, Education**

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Conducting applied research to strengthen national defense is something the Naval Postgraduate School (NPS) and Lawrence Livermore National Laboratory (LLNL) have in common. Building upon a long history of collaboration between the two institutions, NPS and LLNL have fortified their mutual collaboration by entering a Memorandum of Understanding (MoU) that establishes a cooperative framework to advance the academic and scientific capabilities of the two institutions as they address future national defense challenges.

With overlapping and complementary areas in research and application – enhanced by a geographic proximity of less than 100 miles – both institutions are in a position to provide enhanced and sustainable education and research benefits for NPS students and LLNL employees.

According to the MOU, LLNL intends to provide interested NPS faculty, staff and students broader access to educational courses offered by institutions that partner with the national lab, and more opportunities for NPS faculty and students to work with scientists and researchers at LLNL.

“Lawrence Livermore National Laboratory is one of the premier institutions in the U.S. National Laboratory complex,” said NPS President retired Vice Adm. Ann Rondeau. “Our now formalized partnership between NPS and LLNL is intended to further strengthen the historic ties between our two institutions. Dozens of NPS master and Ph.D. students have completed their dissertation and thesis research in close collaboration with LLNL, and now, we have a firm foundation for collectively enhancing our applied research and education that will help solve the toughest naval and national challenges.”

Paralleled with NPS having broader access to Lawrence Livermore’s resources, the university will coordinate hybrid in-residence and distance learning master and Ph.D. programs for LLNL employees.

“This new agreement will strengthen and expand upon the research collaborations between our two institutions,” said NPS Dean on Research Dr. Jeff Paduan. “It recognizes the great technical capabilities within the laboratory, and the great benefits of involving our defense-focused faculty and operationally-experienced students in joint projects. We all look forward to creating and executing more of these projects.”

Dr. Craig Smith, NPS Research Professor of Physics who assisted in the MOU’s development, says NPS students who have the opportunity to participate in research at LLNL will benefit greatly from those experiences.

“LLNL has important mission drivers related to national security and defense,” noted Smith. “The involvement of NPS students and faculty in research initiatives in these areas bring to LLNL a unique base of first-hand experience and military perspectives that can contribute significantly to the resulting research. Also, the potential for LLNL employees to participate in NPS academic programs and the enhanced level of communications between LLNL staff and NPS students and faculty are also important factors in making this partnership more effective.”

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## Reserve Operations Analysts Bring the Science to Navy Decision Making

*(DVIDS 1 Mar 21)*

Great Power Competition is the name of the game, and how to optimize the delivery of combat power against a near-peer adversary is what Lt. Cmdr Kirsten Davis is helping the Navy achieve.

Davis is one of a small but growing cadre of qualified Operations Analysts (OA) in the Navy Reserve. She brings significant academic skills and operational experience to the Chief of Naval Operations (OPNAV) N81, Assessments Division, analyzing the feasibility of reloading the Navy's Vertical Launch System at sea — a revolutionary capability that would greatly increase the Navy's forward deployed maritime strike capability.

The practical skills of OAs can be applied to an almost unlimited range of problems, and the Navy Reserve's qualified OAs come from a diversity of academic preparation, civilian experience and designators.

For Davis, her studies at the U.S. Naval academy and as a graduate student at the University of Delaware shaped her future as a Navy Reserve OA. "I was impressed by how vital this work is across all fields of study," Davis said. "I wanted to be able to model and solve big picture problems to help make well-informed decisions."

Reserve OAs are assigned to Reserve units in fleet concentration areas and within staffs at Type Commands and System Commands where they can apply their skills to some of the Navy's most important problems. However, the heart of the Navy Reserve OA capability resides within OPNAV N81 in Washington, DC, where Davis is making a difference.

Vice Adm. John Mustin, Chief of Navy Reserve, has made clear that his number one priority is warfighting readiness. So, how does operations analysis support warfighting readiness? The answer is that it is critical. While the term may invoke images of scientists sitting behind computers, far removed from warfighting functions, this image is misleading. Operations analysis informs decision-making across the spectrum of conflict.

Modern naval operations are becoming increasingly complex, more reliant on technology, and especially more reliant on large amounts of data that must be rapidly consumed and analyzed to inform critical decision making. The Chief of Naval Operations' Design 2.0 "Strengthening Naval Power From The Sea" line of effort requires that the Navy "Establish data-driven decisions as a foundation for achieving readiness in our warfighting enterprises." Quantitative, data-driven analysis is critical to good decision making and it is trained OAs that bring this capability to the fleet.

As the Director of N81, Rear Adm. Marc Dalton is the Navy's operations research and analysis capability resource sponsor.

"N81 is fully aligned with the CNO's vision and guidance, providing analytic support to inform timely decisions on developing and implementing the way ahead," said Dalton. "To that end, we continue to champion increased operational analysis capacity and capability throughout the fleet and from the total force — our DoD civilians, contractors and of course our uniformed personnel — both active duty and Reserve."

To that end, both the active and Reserve OA community managers reside within N81 and are actively working to grow the Total Force OA capacity.

The **Naval Postgraduate School** defines operations analysis as "the development and application of mathematical models, statistical analyses, simulations, analytical reasoning and common sense to the understanding and improvement of real-world operations." In essence, OAs transform data into information, and information into solutions that empower decision-makers to solve problems from saving money in acquisitions to saving lives in combat.

Solving complex challenges is at the heart of what the Navy's OA community is focused on.

These challenges range from informing decisions by leaders in the Pentagon regarding force development and force generation, to helping fleet commanders plan force employment to optimize the delivery of combat power. Due to the rapidly changing nature of modern Great Power Competition, the need for robust, quantitative, data-driven decision making has never been clearer. Future wars will be won as much behind the keyboard as they will be at the end of the barrel. In fact, victory in conflict is often as



much the result of good decisions made long before the start of conflict as it is in real-time decision making. Good operations analysis is critical to both.

Like much of our modern military capabilities and practices, operations analysis matured as a capability during WWII. Its first real application was to the employment and operation of early-warning radar systems. British scientists working at the Bawdsey Research Station revealed a number of previously unknown limitations of the radar network and then devised solutions for mitigating them.

Later, operations research divisions would be established within the Royal Air Force and the Royal Navy. They solved critical problems related to Britain's air defense capability and contributed significantly to the evolution of anti-submarine warfare tactics. Operations researchers also played important roles in optimizing the planning and execution of the strategic bombing campaign and in support of the Army's massive logistics operations. Training and fielding OAs today will be equally essential to solving the important problems critical to success in tomorrow's conflicts.

Early OAs were largely just mathematicians applying their knowledge and skills to operations problems. Today, there are a number of academic institutions that have developed programs designed specifically to train OAs and researchers. The Navy's OA curriculum was established in 1951 and the **Naval Postgraduate School** is the principal place from which the Navy's OAs matriculate. However, there are a growing number of civilian institutions offering similar curricula to meet the demands of industry and government

While modern operations analysis is still highly dependent upon rigorous mathematical methods, the advance of knowledge and technology has provided OAs with access to new tools and methods that help address the complexity and scope of modern challenges. Today's OAs include data analysts, statisticians, wargamers, mathematical modelers, system engineers, computer programmers, cost and risk analysts, and human system integration scientists. The Reserve force consists of a rich and diverse group of people who have significant civilian experience in many of these disciplines. The OA community is the ideal place to bring those skills to bear on the Navy's most complex challenges.

OPNAV N81 serves as the central hub of the Navy's military and civilian OA professionals with the Assessments Division's stated mission to "Provide timely, relevant and trusted analysis to support Navy decisions, including the requirements and programming needed to maximize naval power and win in combat." N81, along with its identified analytic leads at selected fleet commands are working hand-in-hand to drive increased operations analysis capacity and capability throughout the fleet. The division is supported directly by the Reserve force through the OPNAV Capabilities and Assessments Reserve unit. This unit consist of 29 officers who are providing direct support to the Navy's analytic agenda. Members are utilizing their military and civilian skillsets in direct support of N81's ongoing study activities. Some of these activities include:

Future naval force study and follow-on assessments in support of force structure and shipbuilding plan decisions

Campaign analysis — excursions for Western Pacific Great Power Competition scenario

Integrated hard-kill — soft-kill analysis for defeating threat missile kill chains

Analysis of causes of maintenance delays relative to funding and manpower

Analysis in support of Distributed Maritime Operations Concept of Operations (CONOPS) development

Navy senior leaders have recognized the importance of improving our decision-making processes and Dalton sees the Reserve playing an important part of that improvement.

"Reservists offer a unique perspective stemming from multiple industries in the civilian sector," Dalton said. "The wide-range of analytic practices that our Reservists experience, when applied to the defense sector, can only serve to increase data literacy and improve the use of analysis throughout the Navy."

Additionally, as the community continues to grow and mature, Dalton sees that increasing capacity and improving capability along with expanding the awareness of its potential and impact, increased promotion and billet opportunities will follow.

Accelerating the growth of our OA community and the Navy's decision-making process is a priority in achieving the CNO's Design 2.0 vision and the Navy Reserve is answering the call by building a managed community of OA professionals. If you have operations analysis experience in your civilian or



military jobs and want to apply your skills to some of the Navy's biggest challenges, then the OA community invites you to join. Any Navy Reserve officer interested in joining the community or pursuing qualification as an Operations Analyst can contact the Reserve OA Community Manager, Lt. Cmdr. Kate Ortman at [kathleen.ortman@navy.mil](mailto:kathleen.ortman@navy.mil), or visit the OA Community page on the Navy Reserve Homeport at [myNRH | Navy Reserve Homeport](http://myNRH|NavyReserveHomeport).

[DVIDS - News - Reserve Operations Analysts Bring the Science to Navy Decision Making \(dvidshub.net\)](#)

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## **Air Force ROTC cadet becomes first Trojan to be selected for weather post**

*(Troy Today 8 Mar 21)*

Troy University's Air Force ROTC Detachment 017 has recorded another "first" with the selection of Cadet Col. Camryn Mote as a Weather Officer for the Air Force.

Mote will graduate and commission in the Air Force in May and will be sent to the **Naval Postgraduate School's** Basic Meteorology Program, one of the leading meteorology programs in the country. There, she will earn a certificate in meteorology under World Meteorological Organization requirements for practicing professional meteorologists.

A chemistry major, Mote didn't expect the Air Force was going to need her in meteorology. Force Support was her first choice, but the Air Force had recently opened up the career to other STEM-related degrees.

"I was shocked at being selected and since then, I have done a lot of research and I'm excited to start training," Mote said. "The Air Force is in need of meteorologists."

Detachment commander Lt. Col. Stephen Cox said that because of the specific educational requirements of the field, the Air Force was "opening up the aperture" to allow about 40 percent of those in the career field to have different educational backgrounds such as mathematics, computer science, computational science and physical science.

"This is another first for Det 017 and an example of how the Air Force is getting after the manning problem with certain career fields," Cox said. "With her chemistry degree, Cadet Mote has proven she has the aptitude and ability to excel in a difficult Technical degree program. This will be a great foundation for her to build upon as USAF looks to her to fill critically manned positions like Weather and Environmental Sciences Officer. Unique problems require innovative solutions and create opportunities like this for not only Cadet Mote but also other AFROTC Cadets and Troy Students."

A Geneva native, Mote transferred to TROY from the University of Alabama at Birmingham in Fall 2019.

"I've had a great experience at TROY in my short time here. I love that it is such a small community – and small class sizes. There is always someone there to help when you need it," she said.

Mote has been in Air Force ROTC all four years of her college career, but still said there was some trepidation when it came time to transfer.

"I was nervous about transferring schools my junior year because most people already have their group of friends and I would be the 'new person' and not know anyone," she said. "I was so wrong."

From her first ROTC day, she was adopted right into the fold.

She held the posts of recruiting officer, field training prep flight commander, training group squadron commander and, currently, is serving as inspector general.

"I made so many friends and since then have formed so many friendships with other cadets. When they say you're part of a family in ROTC, they really mean it," Mote said.

[Air Force ROTC cadet becomes first Trojan to be selected for weather post - Troy Today](#)

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## RESEARCH:

### Naval Postgraduate School and Xerox Collaborate to Advance Additive Manufacturing Solutions

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In January 2021, the Department of Defense published its first-ever Additive Manufacturing Strategy to “provide a shared set of guiding principles and a framework for [additive manufacturing] technology development and transition to support modernization and Warfighter readiness” across the military.

Additive manufacturing (AM) – more commonly known as 3D printing – is the computer-controlled process of creating three-dimensional objects by “printing” material, layer upon layer, to build up an item to the finest of detail. Whether creating a child’s toy or a sophisticated machine part, it is economical and efficient, employing a minimum of resources with a minimum of labor and time.

The versatile technology has already significantly impacted industrial production as the world shifts from analogue to digital technology, and is increasingly being seen across the Department of Defense (DOD) as a powerful and versatile tool providing technical advantages across a range of defense applications.

Already working on this, NPS recently established the Center for Additive Manufacturing (CAM), a campus-wide collaborative effort to coordinate research and advance 3D technology. Under the umbrella of CAM’s Naval Additive Manufacturing Enterprise 2030 (NAME 2030) initiative, NPS explores every aspect of additive technology and the possibilities it presents the Navy.

One of the most promising of these is to better allow the supply of forward-deployed forces.

A key element of NPS’ applied research in this area is the recently launched strategic collaboration between Xerox and NPS focused on AM research, which has the potential to dramatically transform the way the military supplies forward-deployed forces.

As part of a Collaborative Research and Development Agreement (CRADA), NPS was the first to receive an installation of the Xerox® ElemX™ Liquid Metal Printer on the university campus in December. The new ElemX will provide NPS faculty and students hands-on exploration of new ways the technology can deliver on-demand 3D printing of metal parts and equipment from ship or shore, anytime or anywhere.

“The military supply chain is among the most complex in the world, and NPS understands first-hand the challenges manufacturers must address,” said Xerox Chief Technology Officer Naresh Shanker. “This collaboration will aid NPS in pushing adoption of 3D printing throughout the U.S. Navy, and will provide Xerox valuable information to help deliver supply chain flexibility and resiliency to future customers.

“The world is moving into an on-demand economy where you only pay for what you use, when you need it,” continued Shanker. “The ElemX can have a tremendous impact, not just for the military but also for the manufacturing world in advancing this vision. From saving on transportation, warehousing, and inventory carrying costs to reducing carbon emissions, the potential impacts on business and society are very exciting.”

With access to this latest AM technology, NPS faculty and students will use the ElemX to conduct this research to develop new capabilities for the Navy and Marine Corps.

“As the Department of the Navy’s applied research university, NPS combines student operational experience with education and research to deliver innovative capabilities and develop innovative leaders with the knowhow to use them,” said NPS President retired Vice Adm. Ann Rondeau. “This collaborative research effort with Xerox and the use of their 3D printing innovations is a great example of how NPS uniquely prepares our military students to examine novel approaches to create, make, prototype and manufacture capability wherever they are.”

“From the age of sail to the nuclear era, Sailors have been fixing things at sea so they can complete the mission,” she continued. “This partnership is about the strategic ability of the Navy to have Sailors on



ships with the capability through creativity and technology to advance their operations at sea. Through collaboration, NPS and Xerox are helping build a Navy for the 21st Century.”

With approximately 250 commissioned ships distributed around the globe, the logistical demands of the Navy are enormous and require a complex web of support systems – each with their own individual requirements – to provide a steady stream of equipment and maintenance parts. A broken or missing part worth a few cents can cause thousands of dollars' worth of delays or even mission failure if sailors abroad have to wait for it to be replaced: any given request must go all the way back to the United States, often get sourced, and then flown back out to the requester.

To address these potential supply chain issues, the Navy has for more than two decades pursued AM technology as a means to get sailors the parts they need, both at shore-based facilities and at sea. Producing metal components, however, has been a tricky affair. The process has proven sensitive to humidity, vibrations and shock, and fluctuations in the power supply. It's also dangerous: it uses metal powders which are both toxic and highly explosive. Such conditions are less than optimal for sailors at sea, let alone ashore, ultimately yielding a poor Return on Investment (ROI) in the technology. Until now, that is.

Xerox recently developed a means to print metal components without having to rely on metal powders. Their new ElemX liquid metal printer instead utilizes low-cost, off-the-shelf metal to easily, safely and cost-efficiently print metal components on demand. Operating similarly to an office ink jet printer, the ElemX melts a metal wire down and jets tiny droplets of molten metal, layer upon layer, to form metal objects.

“The great thing about the ElemX is that it uses wire instead of powders to make a part,” noted Tali Rosman, Xerox’s General Manager of 3D Printing. “With liquid metal printing, you don’t need inventory [of bulky materials] and can 3D print on demand; powder-based printers don’t lend themselves to that because of the explosion risk and all the unique requirements. Our technology doesn’t need a special room or hazmat suit to use.”

“We’re thinking about meeting needs ten years out from now, and this is the first metal printing technology that really lends itself to that long-term vision,” she added.

In order to implement that vision, however, Xerox wants to ensure that the printer is ready for prime time.

As soon as they launched their 3D innovation, the company began searching for a partner in the scientific community that could help bring their new technology to market. The printer, they realized, required feedback by actual users in order to make the leap from lab conditions to enterprise-scale use.

They found that in the Naval Postgraduate School.

“We wanted somebody in the scientific community in the front end of innovative technology that could basically pressure test our technology in the field to help us accelerate and scale our roadmaps,” Shanker explained. “We knew NPS could move the needle for us in so many ways: it has a very strong scientific community very much connected into moving advanced sciences into the field.”

“NPS is an entity that could greatly help us find ways to prioritize new use cases and very diverse cases as well as materials fairly rapidly,” he continued. “Working with a real forward-thinking entity like NPS was very attractive.”

Xerox account executives began working with the Navy to make this a reality, and within six months, a CRADA was signed.

“There was no hesitation for us to say we would like to partner with Xerox on this CRADA because we immediately saw the benefit of this technology,” recalled Garth Hobson, Chair of NPS Mechanical and Aerospace Engineering (MAE) department. “This is an all-around win-win situation. Not only will Xerox be learning from us what the Navy’s needs are and how to implement this technology, but it will advance our mission requirements.”

“The bottom line is that the mission of NPS is to educate Naval officers,” he added. “They’ll take this technology into the Fleet.”

The ElemX opens the door to new realms of research possibilities for NPS students and faculty across a multitude of disciplines.



“Having the ElemX at NPS provides us with unparalleled flexibility in terms of the number and variety of tests that we can do to examine this novel technology’s capabilities,” said CAM co-director Amela Sadagic. “It also provides us with the opportunity to acquire insights into this type of 3D printer’s suitability for Naval operations.”

This exploration spans a range of research activities, from microscopic investigation of different metals and alloys to cost-benefit analysis of acquisition processes, and NAME 2030 has already integrated the ElemX into graduate student curricula, theses and ongoing research projects.

The MAE department is planning a range of efforts to test the quality of 3D printed parts and identify and test specific user cases; the Center for Materials Research will provide analysis, qualification and certification of varying materials; the Computer Science department will focus on training requirements and examine the parameters associated with the technology’s diffusion and large-scale adoption; the Graduate School of Defense Management will study risk management and the diverse range of factors that influence the ROI in utilizing the technology in various operational settings; the Warfare Innovation Continuum will explore how liquid metal printing might transform military operations, from tactical employment to strategic implications.

Additionally, CAM is organizing a series of brown bag lectures to expand NPS student and faculty familiarity with the technology and the specifics of the ElemX.

“Our goal is to make sure that every student who comes to NPS has a basic understanding of the potential that AM technology brings to DOD and their future role of both the practitioners and active supporters of the innovation in their services,” Sadagic noted.

These efforts – and Xerox’s ability to reach the enterprise size and scale of the United States Navy – underscore the potential for the ElemX to reduce dependency on global supply chains for military forces abroad and at sea.

Forward units currently rely on massive, centralized supply depots – what Marines call an “Iron Mountain” – to meet their logistical needs. The inventory at these regional hubs must continuously be monitored and, even when the system functions flawlessly, replacement parts ordered might take weeks to resupply.

The Navy has perhaps the most complex range of replaceable parts out of all the services, according to Hobson, and the vast majority of these – approximately 90 percent – are made of metal. Even if an ElemX wasn’t on every ship, having the printers forward deployed would preclude the need for an immense logistics network stretching all the way to the United States and back again.

“The Fleet doesn’t have too many plastic parts, so I see this technology as key to the Navy’s long-term supply chain issues,” he said. “As far as the Navy is concerned, AM is definitely in the future.”

One of the greatest advantages of the ElemX, however, is perhaps the most intangible: the human imagination.

With access to an ElemX, sailors and Marines would have the means to improvise innovative solutions on the spot; versed in the Art of the Possible, this might mean the difference between mission success and failure, or even life and death.

“Our warfighters out there are very smart,” Hobson said. “Give them that respect and they will come up with their own unique way of using this technology out at sea, given the opportunity.”

The ability to print parts locally, rapidly and reliably would potentially alter the way the military supplies its forces dramatically. In an era of Great Power Competition, the flexibility this affords may prove an imperative: the ability to do things better, faster, safer and more cost-effectively is the lodestar of Fleet readiness.

“This is one way to bend the curve so that the DOD is not spending a thousand dollars for every dollar that a peer competitor spends,” observed retired U.S. Marine Corps Col. Todd Lyons, Vice President of the NPS Alumni Association and Foundation, the non-profit organization which made the strategic collaboration with Xerox possible.

“The NPS Alumni Association and Foundation supported bringing the liquid metal printer to NPS because it will enable soldiers, sailors, airmen and Marines to solve their problems where they are, when problems occur,” he continued. “By donating the right digital tools and the liquid metal printer, all of a



sudden we've helped transform not just the supply chain, but how the DoD thinks operationally about supplying war.”

For more discussion on AM, tune in to the latest episode of the NPS' video series – Listen, Learn, Lead – with university President retired Vice Adm. Ann E. Rondeau. In the episode, AM experts Drs. Amela Sadagic and I. Emre Gunduz, as well as supply chain expert Dr. Geraldo Ferrer hold an interdisciplinary discussion focused on the future applications of AM toward needs in the Naval domain.

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## **Seapower Conversation: NPS Hosts Discussion with Tri-Service Maritime Strategy**

### **Authors**

*(Navy.mil 2 Mar 21)* ... Matthew Schehl

*(NPS.edu 2 Mar 21)* ... Matthew Schehl

Naval Postgraduate School (NPS) students and faculty recently had the opportunity to directly engage the primary architects of the nation's newly-published Tri-Service Maritime Strategy “Advantage at Sea: Prevailing with Integrated All-Domain Naval Power,” gaining first-hand insight into the sea services' new strategic direction.

In a virtual exchange broadcast on the NPS Live Streaming Channel on Feb. 9, the lead authors of the strategy from the Navy, Marine Corps and Coast Guard directly involved in the document's creation discussed the vision of how, and why, the maritime services will more fully integrate, aggressively modernize and deepen ties with allies and partners over the next decade.

The discussion was produced by NPS' Naval Warfare Studies Institute, the first in a series called Seapower Conversations, an ongoing dialogue series with strategic leaders to directly apprise students and faculty of emerging concepts, capability development efforts and global operations of the Navy and Marine Corps.

For these future Naval leaders of the 21st century, such knowledge is paramount observed NPS President retired Vice Adm. Ann E. Rondeau when welcoming the speakers.

“The foundation of our force development and design efforts and operations start with warfighting concepts: philosophically, why we fight and conceptually how we will fight,” she said. “This is the North Star that guides everything else and therefore is incredibly important to get right.”

Much has changed in the world since the previous maritime strategy, “A Cooperative Strategy for 21st Century Seapower,” was published in 2015.

The People's Republic of China, the Russian Federation and other authoritarian regimes have embarked on a strategy of aggressively disrupting the free and open international order – a system which has provided the collective security and prosperity the United States has enjoyed since the end of World War II. Through malign actions which blur the lines between military and civilian, they actively and consistently seek to undermine alliances and partnerships throughout the world in order to upset the balance of power.

Meanwhile, China and Russia have embarked on a period of almost exponential military growth and modernization, directly challenging American ascendancy. Over the last two decades, for example, China's naval forces have more than quadrupled in size, growing from approximately 150 to 700 maritime platforms, according to the Office of Naval Intelligence.



Left unchecked, these trends will leave America's maritime services unprepared to guarantee our advantage at sea or protect our national interests within a decade.

Advantage at Sea meets these challenges head-on across the board, providing strategic guidance for the maritime services to prevail over a wide range of confrontation, from high-end conflict all the way down to the nitty-gritty of every-day competition side by side with our allies and partners.

"It's important to recognize that this is not a regional strategy," noted Capt. Matthew Culp, Deputy Director of Navy Strategy, OPNAV N7, leader of the effort to develop and draft the tri-service strategy. "This is a global look at everywhere that naval forces operate. This is a global competition with China and Russia, where fundamentally we see the free and open international order being challenged. This is not just military competition – they're using all dimensions of national power and increasingly so."

Alliances and partnerships are our key strategic advantage in meeting this global threat, he said, providing an asymmetric advantage across a continuum of competition.

"You need all kinds of assistance to maintain maritime security. You've got long logistics lines you need to secure; you need to deter opportunistic aggression," he said. "This is not a bipolar problem. This is a multipolar world now. Alliances and partnerships help do all of that in a high-end conflict and, most importantly, this network helps build deterrence and capability that we can't do alone."

Engaging in a range of collective actions, from developing interoperable military capabilities to civilian capacity-building, will serve to strengthen powerful bonds with like-minded nations, he added.

At the same time, the Naval Services – the Navy, Marine Corps and Coast Guard – must also deepen the way they work amongst each other, according to Advantage at Sea. The strategic guidance calls for the three services to integrate their respective capabilities, capacities, roles, investments and authorities in order to optimize their collective strength.

A dedicated effort to work and train together will yield a whole greater than its constituent parts in successfully meeting the global challenges of the new security environment, according to Col. Robb Sucher, National War Plans Branch Head and Strategy Branch Head at Plans, Policies and Operations, Headquarters, Marine Corps.

"We want to make sure we're really capitalizing on the strengths that we all bring together," he said. "This is certainly something that in our day-to-day we really need to do well and we need to do often. This is going to take years to make sure that we're incredibly proficient, but it's something we need to do."

Working as a whole, this synchronization will enable an All-Domain Naval Power able to triumph through any realm, from the depths of the seas to outer space, across the world's oceans and shores, and throughout the cyber domain and electromagnetic spectrum.

"This concept of integration is really, as you look at a resource-constrained environment, to put the right assets against the right threat at the right time," explained Cmdr. Kate Higgins-Blum, Strategic Foresight Director at the Coast Guard's Office of Emerging Policy. "The Coast Guard should really be specializing and leaning in where it has the competitive advantage, which enables the Navy to invest where it needs to invest, the Marine Corps to invest where it needs to invest, and then synchronize this to really address both the global threats that we face and recognize those focused regional challenges. The end result would be to expand our ability to really operate across the continuum of competition."

While the Pentagon was focused on the Global War on Terrorism, the maritime security environment has clearly changed, Culp said, with the proliferation of advanced sensors and long-range precision weapons by our adversaries, making surveillance, anti-area access and denial much more effective for the adversary.

"For many years we've imagined the seas as these huge strategic moats for the nation and largely opaque areas for us to operate," he said. "It's not that sea control is important when it wasn't before; we've just been able to assume that we had it, but now it is contested."

"Sea control becomes the cost of entry for doing all of our other missions," Culp continued. "In order to project power, in order to maintain maritime security, in order to conduct sealift, we need to maintain sea control."



In order to maintain that effective sea control, however, it will be necessary for the Naval Services to undergo significant modernization efforts, a topic of frequent discussion across the U.S. defense and political landscape.

Sailing at the dawn of a new era – the Cognitive Age – will see intelligent systems, big data, machine learning and artificial intelligence increasingly augment human activity and decision-making. Maritime forces will therefore require new platforms, new thinking and new technologies to meet these new challenges.

Enhanced distributed operations, smaller ships, lighter amphibious ships, updated aircraft, expanded logistics, resilient space capabilities, and integrated manned and unmanned systems will all need to be incorporated into the sea services over the next decade.

The Navy, according to Advantage at Sea, will have to prioritize lethality, capacity, readiness and expeditionary logistics over sustaining legacy capabilities; the Marine Corps modernization over force-structure size; the Coast Guard readiness, capacity and future capability over legacy capability.

This does not mean, however, that current systems should go by the wayside. Realistically, Culp noted, a large portion of the fleet of 2030 is afloat today.

“The hybrid fleet is going to be a mix of existing platforms and these future platforms as they come down the pipes,” he said. “It’ll be a combination of all those things, so what we are trying to achieve right now is to find the right balance, to optimize that blend right now and come up with the correct platforms.”

This requires investment in the most powerful platform the United States can bring to the table: the human mind.

Sailors, Marines and Coast Guardsmen must be prepared to be agile and adaptive in an era of complex, rapidly changing operating environments replete with cyberattacks, electromagnetic spectrum denials, swarm attacks by small, unmanned aerial vehicles and other challenges yet evolving. If the lights go out, creative people will be needed who are capable of making independent decisions in the dark.

“For institutions like the Naval Postgraduate School, where you have people with this incredible technological savvy and creativity, that’s where the intellectual horsepower is going to come from to solve these problems,” Culp said.

“I would challenge everyone at the Naval Postgraduate School that this is the work of analysis and wargaming,” he said. “It’s very important to do a lot of that sort of stubby pencil work over the next five years or so. Let’s get the right blend of this. Let’s solve these networking problems. Let’s find a way to integrate our forces, to build these compatible systems.”

“We really need to get this right in this decade,” Culp added.

Watch the complete Seapower Conversations discussion with the Tri-Service Maritime Strategy authors on the NPS YouTube Channel.

[Seapower Conversation: NPS Hosts Discussion with Tri-Service Maritime Strategy Authors > United States Navy > News-Stories](#)

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## **The Apache Software Foundation Announces Apache® Daffodil™ as a Top-Level Project**

*(Globe News Wire 4 Mar 21)*

Open Source universal data interchange implementation of the Data Format Description Language (DFDL) standard in use at DARPA, GE Research, **Naval Postgraduate School**, Owl Cyber Defense, Perspecta Labs, and Raytheon BBN Technologies, among others.

(ASF), the all-volunteer developers, stewards, and incubators of more than 350 Open Source projects and initiatives, announced today Apache® Daffodil™ as a Top-Level Project (TLP).

Apache Daffodil is an Open Source implementation of the Data Format Description Language 1.0 specification (DFDL; the Open Grid Forum open standard framework for describing the attributes of any



data format) to enable universal data interchange. The project was first created at the University of Illinois National Center for Supercomputing Applications (NCSA) in 2009, and entered the Apache Incubator in August 2017.

"We're extremely excited that Apache Daffodil has achieved this important milestone in its development. The Daffodil DFDL implementation is a game changer in complex text and binary data interfaces and creates massive opportunities for organizations to easily implement highly sophisticated processes like data decomposition, inspection, and reassembly," said Michael Beckerle, Vice President of Apache Daffodil. "Instead of spending a lot of time worrying about how to deal with so many kinds of data that you need to take in, from day one you can convert all sorts of data into XML, or JSON, or your preferred data structure, and convert back if you need to write data out in its original format."

Apache Daffodil is particularly useful in large-scale organizations, such as governments and large corporations, where massive amounts of complex and legacy data must be exchanged and made accessible every day. Daffodil is also particularly useful in cybersecurity, where data must be inspected for correctness and sanitized.

Apache Daffodil is in use at major global organizations that include DARPA, GE Research, Naval Postgraduate School, Owl Cyber Defense, Perspecta Labs, and Raytheon BBN Technologies, among others.

"We are using Daffodil to translate DFDL schema specifications into code for our Monitoring & Inspection Device (MIND) as part of our work on DARPA's Guaranteed Architecture for Physical Security (GAPS) program," said Bill Smith, Principal Engineer at GE Research. "One of our engineers has joined the Apache Daffodil Project Management Committee and is building out the new DFDL-to-C backend on a dedicated Daffodil development branch. We are now translating DFDL schemas provided by other DARPA GAPS performers to C code suitable for the small resource-constrained controllers in our MIND device. When complete, Daffodil's DFDL-to-C backend will give us the ability to annotate DFDL schemas with security policies and rapidly reconfigure our MIND device for different mission security profiles."

"Apache Daffodil is an important asset to our cross domain solutions technology stack, allowing Owl to support our customers by extending our filtering capabilities to new data types faster and with less risk," said Ken Walker, CTO at Owl Cyber Defense. "It's directly in line with our company priorities, as supporters of the Open Source community, and highly beneficial to our product lines to have this high-quality Open Source implementation of DFDL to support challenging, sometimes proprietary data formats, such as Link16, VMF, USMTF, OSisoft PI System, and JANAP-128, without the need to develop additional software. DFDL enables our Raise-the-Bar compliant cross domain solutions to support new data types without additional rounds of lengthy lab-based testing and recertification."

"The DFDL open spec and the Apache Daffodil implementation have helped us tremendously in parsing and transforming fixed-format data in a variety of different R&D projects at BBN," said Michael Atighetchi, Lead Scientist at Raytheon BBN Technologies. "Sharing parsers through a vendor-neutral XML representation is a game changer that enables a significant speedup in developing, maturing, and transitioning advanced capabilities to help war fighters."

"Our research on applying Data Format Description Language (DFDL) is exploring how to unlock and archive a plethora of diverse data streams from unmanned systems," said Don Brutzman, Naval Postgraduate School. "Both the DFDL standard and the Apache Daffodil open-source implementation provide a big benefit for these potential capabilities. Continuing work at Naval Postgraduate School (NPS) Consortium for Robotics and Unmanned Systems Education and Research (CRUSER) hopes to make telemetry from field experimentation and simulation repeatably tractable for Big Data analytics."

"Graduation to a TLP recognizes that the Apache Daffodil project follows the rigorous software development practices that have made so many of ASF projects trusted and successful," added Beckerle. "With the increasing interest in Big Data, interoperability, and protection from malicious data, we welcome new contributors to help us further grow the Apache Daffodil community."



## Availability and Oversight

Apache Daffodil software is released under the Apache License v2.0 and is overseen by a self-selected team of active contributors to the project. A Project Management Committee (PMC) guides the Project's day-to-day operations, including community development and product releases. For downloads, documentation, and ways to become involved with Apache Daffodil, visit <https://daffodil.apache.org/> and <https://twitter.com/ApacheDaffodil>

## About the Apache Incubator

The Apache Incubator is the primary entry path for projects and codebases wishing to become part of the efforts at The Apache Software Foundation. All code donations from external organizations and existing external projects enter the ASF through the Incubator to: 1) ensure all donations are in accordance with the ASF legal standards; and 2) develop new communities that adhere to our guiding principles. Incubation is required of all newly accepted projects until a further review indicates that the infrastructure, communications, and decision making process have stabilized in a manner consistent with other successful ASF projects. While incubation status is not necessarily a reflection of the completeness or stability of the code, it does indicate that the project has yet to be fully endorsed by the ASF. For more information, visit <http://incubator.apache.org/>

## About The Apache Software Foundation (ASF)

Established in 1999, The Apache Software Foundation is the world's largest Open Source foundation, stewarding 227M+ lines of code and providing more than \$20B+ worth of software to the public at 100% no cost. The ASF's all-volunteer community grew from 21 original founders overseeing the Apache HTTP Server to 813 individual Members and 200 Project Management Committees who successfully lead 350+ Apache projects and initiatives in collaboration with nearly 8,100 Committers through the ASF's meritocratic process known as "The Apache Way". Apache software is integral to nearly every end user computing device, from laptops to tablets to mobile devices across enterprises and mission-critical applications. Apache projects power most of the Internet, manage exabytes of data, execute teraflops of operations, and store billions of objects in virtually every industry.

The commercially-friendly and permissive Apache License v2 is an Open Source industry standard, helping launch billion dollar corporations and benefiting countless users worldwide. The ASF is a US 501(c)(3) not-for-profit charitable organization funded by individual donations and corporate sponsors including Aetna, Alibaba Cloud Computing, Amazon Web Services, Anonymous, Baidu, Bloomberg, Budget Direct, Capital One, Cloudera, Comcast, Confluent, Didi Chuxing, Facebook, Google, Handshake, Huawei, IBM, Microsoft, Namebase, Pineapple Fund, Red Hat, Reprise Software, Target, Tencent, Union Investment, Verizon Media, and Workday. For more information, visit <http://apache.org/> and <https://twitter.com/TheASF>

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[The Apache Software Foundation Announces Apache® Daffodil™ as a Top-Level Project \(globo.newswire.com\)](http://globo.newswire.com)

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## Apache Daffodil now ASF top-level project

*(SD Times 5 Mar 21) ...* Jakub Lewkowicz

The Apache Software Foundation (ASF) announced Apache Daffodil is now a top-level project, which means that the project's community and products have been well-governed under the Apache Software Foundation's meritocratic process and principles. Daffodil is an open source implementation of the Data Format Description Language (DFDL) 1.0, and aims to provide universal data interchange.





According to the project’s website, DFDL is a specification that was developed by the Open Grid Forum and “capable of describing many data formats, including both textual and binary, scientific and numeric, legacy and modern, commercial record-oriented, and many industry and military standards. It defines a language that is a subset of W3C XML schema to describe the logical format of the data, and annotations within the schema to describe the physical representation.”

“Graduation to a TLP recognizes that the Apache Daffodil project follows the rigorous software development practices that have made so many of ASF projects trusted and successful,” said Michael Beckerle, the vice president of Apache Daffodil. “With the increasing interest in Big Data, interoperability, and protection from malicious data, we welcome new contributors to help us further grow the Apache Daffodil community.”

Daffodil is an open standard framework that describes the attributes of any data format and enables universal data interchange.

The framework is particularly useful for large-scale organizations where there are massive amounts of complex and legacy data exchanged and made accessible every day, according to the foundation.

It is also very effective in cybersecurity use cases, where data must be inspected for correctness and sanitized, ASF explained.

Daffodil is currently in use at many large organizations such as DARPA, GE Research, **Naval Postgraduate School**, Owl Cyber Defense, Perspecta Labs, and Raytheon BBN Technologies, among others.

“We’re extremely excited that Apache Daffodil has achieved this important milestone in its development. The Daffodil DFDL implementation is a game changer in complex text and binary data interfaces and creates massive opportunities for organizations to easily implement highly sophisticated processes like data decomposition, inspection, and reassembly,” Beckerle added.

[Apache Daffodil now ASF top-level project - SD Times](#)

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## COMMENTARY:

### **President Biden needs a 'Devil's Advocate'**

*(The Hill 4 Mar 21) ... H.R. McMaster and Zachary Shore*

Most of President Biden’s top-level appointees have been quickly confirmed by the Senate. It is clear that all will be loyal team players. But the president also needs the opposite.

Sometimes foreign policies go wrong because of “group think,” as likely happened in the Bay of Pigs debacle in 1961. At other moments, wishful thinking or mirror-imaging adversaries – what some have called “strategic narcissism” – yields disasters. We saw this when the George W. Bush administration invaded Iraq assuming that regime change would be much easier than it turned out to be; we saw it when the Obama administration largely disengaged from Iraq in 2011, assuming that the fight against jihadist terrorists there would end when the United States withdrew its forces. And sometimes presidents blunder because they and those around them become caught in cognition traps — rigid mindsets that cloud their view.

One technique that governments employ to avoid these pitfalls is “The Red Team,” a task force of experts charged with thinking like their enemies. And while red teams can often be effective, they suffer from at least one drawback: Teams, even red teams, can breed group think, strategic narcissism or cognition traps, simply by their inherent need to cooperate with one another and be influenced by each other’s views.

To help avoid these pitfalls, presidents need the lone critic.

President Biden should recruit a devil’s advocate, someone whose sole job is to expose the assumptions on which every policy is based. This official would, by design, have no authority at all. He or she would be outside of all organizational flow charts and answer only to the president. They would



have no budget to protect and no turf to defend. Nor would they encroach on others' domains. They would be free to challenge all points of view and required to challenge every policy position of consequence. They would be extremely unpopular.

The Devil's Advocate would need to be neither an ideologue nor an egotist. They would have no deep ties to the president or his party, or to any party; to be wedded to an ideology is another common source of blunders. And this person must have no desire to advance their career in government. Operating outside of any organization, they could have no upward mobility. Once they had served their time, they would return to their former job or settle into retirement. In fact, a retiree, a kind of wizened village elder, could be appropriate. But wisdom does not always come with age: The so-called wise men whom Lyndon Johnson tapped for guidance on Vietnam had a mixed record; most backed his escalation of the war, then completely reversed course following the Tet Offensive in 1968. Age and experience were not enough.

The Devil's Advocate must work alone, not be beholden to any particular agency, foreign policy or defense establishments. The president should be his or her only client. A president's national security adviser is meant to fill that role, but the NSA's job is to present the president with the best advice and multiple options for overcoming challenges and taking advantage of opportunities. The Devil's Advocate would complement that effort through a critique of those options, as well as identification of viable alternatives that were not considered.

Naturally, the Devil's Advocate, or DA, would need expertise, but their knowledge base must be broad. They would be wide-view foxes, not narrow-niche hedgehogs, as Isaiah Berlin framed it in his essay on political judgment. There should be one for foreign policy and another for domestic affairs. The two would work independently of each other, never in tandem.

So, what exactly would this Devil's Advocate do? In foreign affairs, for example, whenever the principals of the president's national security team debated a course of action, the DA would prepare a critique of each principal's perspective, including, and especially, the president's. They would produce a brief memo spotlighting the underlying assumptions behind every argument. The DA would be, in essence, the president's critical thinker.

Before the president made a final decision on any major policy initiative or action, he would receive the DA's assessment of all arguments, pro and con. These memos would reveal logical fallacies, implicit assumptions, unfounded assertions and shaky conclusions on all sides of an issue. That stark, unvarnished and as-unbiased-as-possible presentation would help the president rethink any actions before committing to them. It would offer clarity, unmarred by narrow organizational or ideological interests — at least, that would be the goal. No one is free of biases or capable of flawless logical reasoning. But genuine critical thinkers try hard to acknowledge their biases and account for them in their analysis.

The Devil's Advocate would need, above all, integrity and humility. He or she must know enough to understand that no one person possesses deep knowledge of the range of challenges that the United States faces in the areas of foreign policy and national security. That is why the DA also must be free to consult with subject matter experts across the government, academia and the private sector.

Can people with the necessary knowledge, skills and abilities be found — people who are not caught up in partisan politics, who have reputations for fairness and prudence? The best candidates might be found outside the orbit of Washington experts. The search might begin among outsiders who are committed to the national interest and the common good, who also possess the integrity and humility necessary to serve the president, the Constitution and his or her fellow citizens.

Appointing an official Devil's Advocate would be a remarkably low-cost addition to the Biden team. If the appointment flopped, little would be lost. If it succeeded, it might save the president from egregious errors. It might even prevent lives from being lost. With such a small downside and an incalculable upside, shouldn't the search for a Devil's Advocate begin at once?

H.R. McMaster is a former U.S. national security adviser, a senior fellow at the Hoover Institution and a retired U.S. Army lieutenant general. His most recent book is "Battlegrounds: The Fight to Defend the Free World" (2020).

Zachary Shore is a professor of national security affairs at the **Naval Postgraduate School**, a senior fellow at UC Berkeley's Institute of European Studies and a visiting fellow at Stanford's Hoover Institution. He is the author of "Blunder: Why Smart People Make Bad Decisions" (2016).



The opinions expressed here are solely those of the authors and do not necessarily reflect the official policy or position of the Naval Postgraduate School or any other governmental entity.

[President Biden needs a 'Devil's Advocate' | TheHill](#)

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## **Foreign Correspondent: Biden's Bombing of Syria Is a Dangerous Step Backward**

*(The Progressive 4 Mar 21) ... Reese Erlich*

For the first time, the Biden Administration ordered a cross-border military attack in the Middle East.

On February 26, seven U.S. missiles slammed into a facility used by Iranian-backed militias in Syria. Washington was retaliating for the February 15 attack on a U.S. base in northern Iraq.

The Pentagon is claiming self-defense.

“For far too long, administrations of both parties have interpreted their authorities in an extremely expansive way to continue military interventions across the Middle East region and elsewhere. This must end.”

“We have acted in a deliberate manner that aims to de-escalate the overall situation in both eastern Syria and Iraq,” said Pentagon Press Secretary John Kirby.

At the same time, the United States “sends an unambiguous message,” according to the Pentagon.

“President Biden will act to protect American and Coalition personnel.”

Whoever was supposed to get the message didn't. On March 3, missiles hit an Iraqi base occupied by troops from the United States and its allies.

So let me get this straight: The recent fighting began when the Pentagon murdered Iranian General Qasem Soleimani last year. There have been several tit-for-tat airstrikes—all proving Tehran is the bad guy aggressor while Washington is the good guy acting in self-defense.

James A. Russell, associate professor at the **Naval Postgraduate School**, Monterey, tells me this policy of retaliation hadn't worked for Obama or Trump, and Biden won't do any better. (He stresses that his views are his own, not necessarily those of the Navy Postgraduate School.)

“What are we doing in Iraq in the first place?” he asks. “We lost the war.”

If the United States hadn't occupied Iraq in 2003, and Saddam Hussein was still in power, the Islamic State wouldn't have grown as an opposition force and Iran wouldn't have influence in Baghdad.

“We have a record of disastrous policies across the Middle East,” Russell says.

Obama, despite his claims to be an anti-interventionist, expanded missile and drone attacks in the region. Trump left office with occupation troops remaining throughout the region.

“The Trump Administration didn't even rise to the level of rank amateurism,” Russell says. “But the recent bombings show Biden has the same predilections as previous administrations. Somehow bombs are a substitute for picking up the phone to carry out diplomacy.”

While out of power, mainstream Democrats had no problem criticizing missile attacks carried out by Trump. In April 2017, the Trump Administration bombed Syria for its alleged use of chemical weapons.

At the time Jen Psaki, now White House press spokesperson, tweeted, “What is the legal authority for strikes? Assad is a brutal dictator. But Syria is a sovereign country.”

Today Psaki declines to comment on her tweet but defends Biden's military attack. Senator Bernie Sanders, on the other hand, has remained consistently opposed to military intervention.

“This is the same path we've been on for almost two decades,” Sanders says in a press statement.

“For far too long, administrations of both parties have interpreted their authorities in an extremely expansive way to continue military interventions across the Middle East region and elsewhere. This must end.”

Some 2,500 U.S. troops remain in Iraq and, to date, Biden has made no announcements about withdrawal.



During the 2020 presidential campaign, I wrote that certain Biden advisors were Iran hawks, ready to continue Trump's disastrous policies of maximum pressure. They used their past connections to benefit corporations and foreign governments. Now those advisors are government officials.

Gareth Smyth, a journalist who covered the Middle East for twenty-nine years, tells me from his home in County Mayo, Ireland, that some in the administration think "Biden can keep the Trump sanctions. They call it 'leverage' instead of 'maximum pressure.' "

Beginning under the administration of George W. Bush, Washington devised a sophisticated, unilateral and illegal system to prevent Iran and other sanctioned countries from using the international banking system. When the Obama Administration applied these sanctions, it caused economic havoc in Iran.

Starting in 1979, with the takeover of the U.S. Embassy in Tehran, Washington imposed many complicated sanctions on Iran. Today most international companies have stopped trade with Iran, fearing U.S. economic and judicial retaliation. Over time certain groups in Washington developed a vested interest in maintaining those sanctions.

Specialized lawyers, lobbyists, and think tanks developed a "sanctions empire," Smyth says. Some think tanks "pose as neutral academics but they have an agenda."

For example, the Foundation for Defense of Democracies describes itself as "a nonprofit, nonpartisan . . . research institute focusing on foreign policy and national security." And it's the go-to source for the media looking to bash Iran.

Biden's attack on the Iraqi militias was intended to serve many purposes, including an effort to bolster the U.S. position in nuclear talks. It had the opposite effect. A few days after the bombing, Iranian officials rejected efforts by European powers to facilitate new discussions.

Both sides could reach an agreement based on each others' minimum demands. Iran wants Washington to rejoin the nuclear accord and stop sanctions. The United States wants Iran to limit its nuclear power program so it can't be used to build a nuclear weapon. Both sides should be able to agree; they did it in 2015.

But the United States also demands that Iran stop supporting Lebanon's Hezbollah, Yemen's Houthis, and Syria's President Bashar al Assad.

Under the 2015 accord Iran agreed to abide by the Non-Proliferation of Nuclear Weapons Treaty (NPT), which would prohibit building of a nuclear bomb. Says analyst Russell: "The United States should be satisfied to have Iran as a constructive member of the NPT community."

According to journalist Smyth, Biden's military attacks won't succeed any more than previous Presidents. Decades of military pressure and sanctions haven't changed Iran's foreign policy.

"Logic says you should negotiate," he says. "The cycle of revenge won't work."

[Foreign Correspondent: Biden's Bombing of Syria Is a Dangerous Step Backward - Progressive.org](#)

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## FACULTY:

### **Brunswick Corporation Expands Autonomy Solutions; Appoints Marine Autonomy Technology Lead**

*(Globe News Wire 1 Mar 21)*

Brunswick Corporation (NYSE: BC) continues to build on its ACES (Autonomy, Connectivity, Electrification & Shared Access) strategy to develop solutions to further improve boater experiences by advancing the efficiency and capabilities of its core product lines. In support of this effort, the Company has announced that Jason Arbuckle has been promoted to a newly formed role of Marine Autonomy Technology Lead. This new strategic position will enable the Enterprise to lead the delivery of highly automated-to-autonomous solutions for the recreational marine industry.



Brunswick continues to identify and establish new leaders with strong technology experience to strengthen its capabilities in autonomy, connectivity, and electrification. In November, Brunswick announced the hiring of John Oenick as Director, Enterprise Electrification, a role that has allowed Brunswick to support and deliver electrification solutions across the Company.

“Automation and control technologies are rapidly emerging critical enablers for delivering innovation through smart-connected recreational marine products and experiences,” said Dave Foulkes, Brunswick Corporation CEO. “Jason is a proven leader who will help us advance our capabilities, providing leadership to our emerging autonomy teams across the entire enterprise.”

“I am excited for this opportunity to lead advancements in Marine Autonomy for Brunswick Corporation,” said Arbuckle. “Brunswick has made advancements in vessel control over the last several years through assisted docking, joystick piloting, Skyhook and more, and I believe autonomous and driver assistance features are the next steps in enabling an easier boating experience. I look forward to working with all the Brunswick divisions on enhancing marine autonomy.”

Arbuckle joined Mercury Marine in 1997 and has since advanced through the company, working to lead some of the company’s many award-winning innovative technology solutions. Throughout his career, Arbuckle has been instrumental in the development of helm software for Mercury Marine products from single engine to six engine vessels and has been granted more than 45 patents related to marine control systems. Most notably, he led Mercury’s Vessel Control Team to develop AutoPilot systems, SkyHook, BowHook and DriftHook, as well as the vessel control software efforts for Starfish 1 and 2.

Jason has a BS, MS and Ph.D. in Electrical Engineering from Michigan Technological University and contributes his time and talent to students entering the field at the **Naval Postgraduate School**, the US Navy, MIT providing guidance on their Philos autonomous vessel, as well as, student SAE projects at UW Madison.

#### **About Brunswick:**

Headquartered in Mettawa, Ill., Brunswick Corporation’s leading consumer brands include Mercury Marine outboard engines; Mercury MerCruiser sterndrive and inboard packages; Mercury global parts and accessories including propellers and SmartCraft electronics; Power Products Integrated Solutions; MotorGuide trolling motors; Attwood, Mastervolt, and Whale marine parts; Land ’N’ Sea, BLA, Payne’s Marine, Kellogg Marine, and Lankhorst Taselaar marine parts distribution; Mercury and Quicksilver parts and oils; Bayliner, Boston Whaler, Crestliner, Cypress Cay, Harris, Heyday, Lowe, Lund, Princecraft, Quicksilver, Rayglass, Sea Ray, Thunder Jet and Uttern boats; Boating Services Network, Freedom Boat Club and Boat Class. For more information, visit [brunswick.com](http://brunswick.com).

[Brunswick Corporation Expands Autonomy Solutions; Appoints Marine Autonomy Technology Lead NYSE:BC \(globeNewswire.com\)](https://www.globenewswire.com/NewsRoom/PressRelease.aspx?tid=123456789&cid=123456789)

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## **Iran Conducts Major Wave of Executions and Shootings of Ethnic Minorities**

*(FDD 4 Mar 21) ... Brenda Shaffer*

Tehran has killed dozens of members of Iran’s ethnic minorities in recent weeks, especially among Iran’s Baluch and Ahwazi Arab communities. Ethnic minorities are increasingly conducting anti-regime activity, and the wave of demonstrations over the last three years has been centered in provinces where minorities are numerous.

Iran is an ethnically diverse country, with over 50 percent of its population composed of non-Persians. The latest wave of ethnic protests first erupted in the Sistan-Baluchistan province on February 22 after Iranian forces fired on dozens of Baluch smugglers on the Pakistani border, killing several and injuring dozens.



After the incident, violent demonstrations broke out in the province, including an attack on an Islamic Revolutionary Guard Corps (IRGC) base and a crowd storming the governor's office in the city of Saravan. In response, Tehran has shut down the internet in the province.

To the west, the regime recently executed four Ahwazi Arab youths. Among them was Jasem Heydari, who had returned to Iran from Austria after failing to receive asylum. Tehran convicted the four for the crime of "waging war against God." In addition to the killings of Baluch and the execution of Arabs, Tehran has arrested several ethnic Azerbaijani activists. One was arrested for writing on a wall on International Mother Tongue Day calling for Tehran to allow the use of other languages in addition to Persian.

Ironically, Iran's secretary of the High Council of Human Rights, Ali Baqeri Kani, said this week that Iran's ethnic minorities face no discrimination and are very proud Iranians.

The clerical regime is well-aware that ethnic troubles overlap with greater degrees of poverty and lower levels of government services and infrastructure. Iran's ethnic minorities inhabit the state's poorest provinces and have lower levels of education and health than Iran's Persian heartland.

For example, Sistan-Baluchistan is Iran's poorest province and has the worst unemployment and literacy rates. The country's growing environmental challenges, including extreme water shortages, affect the minority provinces more acutely than the Persian center.

Most of Iran's border provinces are populated by ethnic minorities who also live in the neighboring states. Ethnic troubles, including insurgencies, can cross the borders. For example, Baluch in Pakistan have given assistance and refuge to Iranian Baluch. Iranian border guards have been abducted and held in Pakistan. Iranian forces have crossed into Pakistan in attempts to subdue, kill, and capture Iranian Baluch militants.

Ahwazi Arabs and Baluch also inhabit several strategically important locations in Iran. Ahwazis are the majority in Khuzestan province, which is the center of Iran's oil production, with major ports and pipeline junctions. The strategic Chabahar port is located in Sistan-Baluchistan province.

Tehran's recent actions are likely to spur a new wave of anti-regime activity in Sistan-Baluchistan and Khuzestan and may potentially ignite new anti-regime activity in the Kurdish border regions with Iraq and Turkey. However, the wave is unlikely to spread to the main Persian cities, including Tehran, since Iran's main opposition groups have shown little sympathy for the struggles of Iran's minorities and tend to support the regime's efforts to rein the groups in.

Still, the regime is not likely to succeed in fully suppressing the anti-regime activity of its ethnic minorities. The Kurds and Baluch have long-running insurgencies, and Ahwazi Arabs, despite increasing crackdowns, are carrying out frequent attacks against Iranian military and IRGC units.

Brenda Shaffer is a senior advisor for energy at the Foundation for Defense of Democracies (FDD), where she also contributes to FDD's Iran Program. She is also a faculty member at the U.S. **Naval Postgraduate School**. For more analysis from Brenda and the Iran Program, please subscribe [HERE](#). Follow Brenda on Twitter @ProfBShaffer. Follow FDD on Twitter @FDD and @FDD\_Iran. FDD is a Washington, DC-based, nonpartisan research institute focusing on national security and foreign policy.

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## **Armenia's nuclear power plant is dangerous. Time to close it.**

*(The Bulletin 5 Mar 21)* ... Brenda Shaffer

In late 2020, the Armenian government announced that its Metsamor nuclear power plant would close for five months in 2021 to attempt significant upgrades. Soon after, the EU urged Armenia to make the closure permanent since the plant "cannot be updated to fully meet internationally accepted safety standards." A major nuclear or radiation accident at Metsamor would not only affect the people of Armenia, but citizens in neighboring Turkey, Georgia, Azerbaijan, Iran, Russia, and southern Europe. Besides, Armenia can meet its energy needs without Metsamor's output, especially as it exports to Iran



over half of the plant's electricity. Further, thermal plants and renewable sources could replace what is used domestically. Metsamor does not even help Armenia achieve its declared goal of energy independence, as Russia–Armenia's main energy supplier–provides the country with most of its natural gas, along with nuclear fuel and specialized technicians for the plant. But none of these arguments have swayed Armenia to close Metsamor in the past.

Is there an argument that could work now?

The EU might urge Armenia to consider a closure in light of recent developments. Post-war road, railway, and energy-development plans should increase trade and transportation linkages in the South Caucasus region after the recent conflict between Armenia and Azerbaijan. The new infrastructure and financing provide Armenia with a fresh opportunity to tap newer, safer, and more diverse energy supplies. By closing Metsamor, Armenia would not only contribute to the safety of its own citizens and those in neighboring countries but strengthen peace in the South Caucasus.

Metsamor nuclear power plant. Metsamor is located in a major seismic zone close to Armenia's capital, Yerevan, and near Armenia's border with Turkey. The original, Soviet-built plant included two 400 megawatt reactors. Unit 1 began commercial operation in 1977. Both units were closed by the Soviet authorities in 1989, following the Chernobyl accident and the massive Spitak earthquake in Armenia in 1988, which killed over 25,000 people. In 1995, following Armenia's independence, Metsamor Unit 2 was restarted at 375 megawatts electrical with Russian funding and technical support. The plant's original operating license was supposed to end in 2016, but Yerevan extended it to 2021, and late in 2020 announced its intent to extend the plant's operation even longer. Unit 1 has remained closed.

Metsamor is one of five of the last operating Soviet-era reactors without a containment vessel, which is a requirement of all modern reactors. (The other reactors without containment vessels are located in Russia.) Nuclear fuel for the Metsamor plant is flown in from Russia, with no special announcements to the Armenian public or regional aviation authorities. In contrast, most nuclear fuel is delivered in the world by sea or rail to minimize the impact of potential accidents. Since the restart of Metsamor Unit 2, the reactor's spent nuclear fuel has remained on site. Then-Armenian Deputy of Energy Areg Galstyan stated in 2004 that details on the air shipments of the nuclear fuel were kept secret to "avoid alarming the people."

Since its re-launch in 1995, Metsamor has had multiple safety upgrades and also dozens of low-level safety incidents, according to the International Atomic Energy Agency. Hakob Vardanyan, Armenia's deputy minister of territorial administration and infrastructure, who oversees the energy sector, explained that upgrade work at Metsamor had fallen behind schedule because Armenian workers have an "acute lack of experience" in nuclear plant construction and repair.

A nuclear or radiation accident at Metsamor would not only affect the majority of the population of Armenia due to its close proximity to the capital, but also citizens in many nearby countries. Further, an accident or leak at the plant, which is located on the Metsamor River, which feeds into to Araz River, would create damage downriver in Azerbaijan and Iran.

EU efforts to close Metsamor. Since the late 1990s, the EU has repeatedly encouraged Armenia to close Metsamor as part of a program aimed at shutting down nuclear power plants it has viewed as dangerous, including some located in the EU. Indeed, Lithuania, Bulgaria, and Slovakia agreed to shut down their plants as a condition of joining the EU.

Armenia had agreed to close Metsamor by 2004 as part of a 1998 EU agreement. The EU had even supplied Armenia with funds to close the plant and find substitute energy supplies. However, Armenia did not use the funds to transition its energy sector, leading the EU to freeze the loans in 2005. Around that time, Armenian Head of the EU Delegation Alexis Louber underscored the need for closure when he said, "(N)uclear plants should not be built in highly active seismic zones. This plant is a danger to the entire region ... we wanted to close it as quickly as possible."

Likewise, subsequent formal cooperation agreements between the EU and Armenia, including Armenia's action plan for the European Union Neighborhood Policy in 2006 and the EU-Armenia Comprehensive and Enhanced Partnership Agreement in 2017, have planks on closing and decommissioning Metsamor. The European Union Neighborhood Policy even provided technical assistance for decommissioning and managing radioactive waste. Prior to signing that policy, Armenian



Minister of Trade and Economic Development Karen Chshmaritian made clear that Metsamor's closure was a precondition for deepening Armenia's links with the EU. Armenia signed the agreement and subsequently adopted a formal decommissioning plan in 2007. Yet Metsamor has remained operational.

In almost every official report related to the European Union Neighborhood Policy implementation, the EU emphasized that it wanted Armenia to close Metsamor. For example, the 2011 European Union Neighborhood Policy Country Progress Report-Armenia states, "The EU continues to request the closure of Metsamor Nuclear Power Plant as soon as possible, as it cannot be upgraded to meet internationally recognized nuclear safety standards."

The next major agreement between the EU and Armenia was the 2017 EU-Armenia Comprehensive and Enhanced Partnership Agreement. This agreement states that both sides will cooperate on "the closure and safe decommissioning of Metsamor nuclear power plant and the early adoption of a road map or action plan to that effect, taking into consideration the need for its replacement with new capacity to ensure the energy security of the Republic of Armenia and conditions for sustainable development."

Meanwhile, as Armenia signed various agreements with the EU to close and decommission the plant, it also negotiated other agreements with Russia to extend the reactor's life. Then in March 2014, the Armenian government formally extended Metsamor's operation. Later, while negotiating the 2017 Partnership Agreement mentioned earlier, then-President of Armenia Serzh Sargsyan stated that the agreement with the EU had not required Metsamor's closure, despite the explicit commitment in the agreement.

Fast forward to December 2020, when the European Commission reaffirmed the EU position: "The nuclear power plant located in Metsamor cannot be upgraded to fully meet internationally accepted nuclear safety standards, and therefore requires an early closer and safe decommissioning. It is necessary to rapidly adopt a roadmap or action plan to address this, taking into consideration the need to ensure Armenia's energy security and conditions for sustainable development."

Armenia's energy security allows Metsamor's closure. Armenia has a unique energy market with relatively small consumption of electricity and a large proportion of its electricity exported, mostly to Iran. Armenia has several options for reducing its electricity needs and finding substitutes for Metsamor's output, meaning that Armenia could close its nuclear power plant and still provide reliable energy for its population.

Most energy in Armenia is used for residential purposes and transportation, with only 15 percent consumed by industry. Armenians primarily use natural gas, which accounts for 65 percent of the country's energy consumption. Armenia's relatively mild summers mean that relatively little energy is needed for cooling. As a result, the country's per-person electricity consumption is less than half that of Europe's.

Armenia could provide reliably for its energy needs without the output from its nuclear power plant. Today, Armenia exports over half of Metsamor's electricity to neighboring Iran. If these exports were ended, the remaining domestic needs could be met by building one additional thermal-powered electricity plant.

Armenian officials point to energy independence as a key motivation for Metsamor's ongoing operation. They categorize its output as domestically produced energy, without acknowledging that Russia supplies all of its fuel or that the plant's most complicated work is performed by Russian specialists under the direction of Russian state entities. Since Armenia also imports more than 80 percent of its natural gas from Russia, and the Russian energy corporation Gazprom owns Armenia's gas network, keeping Metsamor open actually represents further dependence on Moscow, rather than less. In fact, Armenia's energy security could be improved by diversifying its energy suppliers and supplies. A new thermal plant could have dual-fuel capacity, enabling a quick transfer to liquid fuel (such as heavy oil or diesel) or to coal, thereby reducing its dependence on natural gas. Armenia could then stockpile backup fuel or coal and quickly transfer to the stored energy without major disruption to electricity supplies. Armenia also has the ability to increase its hydroelectric generation.

Armenia can significantly lower its energy consumption through greater energy efficiency. Moreover, Armenia's energy demand will decrease in 2021 because it lost control of territories in neighboring Azerbaijan in the 2020 war, where it had provided electricity and gas until late 2020.





Regional peace initiatives enable new energy trade. Armenia plans to retain and upgrade its nuclear power plant, despite commitments to the EU to close it. The Armenian Energy Sector Development Strategic Program to 2040 states that “the government will stay committed to the policy to maintain nuclear power plant in the country’s generation mix.” Within Armenia, there is little public opposition to the plant, despite its lack of modern safety measures and proximity to a third of the country’s population. Indeed, Armenian officials frequently note their national pride at being the only country in the South Caucasus to operate a nuclear power plant. Financial factors also likely play a role. The main costs in nuclear power plants lie in their construction and decommissioning, while operating costs, including fuel, are relatively low. Russia also grants loans to Armenia to cover many of the costs.

During the five months of 2021 in which Metsamor is scheduled to shut down, the EU might seize the opportunity to remind Armenia of its commitments to close the plant altogether. Instead of investing in upgrades, Armenia could put the funds towards building an additional thermal plant. This would safeguard people throughout the region and strengthen the post-war peace process that includes new railway and road linkages and potentially new energy trade. Such an effort would emphasize regional cooperation, including among representatives of Armenia and Azerbaijan

With new roads, new railways, and possibly new energy pipelines in the region, Armenia would be able to diversify its energy supplies. For instance, the planned new rail connections would enable Armenia to import fuel and coal that could be stockpiled as backup to its natural-gas-fired generation. With this increased supply and source diversification, Armenia would actually improve its energy security. In the end, closing Metsamor could improve the physical security of Armenians and their European neighbors while improving Armenia’s energy security.

At a minimum, the EU should require that Armenia install an early warning system that would notify its neighbors and EU headquarters in Brussels of leaks or accidents at the Metsamor plant. The EU, the Organization for Security and Co-operation in Europe Minsk Group, the US State Department, and the US embassy in Yerevan could sponsor and support this process.

Following the Fukushima Daiichi nuclear disaster in Japan, Germany and other key EU states shut down their nuclear power production. Also, the EU has succeeded in closing dangerous Soviet era plants among its new members. However, EU citizens remain in danger when problematic plants in their neighborhood remain operational. The EU now has an opportunity to remove one of these dangers while strengthening regional cooperation, but only if it convinces Armenia to scrap plans to repair Metsamor in favor of shutting it down altogether.

Brenda Shaffer is an international energy and foreign policy specialist and faculty member of the U.S. **Naval Postgraduate School**. She also is a Senior Advisor for Energy at the Foundation for Defense of Democracies think tank and a Senior Fellow at the Atlantic Council’s Global Energy Center in Washington, DC. She tweets at @ProfBShaffer.

[Armenia’s nuclear power plant is dangerous. Time to close it. - Bulletin of the Atomic Scientists \(thebulletin.org\)](http://thebulletin.org)

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## ALUMNI:

### No Woman Need Apply

*(Salt Lake City Weekly 3 Mar 21) ... Christopher Smart*

The executive team at the Salt Lake City Fire Department is a good old boys club and Martha Ellis didn't fit in. When push came to shove, there was no one at City Hall to protect her from trumped up allegations.

Ellis' education, training and hard work led her to become the first—and only—female fire marshal at the SLCFD. But her energy and attention to detail apparently made the top brass feel insecure. The 22-



year fire department veteran was passed over for promotion several times despite her superior qualifications, then was demoted after filing a discrimination claim and ultimately fired.

Salt Lake City's Civil Service Commission found that Ellis was wrongly demoted and should be reinstated. The commission's report scolded fire department brass regarding the lack of evidence and apparent manufactured allegations in Ellis' demotion to captain.

It also found that then-Assistant Fire Chief Robert McMicken was "looking for reasons" to discipline Ellis. The 49-page document said the seven allegations brought against her "appear as an attempt to manufacture misconduct and alleged failure of performance to justify disciplinary action, when there were no performance issues."

Ellis holds a master's degree in homeland security from the **Naval Postgraduate School** and has a graduate certificate in conflict resolution and mediation from the University of Utah. She also was one of four recipients of the Harvard Kennedy School of Government fire service fellowship awards in 2012.

But despite the Civil Service Commission's findings, former Salt Lake City Mayor Jackie Biskupski did not intervene as Ellis was demoted, fired and then mired in litigation, after she sued the city for gender discrimination and retaliation.

Biskupski, however, did make use of Ellis' predicament in her 2014 campaign against former SLC Mayor Ralph Becker, who was vulnerable after sexual harassment charges surfaced in the police department.

On several occasions during the campaign, Biskupski derided Becker on gender equality issues and referred to a female firefighter (Martha Ellis) who had filed with the Equal Employment Opportunity Commission (EEOC), alleging gender discrimination. Biskupski's campaign promised a safe and fair work environment for women. But actions speak louder than words.

SLC Mayor Erin Mendenhall, like her predecessor, has been silent on Ellis' claims of gender discrimination as her case remains mired in litigation. Mendenhall's administration says they take gender discrimination claims very seriously. But in the case of Martha Ellis, those words disappear into thin air.

Meanwhile, the City Attorney's Office continues to drag out Ellis' complaint in U.S. District Court for Utah.

Former Salt Lake City Mayor Rocky Anderson, who is a civil rights attorney, said City Hall's treatment of Ellis is "fundamentally unethical."

"Nobody (at the city) is asking, what's the right thing to do," Anderson said in a City Weekly interview. What's just as bad, he noted, is that taxpayers are picking up the bill so the city attorney can continue to make Ellis' life difficult.

"Who's paying Martha Ellis' legal bill?" he asked. "She's a total hero and she's being treated like shit by the city."

At the center of the dispute, according to Ellis, was her criticism of some on the department's executive team for allegedly engaging in personal, for-profit activities on the city's time, along with her complaints about the design of Fire Station 2 that lacked smoke detectors and caught fire, as well as the installation of bicycle lanes on 300 South that yielded a roadway narrower than required by the state and city fire code.

She was demoted on May 3, 2016. Adding to the humiliation, Ellis said, was on the day of her demotion, she was escorted out of the Public Safety Building as her peers looked on, in what she described as something of a "perp walk."

The difficult working conditions, discipline and demotion took a toll on Ellis. "I can't begin to explain the despair," she said.

A psychologist provided by the city told her to take an extended period of time off because she was suffering from anxiety and depression after the demotion. After four months of disability leave and six months of unpaid leave, Ellis was fired. She lost her livelihood and the career she had dedicated her life to.

"I was sitting there in the twilight zone with no exit," she said of the aftermath. "I was not available to my daughter or my husband because I was so consumed."



The one-time fire marshal said she experienced cascading adverse impacts. "It's this cloud that's so pervasive in your life. I'm still experiencing the ramifications of it," Ellis said. "Thank God I have a family that loves me and a good psychologist."

What sticks in her craw is that the men whom she alleges ran her out based on superfluous claims, McMicken and Fire Chief Karl Lieb—who was deputy chief at the time—were left in top positions at the fire department. Former Chief Bryan Dale has since retired. Both Dale and Lieb were hired to the chief's position from within the ranks of the SLCFD.

### **Inside City Hall Politics**

Among the dynamics at play, according to insiders, is that it is much easier for the mayor to do nothing, rather than upset the fire department management by following the Civil Service Commission's recommendations and reinstating Ellis to her former rank.

"It looks like they circled the wagons," said a source close to City Hall, who wished to remain unnamed. The Biskupski administration determined to support its fire department executive team at the expense of Ellis, who became collateral damage, the source said.

But in January 2020, Salt Lake City's elected a new mayor who was not part of the fiasco. And the city attorney works at the pleasure of the mayor who is solely responsible for review of the office's legal work (with the exception of City Council matters).

In an email response to City Weekly, Mayor Mendenhall's office said it could not respond to questions concerning any case it litigation, including that of Martha Ellis.

Beyond that, the mayor's office would not say when the city attorney's case load had been reviewed by the mayor to weed out cases that should be settled. The mayor's office also did not respond when asked if there had been any recent performance audit of the City Attorney's Office nor did it respond to a second request by City Weekly for an interview with Mayor Mendenhall regarding the functions of the City Attorney's Office. (The first request was denied.)

Deeda Seed, a former chief of staff for Mayor Anderson, as well as a former member of the Salt Lake City Council, said people who are not lawyers can be finessed or managed by the City Attorney's Office. Although Anderson reviewed cases being litigated by the City Attorney, Seed said most mayors do not.

"It's a bit of a fiefdom," she said of the City Attorney's Office. "They can be selective on how they present information to elected officials—and that does sway how things unfold."

But Seed added that it's possible that during Mendenhall's first year in office, which was marked by an earthquake, a storm with hurricane-force winds that toppled hundreds of trees and the pandemic, Ellis' case might not be on the mayor's radar.

"It's like juggling plates," Seed said of myriad matters the mayor must address. "There are a thousand issues that need attention. Things like (the Ellis case) can easily get cast aside."

And so, the former fire marshal's case remains floundering somewhere in the sausage grinder of legal actions at the whim of an attorney who works in the City Attorney's Office or who is under contract and may have little incentive or motivation to settle, short of complete victory for the municipality.

In court documents, the city attorney argues that Ellis' claim should be dismissed because it contains no facts, only conclusions. In other words, the Civil Service Commission's findings should not be evidence of wrongdoing.

"While legal conclusions can provide the framework of a complaint, they must be supported by factual allegations," wrote John E. Delaney for the City Attorney's Office. "Thus, threadbare recitals of the elements of a cause of action, supported by mere conclusory statements, do not suffice."

Pushing that argument aside, Ellis' attorneys recently filed a motion for partial summary judgment asking the court to accept the Civil Service Commission's findings as factual. If the court were to agree, a future jury would be instructed that "it may conclude without considering additional evidence that Salt Lake City discriminated against Ellis in violation of her Equal Protection Rights when it demoted her because the city did not have a legitimate, non-discriminatory reason to support its actions."

After Dale demoted Ellis on May 3, 2016, he determined she could no longer work in an administrative position and ordered her to return as a firefighter. Because she had not seen action on firetrucks for more than 13 years, Ellis requested a training refresher and a physical, as outlined in the



department union's directive. She also asked for a gradual break-in period before she went full time, as recommended by psychologist.

Those requests were denied by Lieb, according to documents.

On Feb. 17, 2017, Ellis applied for a third 90-day leave, accompanied by a letter from her health-care provider. Lieb denied that request, noting that in 2016, from May 3 to Aug. 27—before her unpaid leave—she had been on disability leave. If she didn't return by March 1, 2017, Lieb said, she would be fired. At the point, she had taken a total of 10 months' leave, partly because she had severely injured her hand.

Ellis attempted to negotiate with the city's human resources manager, Melissa Green, seeking accommodations through the Americans with Disabilities Act regarding her mental state. On March 6, 2017, Green sent an email explaining that she would have to take a position outside the fire department. Ellis balked and asked for more details.

On March 14, 2017, Green wrote to Ellis: "[B]ased on your current work restrictions, the fire department is unable to provide a reasonable accommodation that would enable you to return to work in your position of fire captain."

On March 17, 2017, Ellis again expressed her frustration regarding the suggestion that she work elsewhere. Options included golf course groundskeeper and Youth City teen specialist. Later that day, Lieb fired her.

### **Litany of Discrimination**

Her disputes with top managers go back to 2014. On Sept. 30 of that year, according to Ellis' lawsuit, Dale and Lieb passed over her to promote a less-experienced, less-educated male counterpart: McMicken—the same person who was later dressed down by the Civil Service Commission for "manufacturing" evidence against Ellis.

On Nov. 25, 2014, Ellis filed a charge of discrimination and retaliation based on gender with the EEOC (the federal Equal Employment Opportunity Commission).

Immediately after that, Ellis was removed from her position as the fire marshal—a position she had held since 2009—and reassigned to division chief of logistics. Ellis saw it as a demotion, but she retained her battalion chief rank.

In June 2016, several weeks after her demotion, Ellis filed a notice of claim at City Hall alleging fraud, state fire code violations, cover-ups and retaliation by top brass in the department. Ellis alleged she was demoted after raising concerns, including allegations aimed at members of the department's executive team engaging in personal activities on city time.

On March 16, 2016, The Salt Lake Tribune ran a story highlighting then-Chief Dale's affiliation with the International Academies of Emergency Dispatch (IAED). While he was deputy chief, Dale said he taught classes at IAED conferences, earning \$20,000 to \$30,000 annually. As deputy chief, the city paid him a salary of \$110,116 and benefits worth \$11,116.

On May 28, 2016—three months after the Tribune story on his affiliation with IAED—Dale said he would retire in October of that year after serving 16 months as chief.

Looking back, Ellis said filing complaints against the fire department and Salt Lake City was her last option after years of attempting to work through the municipality's system.

"Every effort was made to resolve these matters at the lowest possible level," she said. "Having exhausted all other options, I felt obligated to make my concerns public, because not doing so would be in direct conflict with my responsibilities as a public servant."

There are well over 300 firefighters in the SLCFD. Only seven of them are women. None are in executive management positions.

[No Woman Need Apply | Cover Story | Salt Lake City | Salt Lake City Weekly](#)

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## **Richard Giusti selected as Fire Chief for the City of Bryan**

*(KXXV 8 Mar 21) ... Joel Leal*

The City of Bryan Fire Department has named Richard Giusti as their next Fire Chief.

After a nationwide search, the department received 44 qualified applications. Vetted, the applicants were processed by a team of representatives from the Fire Department, Police Department, and other departments within the City of Bryan. Interviewing their 8 finalists, Giusti was unanimously voted in to succeed retired Fire Chief, Randy McGregor.

Giusti is expected to begin his position with the Bryan Fire Department, sometime in early April according to their news release.

“Over the last few months, learning about the City of Bryan and its Fire Department has shown me what a tremendous community and organization I am joining. It is very apparent both the City Leadership and the Fire Department have a strong culture that focuses on the safety and service to the citizens we serve,” Giusti said. “It is a distinct honor to be selected as the Fire Chief for the City of Bryan and to represent such an excellent organization. I look forward to working hard to keep our citizens and firefighters safe while becoming part of this remarkable culture and living ‘The Good Life, Texas Style’.”

At the time of this publication, Giusti is serving as the Assistant Fire Chief and supervises 400 personal for the San Antonio Fire Department. He is also a former Master Sergeant in the United States Air Force and has served as an instructor at Louisiana State University’s National Center for Biological Training and San Antonio College.

Giusti holds a Master of Arts degree in Homeland Security from the **Naval Postgraduate School** Center for Homeland Defense and Security, a Bachelor of Arts degree in Disaster and Emergency Management from American Military University, and two Associate of Applied Science degrees in Fire Science and Instructor of Technology and Military Science from the Community College of the Air Force.

“Ultimately, Chief Giusti was chosen because he is a dedicated professional with a safety-focused approach and broad experience leading firefighting operations and administrative initiatives. His experience training and leading a team, building relationships, and working collaboratively will be assets as he continues the tradition of excellence within the Bryan Fire Department,” said City Manager Kean Register.

The Bryan Fire Department is a full-service department that provides fire and emergency medical services, fire prevention, training, inspection, and emergency management. The department staffs five stations throughout 54 square miles of the community and boasts a Class 1 ISO rating and EMS accreditation through the Commission on Accreditation of Ambulance Services.

[Richard Giusti selected as next Fire Chief for the City of Bryan \(kxxv.com\)](http://kxxv.com)

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## **Naval Surface Warfare Center, Port Hueneme Division Department Officer Reflects on Progress During Women's History Month**

*(NAVSEA 7 Mar 21) ... Esmi Careaga*

Cmdr. Birute Jurjonas, Ship Defense and Expeditionary Warfare Department officer at NSWC Port Hueneme Division, grew up in Chicago, where she attended the Illinois Institute of Technology. In 2002, while pursuing a Bachelor of Science in electrical engineering, she connected with a U.S. Navy recruiter who helped spark her interest in the Nuclear Propulsion Officer Candidate Program.

In 2007, she earned a Master of Science in engineering management from Old Dominion University in Norfolk, Virginia, and in 2012, a Master of Science in electrical engineering from the **Naval Postgraduate School** in Monterey, California. In 2018, Jurjonas joined NSWC Port Hueneme Division as the command’s S Department officer, a role in which she is responsible for in-service engineering, test and evaluation and integrated product support for ship defense systems, surveillance radars and underway replenishment.



"Our goal is to maintain and sustain the Navy fleet to be ready for the fight," she said.

Over the years, Jurjonas said the command has taken many steps to include women, such as through the Federal Women's Program (FWP), Lean In Circles that help connect women within the workforce, and the "Safe Space, Real Talk" forum.

"I am amazed at what women have been able to accomplish and how they have helped pave the way for many women today, including myself," she said. "I hope it gets easier for the younger generation to rise into leadership roles."

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## HOUSING:

### **Two military families sue over mold in base housing at Naval Postgraduate School**

*(Stars and Stripes 5 Mar 21) ... Rose L. Thayer*

*(Military.com 7 Mar 21) ... Rose L. Thayer*

Two military families are suing several private housing companies because the homes that they rented at the Naval Postgraduate School in Monterey, Calif., contained mold that sickened their children and ruined their personal belongings.

Navy Cmdr. Louis D'Antonio and his wife Amber Holland-D'Antonio and Marine Corps Maj. Ryan Keller and his wife Samantha Keller moved into homes in the Parks at Monterey Bay about one year apart. Both families discovered their houses contained mold and believe the private companies that manage the base housing did not follow proper safety precautions while remediating the homes, which exacerbated the conditions, according to a lawsuit filed Wednesday in the Superior Court of California.

The defendants listed on the lawsuit are Monterey Bay Military Housing, Clark Pinnacle Monterey Bay, Clark Realty Capital, Pinnacle Monterey and Michaels Management Services, which are the combination of private companies that manage base family housing for the Naval Postgraduate School and the Army's Presidio of Monterey.

The complaints of the two families match those listed in nearly a dozen lawsuits filed in courts across the country. Some military families have turned to the legal system to settle claims that many private companies contracted by the military to maintain and manage base housing have been negligent and force families to live in dangerous conditions.

Jim Moriarty, the attorney behind the Monterey suit and others, said the continued filing of lawsuits shows problems persist despite new reforms that Congress has put into place in the last two years.

"Somebody is going to get one of these cases in front of a jury one day and [the media] will report a verdict that will shock people," he said. "People will be outraged at the conduct of these companies."

Officials at Michaels Management Services declined to comment on the lawsuit because the executive team has not seen all associated paperwork. Officials at Clark did not respond to a request for comment.

Samantha Keller said her three children, who range in age from 3 to 9 years old, still face lasting health effects from living in the Monterey housing, even two years after they moved.

"The hardest thing was to not only have my husband and I go through it, but to watch our children go through it," she said.

The first house the family moved into in May 2017 had water intrusion that led to mold and sewage issues caused by tree roots growing into pipes leading to the house.

"Mold growth continued to reappear, and representatives of the landlord companies would attempt to remove mold laden Sheetrock and trim without proper containment and without taking care to prevent the tracking of moldy materials throughout the house," the lawsuit states.



After one year, the family was moved into another house to allow for mold remediation work, only to end up in a temporary home with mold and insect problems, according to the lawsuit. They eventually decided Ryan Keller would finish his education program in Monterey alone while his family moved in June 2019 to their next duty station, Camp Pendleton, Calif.

All three children suffered respiratory symptoms, trouble sleeping and rashes, as well as emotional trauma. Living off base near Pendleton, Keller said her son saw a plastic covering a neighbor's home that was being repainted. The boy panicked.

"My son started freaking out that the house next door had mold, so all the houses had mold, because that was our experience in Monterey. He started freaking out that he was going to lose his stuff again," she said. "For military kids, home is not the four walls that make that place, but it is what's in it for them. When you take all that away from them, it's almost like losing that sense of home. ... When a toy goes from one house to another, that's when they know they are home."

The D'Antonio family and their four children, ranging in age from 6 to 20 years old, moved into their first home on base in June 2018 and shortly thereafter noticed a smell emanating from their then-7-year-old daughter's bedroom closet, according to the lawsuit. The smell was so penetrating that a teacher at school called Holland-D'Antonio concerned about the smell coming from the child's clothes.

"As the closet smell persisted, the family noticed that mold had begun to grow through the floors and on the tub in the bathroom. In response, the landlord companies sent contractors who were allegedly trained in remediating mold. Instead, these contractors failed to properly contain the problem and tracked mold throughout the house. At one point, they even set moldy construction debris on the family's sofa," the lawsuit states.

The entire family suffered health conditions including persistent runny noses, itchy eyes, coughs, memory lapses and joint pain. One of the couple's daughters suffered from frequent and alarming dizzy spells, causing her to suffer falls and her gymnastics coach recommended she withdraw for her own safety.

"She's lost gymnastics. It was her passion. She wanted to do it and she was good," Holland-D'Antonio said. "She was to a point where she couldn't walk down the stairs. She had to sit down and scoot."

All of the younger kids still use inhalers, something that was not needed before moving to Monterey. They moved in May to Naval Air Station Lemoore, also in California, and live in a home that they purchased during a previous assignment there.

"We've gotten better, but we aren't there yet," Holland-D'Antonio said.

Three contractors attempted to solve the mold problems within their first year in the home, and testing revealed multiple types of mold present in the home. The D'Antonios were moved into a temporary home also found to have mold and then a third home, according to the lawsuit.

It was ultimately decided more work on the original house needed to be done to better understand what was happening, and determine what caused the smell in the closet.

However, a standoff remained about what to do with the family's belongings.

For the last 10 months, the family has continued to pay about \$4,300 in monthly rent through their basic allowance for housing for their original home as they negotiate reimbursement for the damaged property still inside the house. The rent payments continued despite an Army memo that deemed the home uninhabitable, Holland-D'Antonio said.

Junk haulers came last month to take away the remaining items and furniture to the city dump. About three weeks later, the landlord offered the home to a new family, who happened to ask about it on a Facebook page for families of the Monterey housing community.

The prospective family did not take the home after reading comments from other families, Holland-D'Antonio said.

"It was bad enough that they hurt my family, but the fact that they were going to put another family in there, I cried," she said. "I was really upset that they were going to put another family at risk. The physical is terrible, the emotional may be worse. Then the financial."



While the D'Antonios do want to be reimbursed for damages they suffered, the final decision to move forward with a lawsuit stemmed from raising awareness on the problems that families continue to face with the private companies that manage military family housing across the country.

“A lawsuit is pretty public, and it brings awareness. There are so many military families out there who are suffering in silence --afraid to tell command, afraid of repercussions, afraid they'll [create] a lot of charges during move out. All of these things are founded,” Holland-D'Antonio said. “At end of the day it became, if we don't do this and garner public attention, too many people are suffering in silence. We have to let people know it's OK to speak up.”

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