



# NPS IN THE NEWS

## Weekly Media Report – June 15-21, 2021

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### GRADUATION:

1. [DCNO for Warfighting Development Honors NPS Graduates During In-Person Ceremony](#)

*(Navy.mil 18 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class James Norket*

*(NPS.edu 18 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class James Norket*

For the first time in more than a year, the Naval Postgraduate School (NPS) celebrated a graduating class in person during a graduation ceremony for its Spring Quarter graduates, June 18, honoring and recognizing their remarkable achievements and resiliency. While these graduates mostly completed their education in a remote learning environment, during their time at NPS they were able to effectively adapt to overcome the adversity.

### COMMUNITY:

2. [NPS hosts 20th annual underwater robotics competition in-person \[Video Interview\]](#)

*(KSBW 21 June 21) ... Alani Letang*

The Naval Postgraduate School hosted the 20th Annual Marine Advanced Technology Education Remotely Operated Underwater Vehicle Competition.

3. [NPS hosts 20th annual underwater robotics competition in-person](#)

*(California News Times 19 June 21)*

The Navy Graduate School hosted the 20th Marine Advanced Technology Education Remote Control Underwater Vehicle Competition.

### RESEARCH:

4. [Aquatic Laboratory Adds Maritime Domain to JIFX Field Experiments](#)

*(Navy.mil 14 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class Lenny Weston*

*(NPS.edu 14 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class Lenny Weston*

The Joint Interagency Field Experimentation (JIFX) program at the Naval Postgraduate School (NPS), held quarterly, recently added another warfighting domain to its range of venues used to conduct field experiments – water.

5. [Eye on Innovation: Norfolk Naval Shipyard Participates in Innovative HACKtheMACHINE Challenge](#)

*(NavSea.Navy.mil 15 June 21) ... Kristi Britt*

At Norfolk Naval Shipyard (NNSY), the workforce looks to push the boundaries of technology and ensure a more efficient Navy. Recently, representatives from America's Shipyard gathered virtually with hundreds of others to solve some of the Navy's most high-tech challenges in a prize challenge hosted by Naval Sea Systems Command (NAVSEA) called "HACKtheMACHINE."... Track 3 recently finalized shock and vibration testing and the winners were announced June 2 during a livestream event. Elementum 3D took third place for an aluminum Direct Metal



Laser Sintering (DMLS) design, DM3D Technology took second place for their Direct Energy Deposition (DED) stainless steel submission, and I24 Supply Company took first place for their Direct Metal Laser Melting (DMLM) Titanium print. In addition, the **Naval Postgraduate School** and PrintParts were acknowledged as Design Inspiration Awardees for their exceptional documentation and novel designs.

## **6. Geometric Nonlinear Modeling and Simulation Study Earns NAVFAC EXWC Structural Engineer Top Individual Scientist Award**

*(DVIDS.com 16 June 21) ... Sarah MacMillan*

Naval Facilities Engineering Systems Command, Engineering and Expeditionary Warfare Center (NAVFAC EXWC) structural engineer Dr. Robert Zueck of the capital improvements department, is awarded the Dr. Delores M. Etter 2021 Individual Scientist Award for his impactful contributions to the warfighting capabilities of the Navy and Marine Corps... Dr. Zueck hypothesized that VIV cannot amplify drag. His team proved his hypothesis using two separate models using experimentation and simulation. Through testing, instead of amplifying drag, both models showed that VIV slightly reduces fluid drag. Consequently, Dr. Zueck's findings were published and later presented to an international VIV subcommittee. Moreover, Dr. Zueck and his team continued to encourage academia, including the Norwegian University of Science and Technology, the **Naval Postgraduate School**, and the U.S. Naval Academy, to continue performing experiments with alternative structures to see how they interact in alternative fluid environments—in hopes of better proving Dr. Zueck's original hypothesis.

## **7. Community Newsletter: Racine County Emergency Management**

*(The Journal Times 19 June 21) ... David Maack*

Sheriff Christopher Schmalzing recently recognized the Emergency Operations Center (EOC) team with a Unit Citation at the Racine County Sheriff's Office awards ceremony... Racine County officials recently took part in a scenario based "Executive Education" seminar. In partnership with Racine County Emergency Management, the **Naval Postgraduate School Center for Homeland Defense and Security (CHDS)** developed this executive level seminar to explore homeland security and emergency management challenges confronting our area.

## **FACULTY:**

### **8. ONR Awards Two NPS Faculty with Young Investigator Program Honors**

*(Navy.mil 18 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class Lenny Weston*

*(NPS.edu 18 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class Lenny Weston*

Two Naval Postgraduate School (NPS) professors recently earned the Office of Naval Research (ONR) Young Investigator Program (YIP) Award, a highly competitive early-career award program for academic scientists and engineers that recognizes creative research with potential for a significant scientific breakthrough.

### **9. Trained observer noted 'agents provocateur' during Capitol riot amid new report govt. operatives may have been involved**

*(BPR 16 June 21) ... Jon Dougherty*

Reports Tuesday suggesting that elements of the national security and federal law enforcement establishment may have been involved in planning and fomenting the Jan 6 riot sound shockingly similar to observations made a week after the incident by a trained analyst who's an expert in "propaganda, political warfare, psychological warfare, and subversion."... The Fox News host's speculation comes just months after published observations of events during the day of the riot by J. Michael Waller, a senior analyst for strategy at the Center for Security Policy, a former instructor with the **Naval Postgraduate School**, and an instructor/lecturer at the John F. Kennedy Special Warfare Center and School at Fort Bragg.

### **10. What to Watch for in the Iranian Elections**

*(National Interest 16 June 21) ... Michael Rubin*

Iranians are heading to the polls to elect a new president as incumbent Hassan Rouhani is limited by law to two consecutive terms. The Islamic Republic, of course, is not a democracy. Ultimate authority rests with figures and institutions that Iranians do not popularly elect. The Guardian Council regularly culls more than 95 percent of candidates seeking top posts. The Supreme Leader rules not only as a political leader but also as, essentially, the placeholder of the messiah. During his most recent Persian New Year's address, Supreme Leader Ali Khamenei outlined the characteristics he sought in the presidency:... The clear favorite is Raisi. I have been tracing Raisi's



rise for several years. Today Iranians, analysts, and diplomats in Tehran with whom I have spoken consider Raisi the front-runner not only because he has religious credentials, but also because it allows him a clearer path to the supreme leadership should the eighty-two-year-old Khamenei, already a cancer survivor, die in the coming years. After all, when Ayatollah Ruhollah Khomeini, Iran's first supreme leader, died in 1989, it was Khamenei, then the sitting president, who succeeded. **Naval Postgraduate School** scholar and Revolutionary Guards expert Afshin Ostovar, however, warns that many front-runners disappoint and that Khamenei could be setting Raisi up to fail. Losing the election could strike a blow to Raisi's legitimacy and clear a path for Khamenei's own son, Mojtaba Khamenei to stake a claim to the supreme leadership.

## **ALUMNI:**

### **11. Central Arizona Fire and Medical Authority Fire Chief Completes Executive Leaders Program at Naval Postgraduate School**

*(SignalsAZ ) 15 June 21)*

Scott Freitag, Fire Chief of the Central Arizona Fire and Medical Authority, completed the Executive Leaders Program at the Naval Postgraduate School Center for Homeland Defense and Security (CHDS) on June 10.

### **12. Test pilot's career follows unexpected flight path**

*(Red Stone Rocket 16 June 21) ... Katie Davis*

Ask most pilots if they have always wanted to fly and their answer is usually unequivocally, yes... Keefer, who hails from Raleigh, North Carolina, has spent his military career in the skies as an Army experimental test pilot. While becoming a pilot was not always on the horizon, being a Soldier was. After test pilot school, Keefer obtained a master's at the **Naval Postgraduate School** and since then, has been in the skies.

### **13. NUWC Division Newport selects senior technologist for Acoustic Signal Processing**

*(NavSea.navy.mil 17 June 21)*

David Pistacchio of the Naval Undersea Warfare Center (NUWC) Division Newport Sensors and Sonar Systems Department and resident of Narragansett, Rhode Island, has been selected as senior technologist for Acoustic Signal Processing. In this role, Pistacchio will be the primary Navy advisor and consultant in the discipline of active and passive acoustic signal processing applied to research and development programs nationally and internationally... Pistacchio earned a bachelor's degree in bioengineering from Syracuse University in Syracuse, New York, and a master's degree in engineering acoustics from the U.S. **Naval Postgraduate School** in Monterey, California.

### **14. Global Air Logistics and Training, Inc. (GALT) is very pleased to announce that retired Vice Admiral Mat Winter has joined GALT's Board of Directors.**

*(Prnewswire 18 June 21)*

Mat currently is the President of Winter Strategic Solutions, LLC. Prior to that position, he completed a distinguished 35+ year Navy career with his final two marquee leadership positions being the 24th Chief of Naval Research, where he led the Navy's global Science and Technology Enterprise, and as the F-35 Joint Strike Fighter Program Director, where he led a Global Enterprise with over \$30 billion annual budget and had significant responsibilities for modernization, production and global operations of the world's most advanced 5th generation strike fighter. His formal technical and business education from the University of Notre Dame (BS ME), the **Naval Postgraduate School** (MS Computer Science) and the National Defense University (MS Natural Resource Strategy) underpins his impactful operational warfighting and extensive business and technology experiences at the highest levels of the public trust.

### **15. Bank of America Women's Leadership Series Spotlights Trailblazing Women Breaking Barriers in Space Exploration [Video]**

*(Asia Society 18 June 21)*

Asia Society Texas Center wrapped up the sixth year of its Bank of America Women's Leadership Series with a third and final webcast celebrating women in space exploration who have broken barriers on earth – and beyond. NASA flight director Pooja Jesrani, astronaut and Marine Corps test pilot Jasmin Moghbeli, and NASA's Jet Propulsion Lab (JPL) principal systems engineer Grace Tan-Wang joined moderator Rose-Ann Aragon, Space Reporter for KPRC Channel 2 News, for a conversation about how they got started in their space careers, what their



work is like, and their advice for future generations... Jasmin Moghbeli was selected by NASA to join the 2017 Astronaut Candidate Class. She reported for duty in August 2017 and having completed the initial astronaut candidate training is now eligible for a mission assignment. The New York native earned a Bachelor of Science degree in Aerospace Engineering with Information Technology at the Massachusetts Institute of Technology and a Master of Science in Aerospace Engineering from the **Naval Postgraduate School**. Moghbeli, an AH-1W Super Cobra pilot and Marine Corps test pilot, has over 150 combat missions and 2,000 hours of flight time in over 25 different aircraft. She is also a distinguished graduate of the U.S. Naval Test Pilot School in Patuxent River, MD.

## **UPCOMING NEWS & EVENTS:**

**June 22-25, 2021:** [Strategic Planning for Execution: Assessment and Risk \(SPEAR\) workshop](#)

**June 28:** Reporting Date (U.S. Students)

**June 29-Jul 2, 2021:** [Strategic Communication Workshop \(SCW\)](#)

**July 4:** Independence Day (Observed July 5)



## GRADUATION:

### DCNO for Warfighting Development Honors NPS Graduates During In-Person Ceremony

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For the first time in more than a year, the Naval Postgraduate School (NPS) celebrated a graduating class in person during a graduation ceremony for its Spring Quarter graduates, June 18, honoring and recognizing their remarkable achievements and resiliency. While these graduates mostly completed their education in a remote learning environment, during their time at NPS they were able to effectively adapt to overcome the adversity.

NPS President retired Vice Adm. Ann E. Rondeau addressed the graduating class praising them for their resilience during a global pandemic.

“As we reflect on what 2020 was like, this pandemic may have had the closest thing to the effects of what the Great Depression did, it forced on us separation and disassociation,” said Rondeau. “And there was this extraordinary thing that happened in that virtually there was great learning going on, and you met the expectation of the mission. At NPS, we are you. We are military leaders, educators and staff serving those who serve our nation and serving each other. Together we solve hard problems and create solutions. You are the decisive advantage that we deliver. We are you. And that's the magic of NPS.”

Commencement speaker, Deputy Chief of Naval Operations for Warfighting Development (N7) Vice Adm. Jeff Hughes, congratulated the 364 graduates, including 23 international students from 15 countries, conveying how the nation’s warfighting advantage in the era of Great Power Competition will hinge on intellectual capital and technological innovation driving solutions.

“Germane to the mission of NPS is the rapidly changing character of war,” said Hughes. “Whomever successfully develops and fields proven operating concepts that capitalize on emerging disruptive technologies will stand a higher probability of success within the competition continuum.”

“While the fight must be prevented, that prevention is never guaranteed,” he continued. “Central to our success is the strength of our intellectual capital and creativity. We require leaders of competence and character who think freely and leverage the strength of diverse thinking from their teams.”

Hughes then noted, “You now possess knowledge, skills and abilities in an enhanced cognitive toolkit that will allow you to drive solutions.”

Hughes charged the students to take their learning to the Fleet to drive outcomes to yield warfighting advantage.

“My charge to you is get comfortable being uncomfortable,” said Hughes. “Be bold, seek advocacy for change, take calculated risks, fail fast and adapt. Never cease your desire for continued learning and drive it to tangible, measurable outcomes. And be resilient and gritty. The nation expects nothing less, and deep down, neither do you.

“We underwrite all that the Constitution offers and must never take our role to support and defend these rights for granted. Your contribution is truly vital and will be judged by future generations. Let's make it count,” concluded Hughes.

Immediately following the ceremony, Hughes and Rondeau paid special recognition to newly-minted NPS graduate Lt. Cmdr. Austin West by recognizing him as the recipient of the William S. Parsons Award for Scientific and Technical Progress, a national competitive award bestowed by the Navy League of the United States. The award was established in 1957 to recognize extraordinary contributions to scientific and technical progress, and is given to a Department of the Navy (DON) officer, enlisted or civilian who has made an outstanding contribution in any field of science that has furthered the development and progress of DON.

West’s research focused on quantifying the effectiveness of adaptive optics to compensate for the effects of atmospheric turbulence on the performance of the High Energy Laser Weapon System (HELWS), one of the most important, high priority capabilities being developed for defense of the fleet.

“Thank you to the Navy League for bestowing unto me such a prestigious honor,” said West. “Thank you to my advisor for inspiring me and introducing me to the topic. Having just graduated, I am excited to





return to the fleet and be a creative leader, and I hope I can tackle the problems that are emerging and the problems that are coming tomorrow.”

Hear from West himself in the Spring Quarter class video, and check out the official graduation website for more information about the latest graduating class.

[DCNO for Warfighting Development Honors NPS Graduates During In-Person Ceremony > United States Navy > News-Stories](#)

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## COMMUNITY:

### **NPS hosts 20th annual underwater robotics competition in-person [Video Interview]**

*(KSBW 19 June 21) ... Alani Letang*

The Naval Postgraduate School hosted the 20th Annual Marine Advanced Technology Education Remotely Operated Underwater Vehicle Competition.

The event took place at the NPS Sea Land Air Military Research facility, located across the street from the NPS main campus in Monterey.

"We are really excited to be here, just being able to do this again," said Riley Glenn, Geneseas Team CEO, from Saint Francis High School in Sacramento

Underwater robots took a successful dive Saturday, after being put on hold during the pandemic. The Naval Postgraduate hosted the 20th annual Marine Advanced Technology Education or "MATE" Underwater Robotics Competition.

This year the competition features eight teams from across the state.

"They have been working hard to engineer an underwater robot that can accomplish sets of mission tasks we have laid out for them," said Jill Zande, president/executive director of MATE.

The tasks are based on real-world problems. Such as picking up plastic pollutions in the ocean, to how climate change has impacted our coral reefs. Reefs are one of the issues addressed in one of the specialized features in the robot built by Geneseas, an all-female team from Sacramento.

Meredith Garcia, a Geneseas member, said about the robot "in competition simulated by PVC, but in the real world, the application would be for moving coral fragments to different outcroppings."

Her team member, Morgan Jones, added, "we hope to inspire young girls to get into robotics and STEM. We want young girls to know this is something they can do."

The robotics team from Glacier High School Charter in Oakhurst said their specialty for their underwater robot is their limited budget. Where they said their competitors could spend hundreds of dollars on supplies, they chose to scale back.

"Everything we have this year has been reused, recycled or built. Some teams have eight thrusters, we have only four," said Cole Muraszewski, the CEO of the Glacier High School Charter team.

The Glacier team added, "every little detail of this thing has been thought through thoroughly, rebuilt, redesigned until it matches everything we have to do."

The Eco Tech team from Endeavor Charter School in Fresno is also taking a different design approach.

Their underwater robot is shaped like a trapezoid shape, instead of the usual cube.

"The trapezoid is more hydrodynamic so water slides right over it or through it, since it's an open design," said Matthias Cockrum, Eco Tech team member.

Another unique feature, Ely Rodriguez from the Eco Tech team said, "We have these hooks that can pick up plastic debris on the bottom of the floor. We also have a detachable net that can collect plastic that is on the surface of the water. Our ROV is a tool that can multitask."

The top two winners will advance to the world championship in Tennessee Aug. 5-7.



[NPS hosts 20th annual underwater robotics competition in-person \(ksbw.com\)](#)

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## **NPS hosts 20th annual underwater robotics competition in-person**

*(California News Times 19 June 21)*

The Navy Graduate School hosted the 20th Marine Advanced Technology Education Remote Control Underwater Vehicle Competition.

The event was held at the NPS Sealand Aviation Military Research Facility, opposite the NPS Main Campus in Monterey.

Ryri Glen, CEO of Genecies Team at St. Francis High School in Sacramento, said:

The underwater robot made a successful dive on Saturday after being put on hold during a pandemic. The Navy Graduate School hosted the 20th Marine Advanced Technology Education or the “MATE” Underwater Robotics Competition.

Eight teams from across the state will participate in this year’s competition.

Jill Zande, President and Executive Director of MATE, said:

The task is based on the actual problem. How did climate change affect coral reefs, such as picking up plastic pollution in the ocean? Coral reefs are one of the problems addressed by one of the special features of robots built by Geneseas, an all-female team in Sacramento.

“In competition simulated by PVC, but in the real world, applications will be for moving coral debris to different exodermis,” said Meredith Garcia, a member of Geneseas. It was.

“We want to encourage young girls to participate in robotics and STEM,” added her team member Morgan Jones. “We want young girls to know that this is what they can do.” I did.

The robotics team at Oakhurst’s Glacier High School Charter said that underwater robotics specialization is on a limited budget. They chose to shrink where they said competitors could spend hundreds of dollars on supply.

Cole Muraszewski, CEO of the Glacier High School Charter Team, said:

The Glacier team added, “The details of this have been thoroughly thought out, rebuilt and redesigned until they match everything we have to do.”

Fresno’s Endeavor Charter School ecotech team also takes a different design approach.

Their underwater robots are shaped like trapezoids rather than regular cubes.

“Because trapezoids are more hydrodynamic, water slides over or inside, because of its open design,” said Matthias Cockrum, EcoTech team member.

Ely Rodriguez of the Ecotech team said, “There is a hook that can pick up plastic debris at the bottom of the floor, and there is also a removable net that can collect plastic on the surface of the water. Our ROV is multitasking. Is a possible tool. “

The top two will advance to the World Championships in Tennessee, August 5-7.

NPS hosts 20th annual underwater robotics competition in-person [Source link](#) NPS hosts 20th annual underwater robotics competition in-person

[NPS hosts 20th annual underwater robotics competition in-person - California News Times](#)

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## RESEARCH:

### Aquatic Laboratory Adds Maritime Domain to JIFX Field Experiments

*(Navy.mil 14 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class Lenny Weston*

*(NPS.edu 14 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class Lenny Weston*

The Joint Interagency Field Experimentation (JIFX) program at the Naval Postgraduate School (NPS), held quarterly, recently added another warfighting domain to its range of venues used to conduct field experiments – water.

Situated just across the street from NPS's main campus, the Sea Land Air Military Research Initiative (SLAMR) facility houses a series of open-air water treatment tanks that were recently renovated and now serve as SLAMR's aquatic environment laboratory. The addition of these water tanks to the JIFX portfolio of regional facilities, test ranges, and experiment venues, including controlled air and ground space at California National Guard Base Camp Roberts in South Monterey County, allowed JIFX to offer opportunities for not just air, land or cyberspace experiments, but for experiments with sea-based surface and subsurface technologies as well.

JIFX aims to foster collaboration between military, commercial industry, and academia to experiment with and evaluate emerging technologies for defense-related applications. This latest JIFX iteration, held May 24-28, hosted 220 participants representing 73 unique organizations that took advantage of the JIFX field and aquatic labs.

Participants were able to showcase their latest technologies, and in some cases, test and evaluate them either in simulation or live on location at Camp Roberts or in Monterey where underwater, ground and airspace were available.

"The new SLAMR facility here is intended to allow us to simultaneously engage terrestrial systems, subterranean systems, aerial systems, surface systems and subsurface systems in one," said JIFX Director Dr. Raymond Buettner, NPS Associate Professor of Information Sciences. "The Aquatic Laboratory adds water experimentation, the key naval warfighting domain, offering a chance for participants and NPS faculty and students to conduct water-based experiments focused on maritime defense capabilities and applications.

"Through these experiments, private industry can learn what the government is interested in, and the government can get a look at what the commercial world is developing," continued Buettner.

The new facility also offers students who are considering maritime research projects, or whose rigorous academic schedules may not always allow them to visit Camp Roberts, a chance to participate in JIFX. Buettner added there are future plans to add dry tanks for ground exercises and a structure to allow for limited flight experimentation at the SLAMR facility.

NPS PhD student U.S. Navy Lt. Nabil Tahan was on hand at the aquatic lab to observe and evaluate JIFX as a venue for his own future research. He specifically was able to take a look at a high-performance computing system developed by Texas-based TMGcore, which has a proprietary liquid cooling system that reduces the hardware down to a very mobile platform. Having served in a medical unit in Kandahar, Afghanistan, Tahan immediately recognized how the mobile computing capability could help forces downrange.

"Field medical facilities can range in their capabilities, and a high-performing system could manage medical data on trauma victims and help move critical data quickly potentially saving lives," said Tahan.

Tahan went on to note that the majority of NPS students have significant operational experience, and having seen JIFX firsthand, he believes it is an avenue that allows students to translate that experience, their academics, and emerging technology into field experiments.

"A fully operational laboratory and experimentation incubator, especially a maritime experimentation tank designed for student and industry use, right in the backyard of NPS is of utmost importance," said Tahan. "The focus on maritime research adds a critical layer of credibility and power to student research connecting experimentation to NPS' naval roots in the maritime domain."

For Buettner, expanding facilities and their capabilities should open more doors for future experimentation, and he believes the biggest benefit for JIFX will be one that JIFX has been doing for





two decades – an enhanced ability to connect technology experts, evaluators and end-users to further develop technologies for national defense.

"When you think about what we try to accomplish at JIFX, we're trying to create a learning environment where each of the learners gets what they need," said Buettner. "NPS is perfectly appropriate because it creates the learning environment, and companies come to learn about what the latest government requirements might be and what the national security challenges are, and then the government entities come to learn what the cutting edge of the industry looks like."

<https://www.navy.mil/Press-Office/News-Stories/Article/2657705/aquatic-laboratory-adds-maritime-domain-to-jifx-field-experiments/>

<https://nps.edu/-/aquatic-laboratory-adds-maritime-domain-to-jifx-field-experiments>

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## **Eye on Innovation: Norfolk Naval Shipyard Participates in Innovative HACKtheMACHINE Challenge**

*(NavSea.Navy.mil 15 June 21) ... Kristi Britt*

At Norfolk Naval Shipyard (NNSY), the workforce looks to push the boundaries of technology and ensure a more efficient Navy. Recently, representatives from America's Shipyard gathered virtually with hundreds of others to solve some of the Navy's most high-tech challenges in a prize challenge hosted by Naval Sea Systems Command (NAVSEA) called "HACKtheMACHINE."

The competition, broken down into three tracks, asked participants across the Navy enterprise, as well as those in the public and private sectors, to tackle challenges in maritime cybersecurity, data science, and additive manufacturing (AM) over the course of four days. The challenges were set to promote technological advancement and foster teamwork, strengthening the Navy through contributions from all who participated.

"This is the Navy's premier digital experience," said Fathom5 CEO Zachary Staples, who partnered with NAVSEA on the event. "The Navy maintains many digital threads interwoven to create national security for the nation and its allies. HACKtheMACHINE is an opportunity to take some of the problems the Navy is wrestling with and crowdsource solutions where it can benefit from a collective knowledge."

This was the sixth iteration of HACKtheMACHINE with hundreds of participants joining from across the globe. NNSY was able to play a huge part in this year's event thanks to the NAVSEA 04T sponsoring of Track 3, entitled "Heavy Metal." "We worked with NAVSEA 05T, NNSY, and Fathom5 to develop Track 3 to solve our maintenance challenges, seeking solutions head-on," said NAVSEA04TI AM Program Lead Dalia McGlone.

"Heavy Metal is a hybrid virtual and physical challenge that allows the Navy to tap into a wider and more diverse base of advanced manufacturing in this country and beyond," said Staples. "Teams are offered the opportunity to produce a metallic 3-D printed part, converting an existing 2-D drawing into a 3-D technical package. The 3-D printed parts will be tested and evaluated to determine who the winner is. This challenge is tied to a real supply shortfall our Navy currently faces in our shipyards and the winning print could result in a contract with the Navy to meet those demands."

"Over the last several months, we've worked with an amazing team of talented individuals, all looking to bring innovation to our shipyard and beyond," said Jessica Roberts, NNSY Innovation Program AM Lead. "Several people have played an integral role in bringing this idea to life, from Code 950 Non-Nuclear Continuous Training and Development Leader (CTDL) Jon Simmons, who first submitted the metal part for consideration, to the engineering direction to Chief Engineer Mark Everett, to the engineering support of Steve Popelka in Code 270 (Non-nuclear Electrical Engineering) and Frank Fatico in Code 277 (Non-Nuclear Power and Control Systems)."

"Heavy Metal" was broken down into one main challenge and two bonus competitions to provide a variety of ways teams could contribute. The main challenge, entitled "Light It Up," invited teams to recreate a bracket that connects a light fixture to a stanchion. The part was originally produced in 1974



from aluminum alloy and teams were provided 2-D drawings that they could use to help develop their 3-D technical design package (TDP). Once their packages were submitted, teams would take time after the initial four days of HACKtheMACHINE to metal print the aluminum parts and submit them to undergo vibration and shock testing.

“Our efforts with HACKtheMACHINE greatly aligns with the Navy Additive Manufacturing Part Identification Exercise (NAMPIE) where we identify components that could be printed and installed shipboard or to support availability maintenance,” said McGlone. “This initiative was developed by NAVSEA to find ways to 3-D print parts for shipboard use – greatly reducing the amount of time it takes to acquire obsolete or long-lead-time parts. We will expand this across the naval shipyards and look for ways to bring additive manufacturing directly into the shops servicing our Fleet.”

Track 3 recently finalized shock and vibration testing and the winners were announced June 2 during a livestream event. Elementum 3D took third place for an aluminum Direct Metal Laser Sintering (DMLS) design, DM3D Technology took second place for their Direct Energy Deposition (DED) stainless steel submission, and I24 Supply Company took first place for their Direct Metal Laser Melting (DMLM) Titanium print. In addition, the **Naval Postgraduate School** and PrintParts were acknowledged as Design Inspiration Awardees for their exceptional documentation and novel designs.

“NAVSEA was impressed with the diversity of solutions received and the performance of all of the parts during testing. Integrating this capability into our shipyards could help us exceed our commander’s objectives,” said McGlone. “We’ve been very excited to see all the designs that teams have come up with. This is definitely a huge win not only for the participants but for the NAVSEA AM group. At the Navy’s discretion, the winner(s) could be awarded a contract for the procurement of these parts. These parts could greatly benefit our naval team as a whole and keep us surging forward into an innovative future.”

Innovations created through HACKtheMACHINE could greatly benefit the future of the Navy and its goal to bring innovative processes and technologies directly those who need it. “At sea, if I have a part fail – I need to be able to print as much of that part as I can while at sea,” said Rear Adm. Jason Lloyd, U.S. Navy, Naval Sea Systems Command, Chief Engineer and Deputy Commander for Ship Design, Integration and Naval Engineering. “If we are able to print the parts on the ship or submarine, we don’t need to store parts that we don’t normally use, freeing up space for other vital components. In addition, schedule-wise it’s a benefit to be able to print what I need when I need it – so we take care of what’s broken and get everything back in working order.”

“This is a pivotal time in history to take these technologies and move them faster from the idea and concept to an actual product in the hands of our people,” said Rear Adm. Lorin Selby, U.S. Navy, Chief of Naval Research. “Agility and speed are critical because technology is racing at a feverish pace. Our ability to consume that technology has slowed down and that’s not the case in other parts of the world. We’ve got to reinvent, reimagine our processes and changes.”

<https://www.navsea.navy.mil/Media/News/SavedNewsModule/Article/2653578/eye-on-innovation-norfolk-naval-shipyard-participates-in-innovative-hackthemach/>

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## **Geometric Nonlinear Modeling and Simulation Study Earns NAVFAC EXWC Structural Engineer Top Individual Scientist Award**

*(DVIDS.com 16 June 21) ... Sarah MacMillan*

Naval Facilities Engineering Systems Command, Engineering and Expeditionary Warfare Center (NAVFAC EXWC) structural engineer Dr. Robert Zueck of the capital improvements department, is awarded the Dr. Delores M. Etter 2021 Individual Scientist Award for his impactful contributions to the warfighting capabilities of the Navy and Marine Corps.

In 2020, Dr. Zueck and a team of nonlinear analysts at NAVFAC EXWC wanted to discover a way to reduce fluid drag (a resistive force) from water flow and wind. They focused on a commonly accepted belief that structural vibrations amplify drag. With most of the published information supporting this



belief, codes and standards for designing ocean structures had begun to require even higher levels of applied drag force to account for how structural vibrations could amplify fluid drag. Using the correct geometric nonlinear physics, Dr. Zueck and his team discovered through specialized experimentation and simulation that vibrations do not amplify drag.

In 2018, Dr. Zueck began studying how natural, nonlinear space-time physics allows geometrically complex vibrations to initiate, grow and sustain themselves. In 2020, Dr. Zueck applied his 2018 research results to improve the Navy's capabilities for designing, analyzing, deploying and maintaining reliable subsea arrays, towed sensors, ship moorings, subsea pipelines, guyed towers, transmission lines and other cable-like Naval structures.

Since 1970, researchers have believed that vortex-induced vibrations (VIV) increase fluid drag as much as five times. The largest amplitude of VIV can occur perpendicular of the drag direction. Consequently, the larger the VIV amplitude, the more researchers believe fluid flow is altered, and therefore makes the drag load more amplified. By eliminating the above requirements for drag amplification, the Department of Defense (DOD) theoretically would be able to make marine structures lighter, safer, and ultimately less expensive, while providing better operational agility, performance and lethality.

Dr. Zueck hypothesized that VIV cannot amplify drag. His team proved his hypothesis using two separate models using experimentation and simulation. Through testing, instead of amplifying drag, both models showed that VIV slightly reduces fluid drag. Consequently, Dr. Zueck's findings were published and later presented to an international VIV subcommittee. Moreover, Dr. Zueck and his team continued to encourage academia, including the Norwegian University of Science and Technology, the **Naval Postgraduate School**, and the U.S. Naval Academy, to continue performing experiments with alternative structures to see how they interact in alternative fluid environments—in hopes of better proving Dr. Zueck's original hypothesis.

“To help put our recent research results into a broad DOD perspective, let me pose the following questions,” said Zueck. “What limits the speed of a fighter plane? What causes a rocket to veer off target? What degrades the acoustic performance of an undersea array? The answer for all three questions is the unusual vibrations that moving air, gravity or water induce into the structure of a plane, a rocket, or an undersea array. Our recent research reveals the physical basis (nonlinear relative-motion geometrics) for these unwanted vibrations, and thus helps us all eliminate these vibrations and improve the performance of military hardware beyond current limits.”

The relevance of Dr. Zueck's findings is highly impactful for the future structural development of countless DOD weapons, sensors, devices, platforms and facilities.

“Behind all research results are the giants that came before us and the team members that helped us. In each of the technical papers that I have written, I have acknowledged those who specifically helped and inspired. They deserve more recognition than I do,” said Zueck.

“At NAVFAC EXWC we anticipate and act with agility through the style of teamwork that Dr. Zueck and his team exemplify,” said Kail Macias, NAVFAC EXWC Technical Director and senior leader. “Our warfighters require initiative from our DOD engineers and scientists that anticipate, study, and solve the toughest problems, and create the high-velocity outcomes that win war or avoid them altogether.”

The Dr. Delores M. Etter Award is presented annually to scientists and engineers who have clearly demonstrated superior accomplishments—both technically outstanding and highly beneficial to the Department of the Navy and the DOD. The selection process for the Dr. Delores M. Etter Award is highly competitive, with each submission aggressively demonstrating advanced scientific and engineering achievement.

To date, three employees of NAVFAC EXWC have earned an individual Dr. Delores M. Etter Award. Both the NAVFAC EXWC Maritime Test Bed and teams from the Seismo-Hydroacoustic Data Acquisition System have also earned a Dr. Delores M. Etter Team Award.

[DVIDS - News - Geometric Nonlinear Modeling and Simulation Study Earns NAVFAC EXWC Structural Engineer Top Individual Scientist Award \(dvidshub.net\)](#)

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## Community Newsletter: Racine County Emergency Management

(The Journal Times 19 June 21) ... David Maack

Sheriff Christopher Schmaling recently recognized the Emergency Operations Center (EOC) team with a Unit Citation at the Racine County Sheriff's Office awards ceremony.

The citation read, "The Racine County Emergency Operations Center Team came together in collaboration to prepare, protect and provide for the citizens of Racine County during the COVID-19 pandemic. Their quick response to an unprecedented situation placed Racine County in a favored position whether it was obtaining personal protective equipment for distribution, establishing testing sites, setting up and maintaining isolation centers, monitoring hospital bed usage, or reaching out to local and state resources."

Team members recognized were captains James Weidner, Dan Adams and Cary Madrigal; lieutenants Shawn Barker and James Evans; Sgt. Kelly Goetzke; deputies David Fisher, Jarod Kroll and Steve Storm; Emergency Management Director David Maack; Emergency Management Deputy Director Jay Kerner; Racine County Communications and Media Relations Director Mark Schaaf; RAPD Lt. Mark Esch; South Shore Fire Department Chief Robert Stedman; Environmental Health Director Keith Hendricks; and Central Racine County Health Department, City of Racine Health Department Environmental Health Director Marcia Fernholz.

### Seminar

Racine County officials recently took part in a scenario based "Executive Education" seminar. In partnership with Racine County Emergency Management, the **Naval Postgraduate School Center for Homeland Defense and Security (CHDS)** developed this executive level seminar to explore homeland security and emergency management challenges confronting our area.

The scenario centered on a complex coordinated attack in Racine County and participants were asked to identify challenges that they would face responding to incidents occurring in several different locations as well as identifying "cascading consequences."

This educational seminar was facilitated by a CHDS panel comprised of nationally recognized subject matter experts including Chief Clark Kimerer, Seattle Police Department (retired); James Featherstone, executive director of the Los Angeles Homeland Security Advisory Council; Jody Ferguson, Pierce County Department of Emergency Management director; and Col. Bob Stephan (U.S. Air Force, retired), former assistant secretary of Homeland Security for infrastructure protection.

[Community Newsletter: Racine County Emergency Management | Faith & Community | journaltimes.com](#)

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## FACULTY:

### ONR Awards Two NPS Faculty with Young Investigator Program Honors

(Navy.mil 18 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class Lenny Weston

(NPS.edu 18 June 21) ... Mass Communication Specialist 3<sup>rd</sup> Class Lenny Weston

Two Naval Postgraduate School (NPS) professors recently earned the Office of Naval Research (ONR) Young Investigator Program (YIP) Award, a highly competitive early-career award program for academic scientists and engineers that recognizes creative research with potential for a significant scientific breakthrough.

Assistant Professor of Oceanography Dr. Derek Olson and Assistant Professor of Mechanical and Aerospace Engineering Dr. Andy Nieto were among 38 participants selected from 260 applicants for the prestigious research award, which provides funding over a three-year period to further their research for the U.S. Navy and Marine Corps.





"Early career awards are critical for building our new generation of scientific leaders, and even more so in this era of more limited research funding availability," said previous YIP awardee NPS Professor of Oceanography John Colosi, noting also that the selection of two faculty members reflects exceptionally well on NPS.

Not only will this facilitate recruitment of talented young scientists, he said, but the YIP committee specifically looks for institutions with strong mentors to develop young researchers into future national and global leaders.

While both Olson and Nieto are junior professors, they both showed exceptional creativity in their various research.

Olsen's work is focused on reducing false alarms while using Sound Navigation and Ranging (SONAR). An invaluable tool for all mariners, SONAR works by sending out a signal and measuring the returned signal as it bounces off different surfaces under the water. An underwater image of a seafloor littered with rocks, barrels and the like, however, might look similar to one filled with underwater mines.

His research, entitled "The Structure of Complex Seafloor Environments: Acoustic Remote Sensing and Inference," is able to discern between these by utilizing ocean acoustics to hone in on specific mapping of objects with SONAR.

"Think of SONAR like the light from a flashlight in a dusty room," Olsen said. "You shine the light and are able to see dust because the light is bounding back off of the particles. If we understand the way false alarms show up, we can do a better job of rejecting them so we don't waste our time looking for rocks when we should be looking for mines."

Moving above the water line, Nieto's research – "Functionally Graded Cold Sprayed Hybrid Coatings for Multi-Material Structural Repair and Wear Protection" – focuses on cold spraying metal for wear resistance.

"Cold spraying" is not necessarily cold, he noted, but uses lesser temperatures than most metallurgy processes use. Nieto likened the process to spray painting your house, only the paint is heated with gas and then sprayed at supersonic speeds to create layers as it impacts metal particles.

"The first half of the project is developing wear resistant coatings for metals, mostly magnesium and aluminum," Nieto said. "Then the second half of the project is going to take that learning of new composite compositions and use the nanomaterials for better adhesion strengths to protect polymeric materials."

Nieto and Olson were elated to find out they had been selected to receive ONR's YIP Award.

"I couldn't believe it," Nieto said. "It's just about as prestigious an award as any young faculty could win at any university."

Olson noted, "It's really competitive and not like a usual grant. I'm extremely happy and honored to be named a recipient!"

The award will enable Nieto and Olson to procure costly equipment and materials necessary for their research and provide the opportunity to conduct their thesis work on these emerging, relevant technologies.

"For students, it enriches their curriculum," said Nieto. "We're equipping naval officers to be subject matter experts, and when they leave here with new techniques and innovations that are relevant are being used, then I think it motivates them and really enriches their education."

The Office of Naval Research (ONR) Young Investigator Program seeks to identify and support academic scientists and engineers who are in their first or second full-time tenure-track or tenure-track-equivalent academic appointment, who have received their doctorate or equivalent degree in the past seven years, and who show exceptional promise for doing creative research. The objectives of this program are to attract outstanding faculty members of institutions of higher education to the Department of the Navy's Science and Technology (S&T) research program, to support their research, and to encourage their teaching and research careers.

[ONR Awards Two NPS Faculty with Youth Investigator Program Honors > United States Navy > News-Stories](#)

[ONR Awards Two NPS Faculty with Young Investigator Program Honors - Naval Postgraduate School](#)





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## **Trained observer noted ‘agents provocateur’ during Capitol riot amid new report govt. operatives may have been involved**

*(BPR 16 June 21) ... Jon Dougherty*

Reports Tuesday suggesting that elements of the national security and federal law enforcement establishment may have been involved in planning and fomenting the Jan 6 riot sound shockingly similar to observations made a week after the incident by a trained analyst who’s an expert in “propaganda, political warfare, psychological warfare, and subversion.”

During his opening monologue, Fox News’s Tucker Carlson discussed court documents filed by federal prosecutors related to suspects arrested following the Capitol protest. Some of those documents mention “unindicted co-conspirators” who appear to have been involved in the rioting and who also seem to have committed harsher offenses but nevertheless have not been charged.

“‘Person Two’ and ‘Person Three’ were organizers of the riot,” Carlson said, referencing how they are described in the federal court documents. “The government knows who they are, but the government has not charged them. Why is that?”

“You know why. They were almost certainly working for the FBI. So FBI operatives were organizing the attack on the Capitol on January 6, according to government documents. And those two are not alone,” Carlson alleged.

In all, said the host, “upwards of 20” unnamed “Persons” were listed in the charging documents, none of whom have been arrested.

“Are you shocked? You shouldn’t be. In March, the FBI director admitted the bureau is infiltrating as many dissident groups as it possibly could,” said Carlson.

The Fox News host’s speculation comes just months after published observations of events during the day of the riot by J. Michael Waller, a senior analyst for strategy at the Center for Security Policy, a former instructor with the **Naval Postgraduate School**, and an instructor/lecturer at the John F. Kennedy Special Warfare Center and School at Fort Bragg.

In a Jan. 14 column at *The Federalist*, Waller explained that he had originally not planned to attend the rally by then-President Donald Trump but, at the last minute, he and “a companion” decided to go and “see what we could see.”

“The deadly riot at the U.S. Capitol bore the markings of an organized operation planned well in advance of the Jan. 6 joint session of Congress,” Waller explained.

“A small number of cadre appeared to use the cover of a huge rally to stage its attack. Before it began, I saw from my vantage point on the West Front of the Capitol what appeared to be four separate cells or units,” he added.

He went on to describe the participants as “plainclothes militants,” “agents-provocateur,” “fake Trump protesters,” and a “disciplined, uniformed column of attackers.”

The latter was a “column of organized, disciplined men, wearing similar but not identical camouflage uniforms and black gear, some with helmets and GoPro cameras or wearing subdued Punisher skull patches.”

“I have witnessed and participated in scores of protests since the 1970s when as a high school student I was trained by professional agitators from California,” Waller continued.

Some of his early observations included a light Capitol Police presence “for such a large event,” and other oddities including the movement and actions of the aforementioned groups. The vast majority of people, legitimate Trump supporters, were well-behaved and followed rules and procedures, Waller noted.

The groups he mentioned, however, immediately stuck out to him as palpable tensions built ahead of the actual rioting.



“Some appeared awkward, the way someone’s body language inadvertently shows the world that he feels like he doesn’t fit in. A few seemed to be nursing a deep, churning rage,” he wrote, adding: “They generally covered their faces with cloth masks, as opposed to the pro-Trump people, few of whom wore masks at all. They walked, often hands in pockets, in clusters of perhaps four to six with at least one of them frequently looking behind.”

As he entered the Capitol Grounds, Waller noted that flags were raised over the Senate and House chambers, indicating they were in session and that Vice President Mike Pence was on hand to certify electoral votes. And usually, he noted, that necessitated a healthy presence of Capitol Police.

“Yet no Capitol Police appeared anywhere from what we could see, and I commented on to my companion that it was very strange for there to be no police during a joint session of Congress, with or without a gigantic crowd,” he wrote.

As crowds encroached on the Capitol Complex, Waller noted that tension built even more and eventually something occurred that appeared to set the whole riot in motion.

“Something seemed to break loose a second time toward the front, but we couldn’t tell what it was,” he wrote. “More tear gas. A canister struck a girl in the face, drawing blood. The pro-police crowd went from disbelief and confusion to anger. A few dozen members of the crowd, mostly young men, raced up a narrow path on the stone steps behind the façade and a limestone wall, facing a few police at the top, who tried to stop them.”

With the situation spinning out of control, at one point Waller noted, “Then, from the north, a column of uniformed, agile younger men walked briskly, single-file, toward the inaugural stand. They came within two feet of me. Their camouflage uniforms were clean, neat, and with a pattern I couldn’t identify.”

“Now there were a good three dozen of them, moving in a single, snakelike formation. They were organized. They were disciplined. They were prepared,” he wrote. “‘We’re taking the Capitol!’ the first or second announced.”

In his monologue, Carlson concluded: “If you empower the government to violate civil liberties in pursuit of a foreign terror organization, and there are foreign terror organizations, it’s just a matter of time before ambitious politicians use those same mechanisms to suppress political dissent. That’s what we’re seeing now. We should have seen it earlier.”

[Trained observer noted 'agents provocateur' during Capitol riot amid new report govt. operatives may have been involved \(bizpacreview.com\)](#)

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## What to Watch for in the Iranian Elections

(*NationalInterest* 16 June 21) ... Michael Rubin

Iranians are heading to the polls to elect a new president as incumbent Hassan Rouhani is limited by law to two consecutive terms. The Islamic Republic, of course, is not a democracy. Ultimate authority rests with figures and institutions that Iranians do not popularly elect. The Guardian Council regularly culls more than 95 percent of candidates seeking top posts. The Supreme Leader rules not only as a political leader but also as, essentially, the placeholder of the messiah. During his most recent Persian New Year’s address, Supreme Leader Ali Khamenei outlined the characteristics he sought in the presidency:

He should be competent. He should possess managerial qualities and competence. Secondly, he should be religious. If he were irreligious, then it would not be possible to trust him. An irreligious person will sell the country and its interests and people. After that, he should be after justice and fight against corruption. This is one of the most important characteristics that a president should possess. He should pursue justice in the real sense of the word and want to fight against corruption in the true sense of the word. He should have a revolutionary and jihadi performance. One cannot work in a pretentious and



ceremonial manner. Presidential candidates should be sure about the capabilities of the country. They should also believe in the youth.

The Islamic Revolutionary Guard Corps, the supreme leader's muscle, justified an active approach, or "maximum and conscious participation" in its words. For the Guards, the outcome may not be equal to the top vote-getter.

There are seven candidates competing for the top slot, although only three—Judiciary Chief Ebrahim Raisi, former Central Bank Governor Abdolnaser Hemmati, and former nuclear negotiator and Supreme National Security Council head Saeed Jalili—appear serious. Islamic Revolutionary Guard Corps veteran and former Khatami-era Vice President Mohsen Mehralizadeh, perennial candidate and former Revolutionary Guards' chief Mohsen Rezaei, parliamentarian Alireza Zakani, and Parliamentary Deputy Speaker Amir-Hossein Ghazizadeh Hashemi appear to have few paths to the presidency.

The clear favorite is Raisi. I have been tracing Raisi's rise for several years. Today Iranians, analysts, and diplomats in Tehran with whom I have spoken consider Raisi the front-runner not only because he has religious credentials, but also because it allows him a clearer path to the supreme leadership should the eighty-two-year-old Khamenei, already a cancer survivor, die in the coming years. After all, when Ayatollah Ruhollah Khomeini, Iran's first supreme leader, died in 1989, it was Khamenei, then the sitting president, who succeeded. **Naval Postgraduate School** scholar and Revolutionary Guards expert Afshin Ostovar, however, warns that many front-runners disappoint and that Khamenei could be setting Raisi up to fail. Losing the election could strike a blow to Raisi's legitimacy and clear a path for Khamenei's own son, Mojtaba Khamenei to stake a claim to the supreme leadership.

Jalili also meets Khamenei's stated characteristics for a leader. Should he remain in the race—and it is possible he will still drop out—he could siphon off enough votes to deny Raisi a majority and force a second round. This could clear a path for a showdown with Hemmati as a dark horse candidate. This, effectively, was how former Culture Minister Mohammad Khatami won the presidency in 1997. That said, Khamenei may not be willing to make the same mistake twice. Khatami channeled the hopes of the young but then disappointed. The 1999 student protests, however, shook the regime to its core and gave Khamenei his first real scare. Splitting the principalist vote might also be a means to truly embarrass Raisi if Ostovar is correct, especially if a split vote knocks Raisi out of a second round.

A few notes of caution: There is an irony that U.S. politicians and politicians pour-over and analyze polling data for months before and after elections. Donald Trump and Hillary Clinton before him cast doubt on the sanctity of polling and election data. And, yet, too often journalists and diplomats take information and statistics provided by the Iranian regime with regard to votes and participation at face value. Iran carefully controls reporters. Those favored by the regime for their ideology or willingness to self-censor may get visas, but reporting from northern Tehran about the rest of the country is like opining from the Upper West Side of Manhattan about Watertown or Buffalo.

To focus on the outcome of the Iranian presidential election may be interesting, but ultimately it is not hugely relevant. To project power on the presidency based on the experiences of the institution inside the United States or European countries is to mirror the image in a distortive way. The real questions to consider are who "won," whether there will be a second round in August, and also the level of participation. For the latter, look for hard data about the periphery, especially in the Kurdish, Azeri, Arab, and Baluch regions, for this will be the true indicator of both regime legitimacy and a barometer of potential unrest when Khamenei does ultimately die. When it comes to Iranian elections, it is important never to trust, but always to verify.

[What to Watch for in the Iranian Elections | The National Interest](#)

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## ALUMNI:

### Central Arizona Fire and Medical Authority Fire Chief Completes Executive Leaders Program at Naval Postgraduate School

*(SignalsAZ 15 June 21)*

Scott Freitag, Fire Chief of the Central Arizona Fire and Medical Authority, completed the Executive Leaders Program at the Naval Postgraduate School Center for Homeland Defense and Security (CHDS) on June 10.

Chief Freitag has served as Fire Chief since coming to Arizona in August 2013. He and his team created the first Fire Authority in the State in 2016. The agency is the largest fire and emergency medical response organization in Yavapai County serving 365 square miles and protecting a population of over 100,000.

Chief Freitag currently serves as the President of the Arizona Fire Chiefs Association as well as serving on a number of other state and local boards.

He earned a Bachelor of Science degree and a Master of Business Administration from Lindenwood University. He has also completed the Executive Fire Officer Program through the National Fire Academy and earned his Chief Fire Officer Designation from the Center for Public Safety Excellence.

During the 12-month online program, Freitag collaborated with homeland security officials from across the nation on current policy, strategy, and organizational design challenges.

The NPS-CHDS participants represent a snapshot of the homeland security enterprise, including professionals from the fields of emergency management, education, law enforcement, fire service, homeland security, public health, private sector, and city/county government. Located at the Naval Postgraduate School (NPS), CHDS is the nation's homeland security educator.

Executive Leaders Program participants develop critical thinking, leadership, and policy skills during a rigorous 12-month program. CHDS is sponsored by the U.S. Department of Homeland Security (DHS), National Preparedness Directorate, within the Federal Emergency Management Agency (FEMA).

<https://www.signalsaz.com/articles/central-arizona-fire-and-medical-authority-fire-chief-completes-executive-leaders-program-at-naval-postgraduate-school/>

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### Test pilot's career follows unexpected flight path

*(Red Stone Rocket 16 June 21) ... Katie Davis*

Ask most pilots if they have always wanted to fly and their answer is usually unequivocally, yes.

Maj. Zach Keefer ... not exactly.

With his secondary schooling at Marion Military Institute, followed by four years at the U.S. Military Academy, Keefer's future appeared to be firmly in infantry.

"I rode on a Black Hawk for the first time – and everything changed. 'There's nothing else I can do. I've got to do that,'" Keefer said.

Keefer, who hails from Raleigh, North Carolina, has spent his military career in the skies as an Army experimental test pilot. While becoming a pilot was not always on the horizon, being a Soldier was. After test pilot school, Keefer obtained a master's at the **Naval Postgraduate School** and since then, has been in the skies.

His most recent assignment to the Combat Capabilities Development Command Aviation & Missile Center has been different than previous assignments, he said, as transitioning to a new duty assignment during COVID-19 made it harder to meet new co-workers. But with two small children at home, Keefer said he was very grateful to DEVCOM AvMC leadership for the flexibility and opportunity to telework during the pandemic.

When he is not in the cockpit, Keefer likes to spend time with his kids, who know that he is a pilot but beyond that "don't think it is nearly as interesting as I do," he said with a laugh.



Keefer also likes to fabricate items in his spare time, which is what he said makes AvMC such a good fit for him.

“We prototype, quickly fabricate – and then substantiate the airworthiness of that fabricated piece. And then we will fly it within 11 months, which is really unheard of in Army standards. It is cool to actively solve problems and provide quick, meaningful solutions to Soldiers,” he said.

While nowhere close to retiring, Keefer’s years in uniform have given him a hard-won perspective that he recommends to younger officers just beginning their military career.

“When I started in the Army, I was pretty young and arrogant – I thought I had all the answers,” Keefer said. “It took me quite a while to realize there are a lot of people out there who are very smart, very intelligent – masters of their craft. As officers, it is incumbent upon us to recognize that everybody brings a unique gift to the table.”

[Test pilot’s career follows unexpected flight path | Military Scene | theredstonerocket.com](#)

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## **NUWC Division Newport selects senior technologist for Acoustic Signal Processing**

*(NavSea.navy.mil 17 June 21)*

David Pistacchio of the Naval Undersea Warfare Center (NUWC) Division Newport Sensors and Sonar Systems Department and resident of Narragansett, Rhode Island, has been selected as senior technologist for Acoustic Signal Processing. In this role, Pistacchio will be the primary Navy advisor and consultant in the discipline of active and passive acoustic signal processing applied to research and development programs nationally and internationally.

Pistacchio has been serving as the Undersea Sensors Technology senior scientist technical manager since 2017, where he has led acoustic superiority efforts for the Virginia and Columbia-class platforms and SSN(X). He also focused on technical innovations associated with the Office of Naval Research (ONR) Task Force Ocean project, and new processing algorithms related to acoustic transients, underwater communication, and active sonar waveform design.

Over his 39-year career, Pistacchio has served in a variety of key leadership positions within the undersea domain, including distinguished scientist/engineer, deputy technical director for Technical Excellence, and director of Engineering for the Sensors and Sonar Systems Department. He also served as the NAVSEA technical warrant holder for Submarine Sonar Systems, and has provided systems engineering support to NAVSEA, the Office of the Chief of Naval Operations, ONR, the Defense Advanced Research Projects Agency, and the Office of Naval Intelligence.

He has earned numerous awards and accolades, including the National Defense Industrial Association (NDIA) Vice Adm. Charles B. Martell-David Bushnell Award, the NDIA Undersea Warfare Bronze Medal, the NUWC Technical Director's Award for Technical Excellence, and a Department of the Navy Meritorious Civilian Service Award.

Pistacchio earned a bachelor’s degree in bioengineering from Syracuse University in Syracuse, New York, and a master’s degree in engineering acoustics from the U.S. **Naval Postgraduate School** in Monterey, California.

[NUWC Division Newport selects senior technologist for Acoustic Signal Processing > Naval Sea Systems Command > Saved News Module \(navy.mil\)](#)

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## **Global Air Logistics and Training, Inc. (GALT) is very pleased to announce that retired Vice Admiral Mat Winter has joined GALT's Board of Directors.**

*(Prnewswire 18 June 21)*

Mat currently is the President of Winter Strategic Solutions, LLC. Prior to that position, he completed a distinguished 35+ year Navy career with his final two marque leadership positions being the 24th Chief of Naval Research, where he led the Navy's global Science and Technology Enterprise, and as the F-35 Joint Strike Fighter Program Director, where he led a Global Enterprise with over \$30 billion annual budget and had significant responsibilities for modernization, production and global operations of the world's most advanced 5th generation strike fighter. His formal technical and business education from the University of Notre Dame (BS ME), the **Naval Postgraduate School** (MS Computer Science) and the National Defense University (MS Natural Resource Strategy) underpins his impactful operational warfighting and extensive business and technology experiences at the highest levels of the public trust.

### **Vice Admiral Mat Winter**

All of these qualities and experiences make Admiral Winter a perfect fit to help guide GALT in achieving its near and long term profitability and strategic growth goals.

GALT is a non-traditional, veteran-owned small business that delivers premier command, control and communications (C3) solutions in support of the Department of Defense. GALT's combination of technical innovation and fast-paced execution unleashes new capabilities, bolsters security, and transforms information flow. GALT specializes in open, scalable, and tailorable communications architectures, rapid prototyping, and user experience design.

[Global Air Logistics and Training, Inc. \(GALT\) is very pleased to announce that retired Vice Admiral Mat Winter has joined GALT's Board of Directors. \(prnewswire.com\)](https://prnewswire.com)

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## **Bank of America Women's Leadership Series Spotlights Trailblazing Women Breaking Barriers in Space Exploration [Video]**

*(Asia Society 18 June 21)*

Asia Society Texas Center wrapped up the sixth year of its Bank of America Women's Leadership Series with a third and final webcast celebrating women in space exploration who have broken barriers on earth – and beyond. NASA flight director Pooja Jesrani, astronaut and Marine Corps test pilot Jasmin Moghbeli, and NASA's Jet Propulsion Lab (JPL) principal systems engineer Grace Tan-Wang joined moderator Rose-Ann Aragon, Space Reporter for KPRC Channel 2 News, for a conversation about how they got started in their space careers, what their work is like, and their advice for future generations.

### **Beginning the journey**

The three speakers each shared how they began their journeys into their space careers and emphasized the immense influence from their families. Moghbeli, born in Germany, spoke about her parents' courage in fleeing Iran after the 1979 revolution and how they began a new life in New York, where she was raised. Jesrani attributed her initial interest in space to her father, whose own avid interest in space began early and persisted throughout his life even as he became an orthopedic surgeon.

Tan-Wang shared a similar story of learning the importance of hard work and trying new things from her mother, who along with Tan-Wang's father had immigrated from China for new opportunities in the U.S. As an engineer, Tan-Wang's mother also set an early example for her of a successful woman in STEM. Tan-Wang said when she herself was studying at MIT, women made up only 25 percent of the class, but shared that today women are closer to half of the class and are represented across every discipline.



## **A day on the job**

Aragon invited the speakers to share more details about what their jobs entail, including daily life and any particular challenges. Jesrani, as a flight director, manages mission control to support human space flight, which she explained falls into two main parts: planning and execution. Planning includes vehicle dockings and undockings, space walks, science and maintenance, while execution is making sure everything lines up and goes smoothly on the day of, which requires grace under pressure and the ability to calmly figure out logistics and solve problems when things go awry.

At JPL, Tan-Wang explained the focus is on systems in space rather than humans in space — that is, robotic, non-human space exploration such as the Mars rover Perseverance, which she worked on since its early stages of inception, as well as previous rovers Spirit, Opportunity, and Curiosity. She described her job as systems engineer as focused on the big picture and figuring out how to put all the pieces together; a typical day involves meeting with different teams working on a project for hardware, software, and testing. The work requires collaboration, intellectual curiosity, and a healthy amount of paranoia, according to Tan-Wang, to think about what might go wrong and to solve for it.

Moghbeli, who is part of the Artemis generation of astronauts, said that her training was incredibly diverse: one day might involve studying biomedical, while another day would cover robotics, geology, or learning Russian. The Artemis mission's goal is to return humans to the moon, landing the first female astronaut and next male astronaut by 2024. As Moghbeli explained, because there is such a small group of people involved, each person has to learn a wide range of skills to ensure they can work together to solve problems while in space. For her, she said the most challenging moment of training was putting on the space suit and confronting how difficult it was to move within it, leaving her feeling clumsy, exhausted, and even doubtful about her own abilities. But Moghbeli sees doubt as a natural part of growth. "If you're pushing yourself to your max potential, you will absolutely fail," she said. "What's really important is not to let that overcome you."

## **The strength of collaboration and diversity**

There was a strong emphasis on the importance of teamwork throughout the program, as each speaker noted the incredible level of collaboration needed for each of their jobs to succeed. Moreover, Jesrani noted that "we're really standing on the shoulders of giants," pointing to all the people who came before them and the work that has been done. She is the first female flight director of South Asian descent — and the 15th female flight director in history, out of 101 flight directors — but she noted that over time she is seeing more and more women in mission control.

Jesrani and Moghbeli both emphasized that diversity is vital, particularly diversity of thought and perspectives, as well as of representation of different backgrounds and experiences. Tan-Wang added that their jobs at NASA require a lot of ingenuity and innovation, and indicated that diversity spurs new ideas and better solutions.

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## **Advice for future space explorers**

The audience had a chance to ask questions to the speakers, and provided an opportunity for some lighthearted responses. When asked about her favorite TV show, movie, or book about space, Jesrani responded without hesitation, "Apollo 13" and tied it back to an earlier conversation about teamwork and problem-solving. Moghbeli shared her enthusiasm for music, including playing the drums and the numerous guitars displayed on the walls behind her.

When asked their advice for students and future generations interested in pursuing space exploration, the speakers unanimously endorsed finding interests you are passionate about and pursuing them. While good math and science skills are foundational, Moghbeli added to not feel pressure to follow a checklist but rather to find room to grow; she shared that she had pursued sports along with her aerospace engineering degree at MIT. Jesrani also highlighted the need to develop good social and emotional skills, noting again how collaborative and people-oriented the work is.



“Figure out what you feel passionate about, work hard,” said Tan-Wang. “Then it shows that this is what you love and you really enjoy it, and you will do whatever it takes to get it right.”

Jasmin Moghbeli was selected by NASA to join the 2017 Astronaut Candidate Class. She reported for duty in August 2017 and having completed the initial astronaut candidate training is now eligible for a mission assignment. The New York native earned a Bachelor of Science degree in Aerospace Engineering with Information Technology at the Massachusetts Institute of Technology and a Master of Science in Aerospace Engineering from the **Naval Postgraduate School**. Moghbeli, an AH-1W Super Cobra pilot and Marine Corps test pilot, has over 150 combat missions and 2,000 hours of flight time in over 25 different aircraft. She is also a distinguished graduate of the U.S. Naval Test Pilot School in Patuxent River, MD.

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