Weekly Media Report – March 22-28, 2022

GRADUATION:

USMC Deputy Commandant for Information Honors NPS Winter Quarter Graduates

(Navy.mil 25 Mar 22) … Mass Communication Specialist 1st Class Nathan K. Serpico
(NPS.edu 25 Mar 22) … Mass Communication Specialist 1st Class Nathan K. Serpico

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EDUCATION:

Massachusetts Institute Of Technology: Reviving War-Game Scholarship At MIT

(India Education Diary 24 Mar 22)

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How the Navy is Recruiting Top Tech Talent

(Gov CIO 25 Mar 22) … Nikki Henderson

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RESEARCH:

NPS Research Seeks to Advance Aircraft Turbine Resilience to Particulates

(Navy.mil 24 Mar 22) … Rebecca Hoag
(NPS.edu 24 Mar 22) … Rebecca Hoag
(Phys.org 28 Mar 22) … Rebecca Hoag

In late 2015, two Marines were killed and 20 others injured after a MV-22 Osprey crashed during pre-deployment training at Bellows Air Force Base in Hawaii. The culprit … Airborne sand and dust particulates caused brownout conditions for the aviators and were ingested into the aircraft's engines, melting due to the high temperatures and degrading internal components compromising the aircraft's power and lift.

NPS Professor, Students Issued Provisional Patent for Liquid Air Energy Storage, Recovery System

(NPS.edu 24 Mar 22) … Javier Chagoya

A provisional patent has been issued for this prototype Stirling dual-engine apparatus constructed by NPS Systems Engineering students Lts. Christopher Girouard and Nicholas Bailey, with the support of advisor Dr. Anthony Pollman. The students' theses led to this novel approach, using a dual-Stirling engine charge and recovery method for liquid air energy storage (LAES) systems.

OPINION:

From Bombs to Bits: Air-to-Ground Operations as a Model for the Tactical Information Environment

(War on the Rocks 25 Mar 22) … Terry Traylor and David Nass

The lethality of American air power lies not only in aviation technology but in strategies developed for deploying it. Over the last century, aviation has evolved from its initial role as strategic reconnaissance in World War I to modern stealth bombers, attack helicopters, and hand-launched killer drones. As part of this transformation, personnel roles have evolved as well. Pilots are assigned to ground units to advise mid-level commanders, while specific ground operators are trained as tactical air controllers to advise the lowest-level commanders. These ground air controllers are also equipped with radios, tablets, lasers, and drones to spot and identify the enemy… David Nass is a Marine staff non-commissioned officer with operational experience in both conventional and special operations units. He has served as a joint terminal attack controller for over 10 years with operational deployments in support of Operation Enduring Freedom and Operation Inherent Resolve. He is currently a graduate student in the Defense Analysis Department at **Naval Postgraduate School.**

FACULTY:

The Kids Aren't Alright

(The Libertarian Republic 22 Mar 22) … David R. Henderson and Ryan Sullivan

One of the awful ironies of the pandemic lockdowns is that the people least at risk from Covid were among those whom the lockdowns hurt the most. We refer, of course, to the restrictions placed on children. Parks, zoos, and swimming pools were shut down. Little League seasons were canceled. In many states schools went remote for over a year. The evidence shows that these disruptions have had a substantial impact on children's learning, their expected lifetime incomes, their life expectancies, and their mental health. The kids are not alright… David R. Henderson is a Senior Fellow with the American Institute for Economic Research.
He is also a research fellow with the Hoover Institution at Stanford University and emeritus professor of economics with the **Naval Postgraduate School**, is editor of The Concise Encyclopedia of Economics.
David was previously the senior economist for health policy with President Reagan's Council of Economic Advisers.

FERN's Back Forty: Rethinking How We Feed the Troops

(The Fern 22 Mar 22) … Bridget Huber

The Pentagon recognizes climate change as a "destabilizing force." To meet this growing national security threat, it urges adaptation, resilience and mitigation. In a recent commentary, Leo Blanken, a professor in the Defense Analysis Department at the **Naval Postgraduate School**, and Ben Cohen, a student in the school's Applied Design for Innovation program, argue that sustainable agriculture should be part of the military's climate change strategy. Modernized victory gardens—container farms that use hydroponic or aeroponic systems and can theoretically generate as many vegetables as a five-acre farm while using a fraction of the water and fertilizer—could help improve the health of soldiers while reducing expenses and the military's environmental footprint, they argue. Given that the way we produce, process and package food accounts for more than a third of all anthropogenic greenhouse-gas emissions worldwide, it seems worth exploring. That same technology could help U.S. allies become more food secure, and strengthen partnerships. And if the Department of Defense turned its vast research capacity toward climate-friendly farming techniques, it could help push forward the entire field of sustainable agriculture. This conversation has been edited for length and clarity.

Which Comes First: Happiness or Success?

(Fast Company 22 Mar 22) … Stephanie Vozza

It's a chicken-and-the egg question. Which comes first: happiness or success? Does success make you happy, or does happiness make you more likely to succeed?

That's the question Paul Lester, associate professor of management at the **Naval Postgraduate School**; Martin Seligman, director of the University of Pennsylvania's Positive Psychology Center; and the late Ed Diener, an influential American psychologist, attempted to answer.

"What Comes First, Happiness or Success?"

(Your Decommissioning News 25 Mar 22) … Terry Thompson

Q: "I've been asking myself a chicken and egg question for a while. At work, what comes first, happiness or success? Does success make you happy? Or does happiness make success? I don't see a clear answer. Is there just one?" " – Lorient

A: Dear Lorian, as amazing as this may sound, there really is a clear and distinct answer to your existential question. I discovered it in a recent study led by Paul Lester, professor of management at the **Naval Postgraduate School** in Monterey, California. Let's look at this together.

University Experts: Cyber War With Russia Uncertain

(Gov Tech 25 Mar 22) … Zach Edmondson

Cybersecurity and national security experts at Kennesaw State University, Duquesne University and the **Naval Postgraduate School** say Russia may target private enterprise, supply chains or no one, and only time will tell.

ALUMNI:

Sterling Native Named Commander of Navy Recruitment Group

(Shaw Local 21 Mar 22)

Sterling native Cmdr. Jason Nelson is the new commanding officer of the Navy Talent Acquisition Group Heartland, the Navy said in a news release Monday… He reported as executive officer of NTAG Heartland in August 2020. His background includes a master's of science in modeling, virtual environments, and simulation from the **Naval Postgraduate School** and an associate's degree in Spanish from the Defense Language Institute.

Lieutenant General (Retired) Paul Ostrowski, Former Principal Military Deputy to Assistant Secretary of the Army, Acquisition, Logistics, and Technology (ASA ALT) Joins Vita Inclinata As Senior Advisor

(Yahoo! Entertainment 22 Mar 22)

Vita Inclinata (Vita), developer and producer of helicopter and crane load stabilization and precision hardware, today announced retired three-star General Officer Paul Ostrowski, U.S. Army, has joined the company as a Senior Advisor. A known Capitol Hill entity with extensive Congressional… In addition, he is a graduate of the United States Military Academy at West Point and earned a Master of Science in Systems Acquisition Management from the **Naval Postgraduate School** and a Master of Science in National Resource Strategy from the Industrial College of the Armed Forces/Eisenhower School in Washington D.C.

Lansing Board of Fire Commissioners Recommends Two Candidates for Fire Chief

(Fox 47 News 24 Mar 22) … Margaret Cahill

The Lansing Board of Fire Commissioners recommended Brian Sturdivant and Edwin Miller for the position of fire chief Thursday night… Sturdivant holds an undergraduate degree in Public Safety Administration from Grand Canyon University and a graduate degree from the **Naval Postgraduate School**, Center for Homeland Defense.

NASA and ESA Assign Their Astronauts for One of the Future Missions to the ISS

(Paris Beacon 24 Mar 22)
(Iran International 24 Mar 22)
(Space Ref 24 Mar 22)

Science Writing, March 24 (Latest).- The American and European space agencies, NASA and ESA, have selected two astronauts for the SpaceX Crew-7 mission to the International Space Station (ISS): Jasmin Moghbeli and Andreas Mogensen will be the commander and the pilot of the ship, respectively… This will be the first spaceflight for Moghbeli, who became a NASA astronaut in 2017; She is from Baldwin, New York, and earned a bachelor's degree in aerospace engineering from the Massachusetts Institute of Technology and a master's degree in aerospace engineering from the **Naval Postgraduate School** in Monterey, California.

Thomas C. Sivak Appointed FEMA Region 5 Administrator

(FEMA 28 Mar 22)

Thomas C. Sivak, recently appointed as regional administrator of the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA), began his service on Monday, March 28, 2022. As Region 5's administrator, Sivak will lead and coordinate all activities in support of FEMA's mission with the states of Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin and 34 federally recognized tribes in the region… Sivak is a Certified Emergency Manager through the International Association of Emergency Managers and a graduate of the Executive Leadership Program at the **Naval Postgraduate School** Center for Homeland Defense and Security. He holds a Master of Science in Public Service Leadership from DePaul University as well as a Bachelor of Arts degree from Marquette University and is originally from East Cleveland, Ohio.

The New Face Of Security For Healthcare

(For Reports 29 Mar 22) … Becca Roberts

Health data is notoriously vulnerable to hacking. The pandemic has taken a toll on industry resources, and data quality and security are suffering as a result. Additionally, the rise of mobile applications, the advent of mobile workstations, and the ease with which businesses can now expand to cloud accounts have made the industry more vulnerable than ever. In short, "the attack surface" is now vast… In his role at CP North America, Mark serves as vice president of CP Technologies and CP Systems, overseeing the product and business development of the company's standard and custom high-performance computing platforms, LCD (displays), storage arrays, networking hardware and data interconnects military, industrial and commercial markets. Mark previously served 26 years in the military, most recently as a Captain in the US Navy as a program manager for the Naval Information Warfare Systems Command (NAVWAR). He earned a BS in mechanical engineering from the US military at West Point and an MBA from the **Naval Postgraduate School**.

UPCOMING NEWS & EVENTS:

Apr 4-8: Center for Executive Education NSLS Workshop
Apr 19-21: Naval Research Working Group
Apr 26: Center for Executive Education SCW Workshop

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U.S. Marine Corps Lt. Gen. Matthew Glavy, Deputy Commandant for Information, served as the commencement speaker for the 248 graduates, including 28 international students from 15 countries. He began by acknowledging the current geopolitical climate and lingering consequences of the COVID-19 pandemic and how these trials affected the graduates time at NPS.

Glavy continued his remarks by quoting President George H.W. Bush, who said, "The best and brightest military officers from the U.S. and around the world are assigned to the Naval Postgraduate School."

"Your boldness, insight, imagination and innovation will have to be brought to bear to get the full value of your NPS education," said Glavy. "They've instilled in you an insight that very few people get in this world.

"I was never assigned to the Naval Postgraduate School," added Glavy. "I am not qualified to talk about what happens at this school. However, I am qualified to talk about what happens after this school."

Glavy shared numerous personal stories about his encounters with NPS-educated Marine Corps officers who set themselves apart through their knowledge, expertise and problem-solving abilities. As an example, Glavy recalled sitting in on a briefing provided by a Marine Corps captain to U.S. Army Gen. James Dickinson, Commander, U.S. Space Command, and his staff, and how impressed Glavy was at the captain's ability to hold his ground with the deep technical expertise that he got from his NPS education.

NPS President retired Vice Adm. Ann E. Rondeau congratulated the graduates on their perseverance through the challenges of COVID-19, a fast-paced academic schedule, the deadline and demands of thesis production, and all the rigors of earning the degree that will be awarded to them during the ceremony.

"You're not just students, but also the future of our ability to be invested in the warfight that is in front of us, no matter where it might be," noted Rondeau. "You are a select group in ways that very few other graduates on the globe [are] … For all of you that are graduating, it's been an extraordinary privilege to serve you on this journey."

Rondeau stressed the important networks graduates form while at NPS, and how they help to understand solutions and create great things for the delivery of mission.

"No problem is solved as a single discipline or a single point of view," stated Rondeau. "This notion of interdisciplinary, international and interservice are all about integration of knowledge and application to solving problems. Our Secretary of the Navy and fellow NPS graduate, the Honorable Carlos Del Toro, calls this, 'Strength in Unity.'"

One of the Winter Quarter graduates, U.S. Navy Lt. Samuel Royster, received the Naval Sea Systems Command Award in Naval/Mechanical Engineering for his research into marine biofouling management.

Royster, who graduated from NPS' Mechanical Engineering department, specifically explored innovative methods of cleaning algae and barnacles off ship hulls to make them more fuel-efficient when underway, reducing their maintenance burden during in-port periods.

"Proactive cleaning of marine coatings has previously been shown to have many economic and environmental benefits when compared to reactive cleaning," noted Royster. "However, existing data sets for U.S. Navy qualified coatings were limited to a single geographic area, precluding prediction of grooming's effectiveness in the wide variety of locations that harbor U.S. Navy vessels. Via execution of a concurrent study in both warm-water and cold-water locations, my research aimed to investigate the correlation between seawater temperature and the proactive grooming frequencies necessary to control biofouling accumulation."

Royster presented the problem motivating his thesis research at the annual NPS Big Ideas Exchange and the NavalX Agility Summit in 2021 and was selected as the Agility Summit Challenge Champion, which gave NPS an additional $100,000 in funding to advance his research.

"I am going to be graduating as a more confident and agile leader with a broader base of engineering knowledge that I can use to solve tough problems facing the fleet," Royster said.

U.S. Marine Corps Maj. Paul P. Moreau is an intelligence officer graduating with a Master of Science in Management degree in the Defense Systems Analysis curriculum. Moreau says he has received the interdisciplinary education needed to excel in today's evolving service.

"The world is changing, and warfare is getting more complex and more technological," Moreau says. "The Marine Corps and Navy are adapting to meet that challenge, and I think a graduate education sets me up to be part of the change happening in the services."

Glavy finished his remarks by quoting the late U.S. Air Force Col. John Boyd's "To Be or To Do" philosophy, which states that you will come to a fork in the road and have to decide which path to take.

According to Glavy, if you worked for Boyd, he would ask you a question along the lines of, "Do you want to be or to do?"

"Do you want to be someone – maybe a general, admiral, master chief petty officer, master gunnery sergeant?" asked Glavy. "Or do you want to do something? Something that has an impact beyond your wildest dreams, making organizations that you're a part of so much better? Do you want to be, or do you want to do?"

Glavy concluded by noting that after 36 years, "It's all about doing. And this incredible institution has afforded you that opportunity."

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EDUCATION:

Massachusetts Institute Of Technology: Reviving War-Game Scholarship At MIT

(India Education Diary 24 Mar 22)

War games and crisis simulations are exercises where participants make decisions to simulate real-world behavior. In the field of international security, games are frequently used to study how actors make decisions during conflict, but they can also be used to model human behavior in countless other scenarios.

War games take place in a "structured-unstructured environment," according to Benjamin Harris, PhD student in the Department of Political Science and a convener of the MIT Wargaming Working Group at the Center for International Studies (CIS).

This means that the games operate at two levels — an overarching structure conditions what kind of moves players can make, but interactions among team members are unstructured. As a result, people with different backgrounds are forced to engage and learn from each other throughout the simulation. "The game goes where the participants take it," says Harris.

MIT researchers have been developing the craft of war gaming since the late 1950s. In "The Pioneering Role of CIS in American War Gaming," Reid Pauly PhD '19, assistant professor at Brown University and a CIS research affiliate, credits the origins of modern war-gaming methodology in large part to MIT professor Lincoln Bloomfield and other faculty affiliated with CIS.

Today, CIS is again at the center of new developments in the methodology, pedagogy, and application of war gaming. Over the last few years, CIS and the MIT Security Studies Program have responded to an increased demand for war gaming among students and from the policy community. This has resulted in new course offerings, student and faculty-produced research, and on-campus simulations.

Learning through games

PhD student Suzanne Freeman and Harris started the Wargaming Working Group as a forum for students to engage with the war-gaming community on campus and in policy spaces. Now in its third year, the group has developed a partnership with the **Naval Postgraduate School** (NPS) that brings mid-career military officers and academics together for an annual simulation.

Richard Samuels, Ford International Professor of Political Science and director of CIS, participated in his first crisis simulation in a game organized by Bloomfield, and subsequently organized nearly a dozen large-scale games at MIT in the 1990s through the early 2000s, most focused on Asia-Pacific security dynamics. Eric Heginbotham PhD ’04, a principal research scientist at CIS, and Christopher Twomey PhD ’05, were active participants. Together, they established the working group’s partnership with NPS, where Twomey is associate professor.

This year, participants worked through a crisis scenario centered on a nuclear reactor meltdown in Taiwan. Teams were assigned to represent Taiwan, China, the United States, and Japan, and the game was designed to tease out how civilian and military sub-teams would communicate during a crisis. Freeman and Harris presented some of the findings from the war game at Georgetown University in October 2021.

In addition to planning tabletop exercises at MIT, the working group invites speakers from universities and think tanks to present war-gaming research, and held online war games when MIT went virtual due to Covid-19. The working group has been especially successful at bridging the gap between academia and policy, allowing for PhD students and military officers to learn from each other, says Freeman.

For students hoping to further explore the history and practice of war gaming in a classroom setting, MIT now offers “Simulating Global Dynamics and War,” co-taught biennially by Samuels and Heginbotham. Students participate in four war games over the course of the semester — an operational war game, political-military crisis game, experimental game, and a game designed by students as their final project.

While the class is designed for security studies students and military fellows, it has included students and practitioners from other fields interested in incorporating gaming into their work. Lessons from the course can be applied to issues such as a global pandemic or refugee crisis, says Heginbotham.

For MIT undergraduates taking coursework in political science, war gaming is also a pedagogical tool used to consider the implications of policy decisions. In fall 2021, students in Erik Lin-Greenberg’s National Security Policy class participated in a simulation centered around a cyberattack on U.S. soil. Students worked in teams to represent U.S. government agencies at a National Security Council Principals Committee meeting. Lin-Greenberg is assistant professor of political science at MIT.

The revival of war gaming

Political scientists are increasingly considering how the method of war gaming can be improved and used in research and pedagogy. For scholars of interstate war and nuclear weapons, war gaming is an especially promising research tool.

Over the last decade, researchers have recognized that “war games and crisis simulations may have had an outsized influence on Cold War policymakers,” says Samuels. “Close, archival, analysis of Cold War games could provide insight into how policy elites thought about nuclear war.”

At the same time, the rise of the experimental method for political analysis has coincided with the revival of war gaming as a research tool, according to Samuels. “Experimental war games allow researchers to derive generalizations about leadership choice under stress,” says Samuels. However, scholars still face challenges related to external validity, or, the extent to which outcomes of war games apply to real-world scenarios.

In addition to advances in experimental war gaming and nuclear simulations, Heginbotham adds that scholars are increasingly applying war gaming to emerging and nontraditional security challenges. “War gaming allows scholars to model complex conflicts, change individual variables, and run multiple

iterations," says Heginbotham. For researchers trying to understand the dynamics of political events, gaming has a number of advantages.

In January 2022, Steven Simon, a former diplomat and National Security Council director now serving as a Robert E Wilhelm Fellow at CIS, wrote an opinion piece in The New York Times with Jonathan Stevenson about the need for war gaming focused on U.S. democratic backsliding. For Simon and Stevenson, war gaming is a tool scholars can adopt while studying low-probability but high-risk events like the Jan. 6 storming of the U.S. Capitol.

They argue, "War games, tabletop exercises, operations research, campaign analyses, conferences and seminars on the prospect of American political conflagration — including insurrection, secession, insurgency, and civil war — should be proceeding at a higher tempo and intensity."

A bright future for war gaming

Lin-Greenberg '09, MS '09 joined the Department of Political Science and the Security Studies Program in 2020 after completing a dissertation that pioneered the use of experimental wargames in international security research. As part of his doctoral research at Columbia University, he ran a war game with military audiences to understand how drones impact escalation dynamics. He wrote in War on the Rocks, "The experimental wargames revealed that the deployment of drones can actually contribute to lower levels of escalation and greater crisis stability than the deployment of manned assets."

At MIT, Lin-Greenberg, Samuels, and Heginbotham co-convene the Wargaming Working Group, mentor PhD students working on war-gaming research, and continue to advance the field of war-gaming methodology.

With co-authors Pauly and Jacquelyn Schneider, Lin-Greenberg published "Wargaming for International Relations Research" in the European Journal of International Relations in December 2021. The article establishes a research agenda for war gaming and highlights some of the methodological challenges of using war games.

The authors "explain how researchers can navigate issues of recruitment, bias, validity, and generalizability when using war games for research, and identify ways to evaluate the potential benefits and pitfalls of war games as a tool of inquiry." One of these benefits, according to the authors, is the ability of war gaming to provide new data and help answer challenges and questions about human behavior and decision-making.

For Heginbotham, there is something unique about designing and participating in war games where decision-making under pressure leads to learning. "The data you uncover in the process of designing a game and the lessons you internalize while playing the game, would be very difficult to create in any other setting," he says.

Likewise, Samuels is optimistic about the role of war gaming moving forward. He explains that the future of war gaming is bright so long as organizations — political, educational, industrial, military, and civic — continue to recognize the need to train future leaders in decision-making. Samuels is fond of quoting the Nobel laureate Thomas Schelling, a pioneer of civil-military war gaming while at Rand in the late 1950s and a partner of Lincoln Bloomfield at CIS, who once wrote: "Games won't play music or cook fish, cure a man of stuttering, or improve my children's French, just as they may not predict Pearl Harbor. But unless [critics] can show that games would have accentuated the tendency to ignore Pearl Harbor … [they] might have taught us something else useful."

Massachusetts Institute of Technology: Reviving war-game scholarship at MIT – India Education | Latest Education News | Global Educational News | Recent Educational News (indiaeducationdiary.in)

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How the Navy is Recruiting Top Tech Talent

(Gov CIO 25 Mar 22) … Nikki Henderson

The Navy utilizes multiple training platforms to onboard a talent pool across its three domains of business, readiness and warfighting.

Data science and artificial intelligence (AI) are key to the future of the armed services, so much so that Congress wrote more than 14 sections dedicated to AI, data science and engineering in the 2022 National Defense Authorization Act (NDAA).

According to Robert Keisler, director of data science and analytics at the Naval Information Warfare Center - Atlantic, the Navy is focusing on three key areas to ramp up data science and AI efforts: people, place of work and product development. People are the top priority.

"People are key, we will win with the talent that we have. We can provide mission and purpose for employees they can't find anywhere else. Service is also important and engaging for others. We also provide a green field environment because we don't have a single mission or products that we support," Kiesler said.

The Navy holds two large annual events to draw AI and data science talent: the Naval Applications of Machine Learning Workshop and the Data Science and Analytics Workshop.

"Both events bring in technologists, scientists engineers and strategic leaders from across the Navy and DOD to discuss problems, challenges and solutions we've been able to develop. And bringing people together in these events has been key to increasing the knowledge and capability of the whole Department of the Navy," Kiesler said.

Hiring from within also helps the Navy grow its AI workforce. Kiesler said they already have talent inside the Navy who are interested in AI and could merge with current AI teams and deepen their AI training.

"We have what we call competency development models," Kiesler said. "It's a development track where there is various training that we've outlined that we have found is successful. We're also partnering with groups like JAIC on some of their workforce development initiatives."

The Navy mainly looks for people who can solve problems creatively. Specialized data science degrees help, but aren't required, Kiesler said.

"Methodologies on human-centered design — I don't feel like colleges and universities teach those concepts. How to work with a customer and translate their problem into a solution," Kiesler said. "Concepts are more key than the actual technology. Really understanding how to answer the problem without going straight to a technical, mathematical or engineering solution is best."

The Navy uses all types of training to prepare its workforce. Kiesler and others have developed a "data 101" course to teach data analytics and AI concepts.

"We also utilize vendor-delivered training on general concepts and specific tools," he added. "University training is becoming more of a thing and the naval education group which includes the **Naval Postgraduate School**, the technology college and the academy. They've gotten really involved in the AI and data arena."

The Navy is also focused on improving digital literacy across its workforce to improve mission outcomes.

"Digital literacy, which includes AI and data, are key components and pillars of the thrust of we're trying to get at. That's literacy at all levels." Kiesler said. "Not just technical people, those who are building the solutions, but also the people who are using them. Literacy is key and will continue to be driven both in the Navy and DOD."

How the Navy is Recruiting Top Tech Talent (governmentciomedia.com)

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RESEARCH:

NPS Research Seeks to Advance Aircraft Turbine Resilience to Particulates

(Navy.mil 24 Mar 22) … Rebecca Hoag
(NPS.edu 24 Mar 22) … Rebecca Hoag
(Phys.org 28 Mar 22) … Rebecca Hoag

In late 2015, two Marines were killed and 20 others injured after a MV-22 Osprey crashed during pre-deployment training at Bellows Air Force Base in Hawaii. The culprit … Airborne sand and dust particulates caused brownout conditions for the aviators and were ingested into the aircraft's engines, melting due to the high temperatures and degrading internal components compromising the aircraft's power and lift.

Less than a month later, when Volcano Momotombo erupted, commercial flights were forced to stay grounded to avoid particulate ingestion from the volcano's lingering blast.

Sand, dust and other particulates have been a thorn in the side of aircraft technology for decades. In the 90s, the issue was mainly centered on erosion, but better coatings on the engines have solved that problem.

Now, the problem is more related to the high temperatures generated in newer turbine engines, allowing for increased performance and power. To their detriment, however, these higher temperatures melt particulates when ingested into the engine, which can clog the turbine.

Naval Postgraduate School (NPS) physics student and Meyer Scholar Lt. Erick Samayoa and his advisor Dr. Andy Nieto, NPS Assistant Professor of Mechanical and Aerospace Engineering (MAE) – with the help of fellow NPS MAE Assistant Research Professor Troy Ansell and UC San Diego NanoEngineering Professor Jian Luo – found that ultra-high temperature ceramics (UHTCs) might be sand-phobic … In other words, molten sand doesn't stick to them.

Their study, funded by the Strategic Engineering and Research Development Program (SERDP), was the first to look at the potential of utilizing UHTCs in aircraft turbines. SERDP is a joint effort by the Department of Defense (DoD), the Environmental Protection Agency (EPA), and the Department of Energy (DoE). This project was part of a collaboration between NPS, the U.S. Army Lab, Stony Brook University, and the materials company Oerlikon Metco.

While different companies have developed filters to reduce sand intake, it's nearly impossible to keep every particle out of a turbine, and unfortunately, the tiniest particles are the ones that melt the easiest. Other research has looked into ways to slow down sand and other particulates from melting by quickly resolidifying them through the introduction of counter-reaction, but this has not stopped particulates from sticking onto the engine in the first place.

The NPS team, therefore, decided to look at the problem from a materials standpoint. Before coming to NPS about four years ago, Nieto worked at the U.S. Army Research Laboratory (ARL), and brought his research and partnership with ARL with him to NPS.

Ansell brought to the team images of different particles exposed to ultra-high temperatures captured with a transmission electron microscope to see if and how they interacted with the UHTCs. Luo provided the ceramic materials and helped analyze the results using his expertise in high-entropy ceramics.

Samayoa says this whole project was a heavy learning curve since he was a physics student, but the research fit well within his goals. And the quality of his work showed, Nieto claimed, saying the research Samayoa performed would be work fit for a PhD student.

Adding to the complexity of research using UHTC is the challenge of simulating the heat emitted by modern gas-powered turbines. The researchers needed to find a way to test out materials at that temperature, requiring the team to acquire the hottest furnace NPS has ever had. Once up and running, the research team developed a project to test the UHTCs at different temperatures for different lengths of time.

"We were the first to even experiment at these higher temperatures for any material for these applications," Nieto says. "It was completely unexpected that as you would go higher in temperature, you would actually get some degree of chemical inertness from these ultra-high temperature ceramics where

they were not interacting with the molten sand. It opens up a possible path forward in how we are designing these engines."

The researchers published their findings in the materials science focused journal, Materialia, in Dec 2021. Samayoa, a surface warfare officer, has now graduated and is now completing the Department Head pipeline before reporting as Weapons Officer onboard USS Princeton.

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NPS Research Seeks to Advance Aircraft Turbine Resilience to Particulates - Naval Postgraduate School

Research seeks to advance aircraft turbine resilience to particulates (phys.org)

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NPS Professor, Students Issued Provisional Patent for Liquid Air Energy Storage, Recovery System

(NPS.edu 24 Mar 22) … Javier Chagoya

A provisional patent has been issued for this prototype Stirling dual-engine apparatus constructed by NPS Systems Engineering students Lts. Christopher Girouard and Nicholas Bailey, with the support of advisor Dr. Anthony Pollman. The students' theses led to this novel approach, using a dual-Stirling engine charge and recovery method for liquid air energy storage (LAES) systems.

Naval Postgraduate School (NPS) Department of Systems Engineering Assistant Professor Tony Pollman, along with university graduates U.S. Navy Lts. Nicholas Bailey and Christopher Girouard, were issued a provisional patent by the U.S. Patent and Trademark Office, Feb. 10, for a novel apparatus using a dual-Stirling engine charge and recovery method for liquid air energy storage (LAES) systems.

"This is a technology that has the potential to shape things we do in life," said Pollman.

Put simply, the dual-Stirling engine is capable of utilizing stored excess energy generated by renewable sources like solar and wind, so it can be utilized when and where it's needed most. Unlike other systems using compressed air energy storage, the NPS team's discovery would not require large tanks for storage, or the geographical constraints that hydro-electric recovery systems require.

"The greatest benefit of this type of energy storage system using liquid air, is that the resource is all around us. It's free, and has no carbon footprint. And it can be built anywhere. And the Stirling engine is also scalable," Pollman said.

The history of the Stirling engine began as a competitor to steam engines in the early 1800s. Unfortunately, inefficiencies in the engine's work cycle could not keep up with a sustained and heavy workload, so its practical use was largely confined to low-power domestic applications.

But, as Pollman quickly noted, the Stirling "is a system that would be used in a micro-grid environment," he said.

This type of engine would augment renewable energy systems which encounter curtailment periods, like wind, hydro-electric and solar panel farms. Curtailment is the reduction of output of a renewable resource below what it is capable of producing.

The two NPS students included on the patent are a couple of years removed from completing their NPS studies. Bailey and Girouard are now working at Naval Shipyards on opposite coasts, and are getting ready to transfer to new jobs following their two-year Engineering Duty Officer qualification tours at Puget Sound and Portsmouth, respectively.

The news about the team's patent award was a pleasant surprise, as they didn't hear about its issuance until a technology reporter published a piece about it from information he gathered from the USPTO Gazette for Patents publication.

"Wow! This news was out of the blue," said Bailey. "To learn that our theses have advanced liquid-air technology a little further is very cool. My mom was very proud of me when she found out."

Girouard was just as surprised to discover the possibility of a patent for his contributing thesis in the Stirling engine research.

"I had to ask, is this really going to work? And as we went along, I was really pumped to see how this was going to turn out in our search for an energy storage solution for liquid air," said Girouard.

"The experience that we had in designing and building the prototype was interesting," said Girouard. "Most of the time these [engines] are used to keep highly-sensitive electronic equipment cool rather than generating a phase change for energy storage."

While Girouard worked on the charging and containment of the system, Bailey worked on the recovery of the heat exchanger to minimize loss. Another key benefit of this type of energy generation is the low maintenance power requirements for the system itself.

Bailey said it was an incredible feeling to have the initial prototype work.

"Chris and I worked for over a year using modeling tools that proved that the system could work, but until we saw it actually turn the engine for the first time, we couldn't be sure," said Bailey. "While the initial prototype was inefficient due to design and manufacturing tradeoffs for time, we were able to prove that such an idea had merit and even potential use cases.

"As for scalability, I believe that for [limited] building size, isolated microgrids, this LAES system could solve resiliency troubles seen with renewable sources like wind or solar energy sources," Bailey continued. "Such use cases even have some applicability inside the Department of the Navy like small Marine detachments forward deployed away from infrastructure."

Currently, Bailey is anticipating a new set of orders following his two-years at Puget Sound Naval Shipyard. Girouard is now heading to Naval Surface Warfare Center Philadelphia to be the Program Managers Representative (PMR) for the FFG-62 Land Based Engineering Site, where the team is building the propulsion plant for the Constellation Class Frigate to test prior to the operation of the full vessel.

NPS Professor, Students Issued Provisional Patent for Liquid Air Energy Storage, Recovery System - Naval Postgraduate School

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OPINION:

From Bombs to Bits: Air-to-Ground Operations as a Model for the Tactical Information Environment

(War on the Rocks 25 Mar 22) … Terry Traylor and David Nass

The lethality of American air power lies not only in aviation technology but in strategies developed for deploying it. Over the last century, aviation has evolved from its initial role as strategic reconnaissance in World War I to modern stealth bombers, attack helicopters, and hand-launched killer drones. As part of this transformation, personnel roles have evolved as well. Pilots are assigned to ground units to advise mid-level commanders, while specific ground operators are trained as tactical air controllers to advise the lowest-level commanders. These ground air controllers are also equipped with radios, tablets, lasers, and drones to spot and identify the enemy.

Amidst a wide-ranging debate over how America can achieve superiority in the cyber, information, and space realms, the development of air-to-ground operations can offer a model. Today's armed forces should take a similar approach to doctrine, organization, and training in these new environments. Pairing information experts at mid-level commands with a ground "multi-domain terminal effects controller" specialist at the edge of the battlefield will help enable commanders at every level to maintain an information advantage.

Bombs

Innovative aviation approaches in World War I and World War II paved the way for modern aviation support to ground operations. In assessing this period, historians Richard Hallion and Richard

Mason have argued that up to World War I, aviation was focused on transforming reconnaissance by providing intelligence on enemy locations and movements. This changed in 1916, when the British military began employing armed reconnaissance aircraft to strafe German trenches. A further transformation occurred during the blitzkrieg of World War II. German Gen. Heinz Guderian pioneered the use of simultaneous armored attacks and airstrikes, helping to propel the Nazis to quick victories in Europe and North Africa. World War II also saw the British use the first air controller teams, pairing air liaison officers with communications specialists near the front lines to help direct strike aircraft.

Air-to-ground integration further advanced in Vietnam, when the United States Marine Corps introduced the first armed helicopter, the UH-1E Huey, in 1964. By 1975, the modern AH-1 Cobra and AH-64 Apache attack helicopters were providing armed escort to other helicopters and close air support to troops on the ground. The United States Air Force and Marine Corps continued to use pilots as air controllers. Some of these controllers were attached to ground units and some were trained to control air attacks while flying. The assignment of pilots to ground units was effective, but also costly, taking highly trained pilots out of the cockpit. This led the Air Force to begin training enlisted servicemembers as tactical air controllers in the 1980s, continuing the trend of pushing tactical airpower toward smaller units at lower echelons.

Contemporary air-to-ground support has continued to devolve to enhance operations at the lowest tactical level. In 1995, the Joint Staff formalized the air-to-ground process and defined close air support as air attacks in close proximity to friendly forces, requiring a higher level of coordination. To enable this coordination, pilots are still assigned to mid-level commands. These pilots assist with planning, execution, and liaison with aviation units. They also bring aviation expertise, a vast knowledge of aviation procedures, and the perspective of having flown close air support missions in the past. Joint doctrine also formalized the tactical air controller concept previously used by the Air Force. These joint terminal attack controllers are tactical ground operators, serving at the forward edge of the battlefield, who direct aircraft engaged in close air support and control joint-fires delivery. Joint terminal attack controllers provide expertise to ground commanders on when and how to properly employ aviation assets. They also communicate with aviation assets, as well as ground and surface fires agencies, passing on targeting information and controlling air-delivered ground attacks. While the organizational construct differs in each service, pilots often reside at the battalion or company level while attack controllers are pushed even lower, to a platoon or team level. In all cases, the goal has been to ensure the tactical utility of air power by pairing experts with ground personnel trained in the employment of aviation capabilities.

Today, drones have enabled leaders at the lowest level to survey the environment in both an offensive and defensive setting in order to drive a bottom-up targeting process. Even the smallest ground units now possess a stack of drones capable of intelligence, surveillance, and reconnaissance. These tools are a critical element in creating the military force of the future, facilitating the identification of friendly and enemy targets for strategic strike assets including the F-35, B-52, or cruise missiles. Special operations units have gone a step further, employing killer drones. The pilots and air controllers advising ground commanders frequently fly these drones. Their expertise on aviation also ensures tactical drones work in concert with helicopters, fighter jets, or larger remotely piloted drones. Combining the organizational expertise of these pilots and joint terminal attack controllers with tactical-level aviation capabilities has positioned the U.S. military to employ airpower to its fullest potential.

Bits

While the military has developed the doctrine, skills, and training to employ aviation at every level, the same cannot be said about the information environment. Currently, the most established organizations, capabilities, and authorities reside at the strategic level. Since 2017, the Navy has been experimenting with the assignment and employment of information warfare officers at the strike group level. The Army and the Marine Corps have created new units to provide information capabilities at the corps and Marine expeditionary force levels. The Marine Corps has also established a new career field for information maneuver. Since 2019, Special Operations Command, the lead entity for psychological operations, has stood up both the Joint Military Information Support Operations Web Center and the 1st Special Forces Group Information Warfare Center. While all of these entities are important evolutionary steps in

conducting successful information and cyber operations, they do not address the need for information tools and training at the lowest tactical level.

To fill this gap, the force should adopt information, cyber, and space capabilities that mirror the advances in air-to-ground integration. First, placing subject matter experts at the battalion or company level will ensure operations in the information environment are executed effectively. The biggest obstacle to this right now is manpower. Cyber operators, information warfare officers, and space planners are in short supply and require extensive training. If the military relies solely on experts, it will never fill all the positions needed to truly master the information realm in the future. To bridge this gap, individuals with ground combat arms and information warfare backgrounds should be trained in information, cyber, and space much like joint terminal attack controllers are trained to control aviation and joint-fires assets. These multi-domain terminal effects controllers would serve at the lowest tactical level to advise ground commanders on how to employ information, cyber, and space capabilities.

So, what exactly would a multi-domain terminal effects controller do? Mimicking the main tasks for an air controller, a multi-domain controller would focus effort in three areas: advising ground commanders, assisting with mission planning, and controlling actions. Multi-domain controllers would be able to provide an answer to questions about how deception operations, cyber attacks, or space capabilities could support the ground force's maneuver plans.

Analyzing the current Russo-Ukraine war remains difficult, but it could help to think about how Russian front-line troops are trying to use information, cyber, and space effects in their campaign. In the decade leading up to the conflict, Russia had been lauded for its ability to use electronic warfare and cyber-attacks in conjunction with ground-based fires. Now it appears that Russia may be struggling to synchronize its ground maneuver with national-level capabilities, including aviation, cyber, and space. Missions like these are where a cyber-joint terminal attack controller or multi-domain terminal effects controller could be effective. They would be able to bridge the gap from tactical to strategic, identifying local targets of opportunity where multi-domain effects could support tactical mission accomplishment. They could also help the ground force manage its electromagnetic signature or request support to leverage United States Cyber or Space Command capabilities to influence targets or change how targets function.

The role of a multi-domain terminal effects controller would not be limited to the planning phase. After a mission has begun, the effects controller could identify virtual or physical information targets and recommend how to employ information, cyber, or space capabilities to support the ground unit's maneuver or plan of attack. For example, as a tank platoon advances, an organic multi-domain controller could coordinate a cyber or electronic operation that degrades the enemy's communication network just prior to the main attack. After the attack is over, the multi-domain controller could also coordinate with regional psychological warfare specialists to use social-media messaging to influence local target audiences. Without someone on the ground with the training to understand how to leverage these unique effects to support ground maneuver, it is difficult to see how a national-level cyber capability will rapidly identify and synchronize effects in a complex and fast-moving combat operation. Much like the air controller who identifies targets, relays their position to supporting aircraft, and coordinates the timing of their attack, a multi-domain terminal effects controller would identify local physical or virtual targets, relay their positions to information, cyber, or space experts at a higher command, and synchronize the timing of their effects with the ground force's maneuver.

The multi-domain terminal effects controller would also have the capabilities to manage information, cyber, and space activities, much like modern ground units employ and control large drones or aviation assets. These capabilities would first and foremost allow the ground force to build awareness through assessment of the information environment. This stack of multi-domain intelligence, surveillance, and reconnaissance technologies could include AI-powered social media analytics and sentiment analysis programs, real-time natural-language processing of local open-source information and enemy material exploitation, electromagnetic spectrum analysis, near real-time space imagery and meteorological data, and crowd-sourced ground photography or imaging. In additional to battlefield awareness tools, action or engagement tools are also needed, such as limited intelligence-collection capabilities, communications jamming, and social- or rich-media analysis tools. This next-generation stack of information, cyber, and

space capabilities controlled by a trained and certified multi-domain terminal effects controller would in turn enable a bottom-up refined targeting process, allowing more specialized units to focus on hard or sensitive targets.

Of course, there are limits to the parallel between air-to-ground coordination and cyber activities. For one, aviation supporting a ground force can easily be allocated for a specific time and area through the air tasking order. The same cannot be done with cyber and space assets. Secondly, information, cyber, and space planning and effects often span all arenas, where aviation effects do not. Also, because an advantage in the information environment is fleeting at best, multi-domain terminal effects controllers would not always be able to plan for long-term permanent effects like joint terminal attack controllers do. Finally, the current authorities to use cyber and space capabilities still reside at very high approval levels. In order for a tactical model to evolve, target engagement authority and target control authority will have to be addressed alongside this concept.

Conclusion

Every ground officer is familiar with the concept of air-to-ground coordination. As such, it remains a unique model to think about the emerging and much less familiar multi-domain space. United States general officers, NATO field grade officers, and academic civilians all understand the role of the joint terminal attack controller. The same cannot be said about the lexicon and tactical capabilities in the information environment.

Current efforts fall short of empowering the lowest tactical level with the tools, training, and organization necessary to be effective in the information, cyber, and space environments. A solution to this problem is to learn from the evolution of military aviation. Pairing information experts at mid-level commands with ground multi-domain terminal effects controllers at the edge of the battlefield is an effective technique. These multi-domain terminal effects controllers can help bridge the gap between ground maneuver and national-level information, cyber, and space capability. In doing so, they can help equip every level of command with the right personnel and equipment to gain and maintain an information advantage. Rather than wait another century, the United States can employ the lessons of aviation history today.

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David Nass is a Marine staff non-commissioned officer with operational experience in both conventional and special operations units. He has served as a joint terminal attack controller for over 10 years with operational deployments in support of Operation Enduring Freedom and Operation Inherent Resolve. He is currently a graduate student in the Defense Analysis Department at **Naval Postgraduate School.**

These views expressed in this article are those of the authors and do not reflect the official policy or position of the United States Marine Corps or the Department of Defense.

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FACULTY:

The Kids Aren't Alright

(The Libertarian Republic 22 Mar 22) … David R. Henderson and Ryan Sullivan

One of the awful ironies of the pandemic lockdowns is that the people least at risk from Covid were among those whom the lockdowns hurt the most. We refer, of course, to the restrictions placed on children. Parks, zoos, and swimming pools were shut down. Little League seasons were canceled. In many states schools went remote for over a year. The evidence shows that these disruptions have had a substantial impact on children's learning, their expected lifetime incomes, their life expectancies, and their mental health. The kids are not alright.

Last December, Karyn Lewis and Megan Kuhfeld, two researchers at NWEA, a research organization, reported that student achievement at the start of the current school year was lower than for a typical year. There was a 3–7 percentage point decline in reading and a 9–11 percentage point decline in mathematics. That same month, education researchers Dan Goldhaber of the University of Washington, Thomas J. Kane of Harvard, and Andrew McEachin of NWEA plugged the Lewis/Kuhfeld data into a model to estimate how much those declines in learning would cause their lifetime income to decline. Their answer: $43,800. This number was broadly consistent with a separate study by McKinsey & Company that found an average lifetime earnings loss of between $49,000–$61,000 per student. Aggregated across all US K-12 students, these studies show more than $2 trillion in lost lifetime earnings for our youngest generation.

A recent report released by the World Bank paints a more dire picture. In that report, it estimates that the school closures could cause a loss of between 0.3 and 1.1 years of schooling, adjusted for quality. In its most pessimistic scenario, the World Bank estimates that worldwide cumulative losses could total between $16 and $20 trillion in present value terms.

A National Bureau of Economic Research study released in November 2021 analyzed recent test score data across 12 states in comparison to previous years and found passing rates declined by 14.2 percentage points on average in mathematics and 6.3 percentage points in English Language Arts. The authors found that much of the decline was due to the closing down of schools.

Historical evidence suggests that these learning losses are likely to be permanent. A 2019 article published in the Journal of Labor Economics analyzed the effect of teacher strikes in Argentina on students' long-term outcomes in that country. The authors found that experiencing the average number of days of strikes during primary school reduced labor earnings of males and females by 3.2 percent and 1.9 percent, respectively.

In another study, researchers from the IZA Institute of Labor Economics analyzed long-term outcomes from one of the most extreme examples of learning disruptions – war. In that study, the authors compared Austrians and Germans who were 10 years old during World War II with their counterparts in neutral countries such as Switzerland and Sweden. The authors found that earning losses persisted into the 1980s. They estimated the earning losses to be about 0.8 percent of GDP.

Once these earning losses take hold, they lead to lower life expectancies. This connection was highlighted most prominently in a paper published in the Journal of the American Medical Association that analyzed data on school shutdowns early in the pandemic. The authors found that missed instruction in the United States could be associated with an estimated 13.8 million years of life lost.

What makes these outcomes even more tragic is that they were experienced by children who, as was known early on, never had a significant risk of dying from COVID-19. As of the first week of March 2022, out of the nearly 950,000 Covid-19 deaths, only 865 were children under the age of 18. That amounts to about 433 children annually. This is comparable to a bad flu season in the US. For example, the CDC estimates that the actual number of flu deaths for children in the 2017-18 flu season was about 600.

Moreover, the school closings and lockdowns have led to a noticeable loss in children's mental health. This was apparent early in the pandemic. In a CDC report released in November 2020, researchers reported that the proportion of mental health-related visits from April to October 2020 for children aged 5-11 and 12-17 years had increased by approximately 24 percent and 31 percent, respectively in comparison to 2019 data. In a follow-up CDC report, researchers found that emergency department visits due to suspected suicide attempts were 51 percent higher among girls aged 12-17 years during early 2021 in comparison to the same period in 2019; among boys aged 12-17 years, suspected suicide attempt emergency department visits increased 4 percent.

In 2021, FAIR Health released a report that analyzed data from over 32 billion private health care claim records tracking data from 2019 and 2020. Claims for intentional self-harm as a percentage of all medical claims in the 13-18 age group were 90.7 percent higher early in the pandemic in 2020 than in the same time period in 2019. Furthermore, the authors noted, claims for generalized anxiety disorder increased by 93.6 percent over that same time.

Not much can be done about this now, other than to end the remaining restrictions on children. But there is a lesson for future pandemics: follow the science. If the data say that young people are at very low risk, then treat them as if they are at very low risk. Maybe we're all in this together, as the propaganda goes, but we are not equally in this together. Treating children the way government officials did was morally wrong.

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Dr. Ryan Sullivan, Associate Professor, received a Ph.D. in Economics from Syracuse University in 2010. Dr. Sullivan joined the faculty at the **Naval Postgraduate School** in that same year and has taught a variety of topics related to cost-benefit and cost-effectiveness analysis, marginal reasoning, budgeting, finance, and labor economics. His research interests include program cost-benefit analyses, value of statistical life evaluations, and taxation.

He has published in numerous peer-reviewed journals, including American Economic Journal: Economic Policy, Economic Inquiry, Journal of Risk and Uncertainty, National Tax Journal, Public Budgeting and Finance, Public Finance Review, and Risk Analysis, among others. His work has been discussed in such prominent outlets as the Economist, Forbes, Time Magazine, USA Today, U.S. News and World Report, and the Wall Street Journal.

The Kids Aren't Alright (thelibertarianrepublic.com)

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FERN's Back Forty: Rethinking How We Feed the Troops

(The Fern 22 Mar 22) … Bridget Huber

The Pentagon recognizes climate change as a "destabilizing force." To meet this growing national security threat, it urges adaptation, resilience and mitigation. In a recent commentary, Leo Blanken, a professor in the Defense Analysis Department at the **Naval Postgraduate School**, and Ben Cohen, a student in the school's Applied Design for Innovation program, argue that sustainable agriculture should be part of the military's climate change strategy. Modernized victory gardens—container farms that use hydroponic or aeroponic systems and can theoretically generate as many vegetables as a five-acre farm while using a fraction of the water and fertilizer—could help improve the health of soldiers while reducing expenses and the military's environmental footprint, they argue. Given that the way we produce, process and package food accounts for more than a third of all anthropogenic greenhouse-gas emissions worldwide, it seems worth exploring. That same technology could help U.S. allies become more food secure, and strengthen partnerships. And if the Department of Defense turned its vast research capacity toward climate-friendly farming techniques, it could help push forward the entire field of sustainable agriculture. This conversation has been edited for length and clarity.

Why should the DoD be thinking about this?

Blanken: An organization as large as the Department of Defense—even if it marginally changes how it interfaces with food—would have massive impacts. The department has traditionally pioneered new technologies or new ways of doing things, which then have positive externalities for the wider society. (The internet, for instance.) So the DoD could engage in these activities to use in military operations, and

also at home bases, to reimagine how they generate their own food. And that could be a springboard for how we might solve food security problems, both in the wider U.S. society and around the world. There's a huge opportunity.

Cohen: In terms of strategy, a lot of this has to do with the Arctic, where the climate is changing dramatically. As the ice starts to melt, the area becomes much more navigable. From a military perspective, China is interested in that. If the Arctic begins to melt, they increase their ability to reach the world very quickly. They want the ice to melt. There's also an estimated trillion dollars of precious resources under the ice pack up there. It's amazing that what we do in Kansas is affecting climate change, and so it's also affecting what's happening in the Arctic, which has strategic implications.

Why do you think the Pentagon's climate adaptation report doesn't mention food as part of the solution?

Blanken: I think 20 years of fighting in Iraq and Afghanistan and thinking about counterinsurgency and terrorism, almost to the exclusion of everything else, is 20 lost years of thinking about bigger issues. How the DoD sources its food has massive implications for the environment, I just don't think people have even worked through all these implications yet.

The Pentagon called for adaptation, resilience and mitigation to address national security threats posed by climate change. Where do you see agriculture fitting in?

Blanken: The DoD's core task is national security. But I think what climate change is really pushing on to the national agenda is that it's not just national security. It's also human security. If we think of food security and a healthy environment, and the health of the men and women who come in as young recruits and how we train them and how we influence their eating habits—now we can conceive of human security as something that we could be generating as well.

Some of these military bases have a huge amount of space, huge amounts of resources, huge numbers of young men and women. Can we reconceive security in a way that regenerative farming may have a place? Can we change our lens of what security means? And as we take national resources, like taxes, and feed them to the Department of Defense, can we think harder about what we get out of it in terms of positive things for our community? Not just the ability to fight wars and shoot down enemy planes, but also creating a more healthy, secure society by using all those resources a little more thoughtfully.

Cohen: What if we start teaching regenerative agriculture on military installations? We'd be giving our service members some skills to take with them when they transition out of the force.

Can you talk more about what this could look like overseas?

Blanken: In Afghanistan, the vast majority of food that American forces consumed was in facilities that essentially look like your grade school cafeteria. The only time people needed combat rations was if they went outside the wire on a mission. And those missions were so short that guys took water, energy drinks and granola bars. Back in Kandahar Airfield or Bagram Airfield, they were essentially stuck eating terrible grade school cafeteria food served by contract workers. We were in Afghanistan for 20 years and had these massive footprints—you could have created a system to sustain agriculture there that would have made the vast majority of meals much healthier and much cheaper.

You're never going to use hydroponic farming on the frontlines. But when you move forces to any location where they're going to spend any amount of time, there's opportunity to feed the majority of your people in a different way than moving every pound of processed food across the Pacific, driving it through Pakistan in a truck to get it to Bagram, which was insanely expensive, used a lot of packaging and was unhealthy. It cost the American taxpayer an exorbitant amount of money to get canned spaghetti and corndogs and fruit cocktail to the troops.

Cohen: If I have an 8-foot-by-40-foot container farm that's designed to be self-sustaining for 96 hours, I can transport it anywhere in the world. So instead of us having to drive or fly the food for hundreds of hours, I can deploy the equivalent of a three-acre farm—or several three-acre farms—to staging areas. It would reduce the length of the supply chain. That's actually really important for the military. We spend a lot of money, and we waste a lot of resources.

You write that these farming operations are even more important in the case of a conflict in the Indo-Pacific region. Why would a conflict there be more challenging?

Blanken: If you look at the nature of a conflict in the Indo-Pacific versus Europe—Ukraine, for example. There's infrastructure, railroads, it's relatively easy to move things to Ukraine. But the Pacific is massive. The nations are so far apart, they require huge amounts of shipping. Simply moving things, even in peacetime, is really expensive. If you have forces out there, those folks need to eat. And are you shipping all the food over to them all the time?

Now imagine a conflict with China. China is extraordinarily good at this thing called anti-access area denial, and that is going to disrupt the U.S.'s ability to move things. They'll sink ships, shoot down airplanes, disrupt communications, target all of our refueling stations, etc. China's goal is to prevent the United States from moving people and things across the Pacific. Having fewer things to move is going to make your life a lot easier.

You also talk about how agriculture could play a role in 'partner force enablement.' What does that mean?

Blanken: Security force assistance and building partner capacity is going to become increasingly important. Iraq and Afghanistan have soured the American public on sending hundreds of thousands of American troops to fight around the world, which means that a lot of security outcomes are going to be driven by us working with partners and allies. It basically means going to a country and helping them with their security, to both build a friendship and then also be able to coordinate with them during a potential conflict.

Traditionally, we go and train their troops to be able to shoot, or do communications better, and we give them equipment or sell them equipment—radios or guns or whatever. But as we move into the future we need to conceive of security in a broader sense: moving beyond traditional war-fighting into these notions of human security. That is going to make us be more empathetic to what these folks are actually interested in, what their concerns are. Our concern may be that we want you to be a friend because we're concerned about the influence of China. But they may be more concerned about human security issues in their country—terrorism, disaster relief, the fact that climate change, in some of these countries, is literally an existential threat.

I went to a very rural outpost in the Philippines around 2011. I got to eat with the Filipino Ranger colonel, the senior ranking guy there. The food was barely edible; it was like starvation rations—a spoonful of rice and a chicken wing from a chicken that must have been the size of a canary. I couldn't believe these guys were stationed there for years, eating like that. But they were out there because that's where the terrorists were. What if there was a hydroponic farm there? They could eat fresh food all the time. Would it be worth it to give them an $80,000 shipping container farm instead of another $80,000 pile of weapons?

We need to think about partner nations' food security issues. If food security is impacting our neighbors in Georgia or Indiana, how do you think it's impacting people in Bangladesh, or the Philippines?

There's been a lot of worry about the declining physical fitness of recruits. Do you think a focus on sustainable agriculture could play a role there?

Blanken: Our recruit base is a reflection of society. Every time I go to a military base, I drive around and it's all fast-food restaurants. And it's full of 18-year-olds eating Jack in the Box and McDonald's for lunch. It is an endemic problem, not just for our young military men and women, but for society in general. The Department of Defense uses a lot of society's resources — both human resources and tax money. There can be other good things that come out of the military [beyond national security]. People don't realize that the U.S. military was one of the first institutions to mandate racial integration. They decided to get out ahead of civilian society on this issue. And there's a lot of military sociological literature saying we can be on the front edge of doing something good within the military, that would be good for society as well.

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Which Comes First: Happiness or Success?

(Fast Company 22 Mar 22) … Stephanie Vozza

It's a chicken-and-the egg question. Which comes first: happiness or success? Does success make you happy, or does happiness make you more likely to succeed?

That's the question Paul Lester, associate professor of management at the **Naval Postgraduate School**; Martin Seligman, director of the University of Pennsylvania's Positive Psychology Center; and the late Ed Diener, an influential American psychologist, attempted to answer.

For five years, the researchers followed nearly 1 million employees of the U.S. Department of Defense across all job functions. They measured their relative happiness and optimism with questions from the Positive and Negative Affect Schedule and the Life Orientation Test (tools used by the military to gauge well-being) and compared them to the number of awards an employee earned. Their findings, "Happy Soldiers Are Highest Performers," are published in the MIT Sloan Management Review.

"When leadership makes a decision to put you in for an award, there's a pretty rigorous process to go through before it's actually given to somebody," Lester says. "Of approximately a million employees, just 12.6% received an award. These aren't participation awards; receiving an award is rare."

THE HAPPINESS IMPACT

Those with the highest positive well-being affects had almost four times the number of award recognitions as those in the group with the lowest well-being scores. The researchers also found that while negative feelings like sadness and anger predicted fewer awards, having low levels of positive emotions did also.

"We were able to focus on the impact of happiness as a predictor of performance," Lester says. "High negative feelings interfere with good performance, and high optimism predicts a greater odds of superior work performance."

The bottom line of the study is that you don't have to have success to be happy and you don't have to be happy to find success. People who could be considered unhappy compared to their peers still earned awards for performance, but they earned them at a lower rate than people who were happy overall.

"Happiness could give you a greater chance of being successful," Lester says. "Skills, knowledge, ability—all of that matters greatly. And we're not saying that that happiness is more important than all of those other things. We are showing that happiness is a measurable predictor of performance."

WHAT THIS MEANS TO YOU

The study findings have applications in the civilian world. The Defense Department is the single largest employer in the world, with about 190 different types of jobs, from truck drivers and pilots to doctors and lawyers. The researchers were able to look across a wide swath of fields and demographics, race, genders, tenure, and job characteristics.

"That's what made the study special, not only its depth but its breadth," Lester says.

Since happiness can be a precursor to success, Lester and his fellow researchers encourage organizations to focus on employee well-being and optimism. "Happiness matters and should be measured," he says. "In a sense, it's a proxy for the health of the organization itself. There's value in measuring and developing it."

Instead of relying on management intuition, start by using assessment tools with current employees as well as prospective hires to gauge well-being, optimism, and overall happiness. Many organizations already use behavioral screening to evaluate job candidates. If it doesn't include questions about happiness and optimism, it should be updated with this element.

Organizations should also pay attention to toxic leadership and employees, who can cause unhappiness in others, impacting performance and leading to higher attrition. Training leaders to better manage employees can help, although more severe measures, such as firing, may be necessary to protect the overall mental health of the team.

Another step to take is to develop happiness in your workforce. Lester and the researchers suggest implementing simple exercises, such as encouraging employees to make testimonies of gratitude to someone who changed their life for the better. Or have employees write down three things that went well each day for a week. Previous research by Seligman has shown that these positive interventions can increase happiness and decrease depressive symptoms.

Finally, Lester says leaders should model a focus on well-being. "If leaders want to improve employee happiness, they must model that which is taught so that it becomes integral to the organization's lexicon and culture," he says. "We learn best from watching other people. The big takeaway is that the happiness of your employees matters. Yes, objective measures of performance matter to the organization. That's why your organization exists for whatever reason. But in the end, a gauge of how well your company is doing is assessing the overall happiness of your employees."

Which comes first: happiness or success? (fastcompany.com)

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"What Comes First, Happiness or Success?"

(Your Decommissioning News 25 Mar 22) … Terry Thompson

Q: "I've been asking myself a chicken and egg question for a while. At work, what comes first, happiness or success? Does success make you happy? Or does happiness make success? I don't see a clear answer. Is there just one?" " – Lorient

A: Dear Lorian, as amazing as this may sound, there really is a clear and distinct answer to your existential question. I discovered it in a recent study led by Paul Lester, professor of management at the **Naval Postgraduate School** in Monterey, California. Let's look at this together.

Paul Lister's team of researchers looked at the US Department of Defense's database, which is rich in detailed information on the millions of employees who work there: truck drivers, IT workers, doctors, and more. They looked at the past five years, looking to see if there was any link between individual performance (12.6% of employees received a bonus during this period) and the level of satisfaction each felt in their daily work life. This allowed them to discover this.

Those who are among the happiest at work are four times more likely to earn a performance-related bonus than those who are among the least happy at work.

Those who feel "sad" or "angry" in their daily work are less likely to demonstrate great career success. Conversely, those who shine with their "optimism" are those who have the highest probability of success in their work.

– However, a person who feels happy at work "moderately" or "not much" can receive a reward. But this reward is generally much lower than that obtained by those who show a high level of job satisfaction.

"Being happy at work is not an indispensable condition for professional success, but rather an indicator of a high probability of success. Conversely, job dissatisfaction is a harbinger of poor job performance," the study concludes, noting that there can be no Success "without skill, knowledge, and other skills."

Hence the importance of the employer ensuring the welfare of his employees. According to the team headed by Paul Leicester, simple and tangible measures should be adopted without delay, thus raising the overall level of team satisfaction.

– "Encourage everyone to express their gratitude to one or more colleagues who have enabled them to improve their daily lives at work or who have given them a good hand at work."

– "Or even, on Friday afternoon, invite everyone to write in a personal notebook two or three things that have marked the past week in a positive way."

Why? Because, incidentally, this small ritual can benefit the person concerned as well as his colleagues. And even “reduce symptoms of depression” for those who feel it. nothing less.

Here, then, dear Laurianne, is the answer to the question that has been bothering you. If you have to pursue a goal at work, it should be above all happiness, not success. Otherwise, you will put the cart before the horse.

“What comes first, happiness or success?” (yourdecommissioningnews.com)

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University Experts: Cyber War With Russia Uncertain

(Gov Tech 25 Mar 22) … Zach Edmondson

Cybersecurity and national security experts at Kennesaw State University, Duquesne University and the **Naval Postgraduate School** say Russia may target private enterprise, supply chains or no one, and only time will tell.

Despite President Joe Biden's warning that Russia may engage in cyber attacks against the United States, Dr. Andy Green, cybersecurity expert at Kennesaw State University, says it is too early to declare "the Russians are coming, the Russians are coming."

This comes after Biden told American business leaders to strengthen their cyber defenses during a business roundtable Monday. Biden said Russia is likely to use cyber attacks in retaliation against the U.S. for imposing unprecedented sanctions on Russia after it invaded Ukraine.

Green said that, in reality, Russia is always capable of engaging in cyber attacks. The fact that the U.S. imposed sanctions on Russia doesn't necessarily mean Russian cyber attacks are coming. The real question: Is Russia willing to escalate the ongoing war by cyber-attacking the U.S.?

If it is, one course of action Russia could engage in, Green said, is ramping up cyber attacks against private firms like banks and retail companies. Another course of action for Russia would be launching cyber attacks on critical infrastructure in the U.S.

"(Critical infrastructure) attacks would be attacks on power, water, gas, oil, and systems like these, including supply chains of manufacturers for things like food, to cause a panic," Green said.

The largest fuel pipeline in the U.S., Colonial Pipeline, was hacked by a Russia-linked cyber crime group known as DarkSide in April of 2021. According to Bloomberg News, Colonial paid the hackers a $4.4 million ransom shortly after the hack. The hackers also stole nearly 100 gigabytes of data from Colonial and threatened to leak it if the ransom wasn't paid.

There are other groups like DarkSide that don't work for the Russian government directly, but they're given safe harbor to operate as criminal enterprises in Russia as long as they don't attack Russians, Green said.

These kinds of cyber attacks are what the U.S. can expect from Russia going forward, but the threat of Russia attacking the U.S. is nothing but speculation right now, Green said.

"I want to make sure that I'm very clear on this," he said. "There's no indication that the Russians have actually chosen to do anything. This is all just a giant, speculative what-if ... it's one of those things where we'll know what they decide to do when they decide to do it."

There is a third option, Green said, and it is that Russia decides to do nothing in the way of cyber warfare against the U.S. Green said this option is valid because "(Russia) doesn't want to escalate" the war.

Russia has, however, demonstrated its cyber capacity in Ukraine during the invasion. It engaged in cyber attacks using malware that can wipe clean data from any targeted organization. A Feb. 23 attack crippled websites of Ukrainian government agencies and financial institutions, according to McClatchy.

As many fear a potential cyber war, experts said it would look nothing like you'd imagine seeing in the movies.

Patrick Juola, professor of computer science and cybersecurity studies coordinator at Duquesne University, told McClatchy News that "we are not going to see any sort of weird sci-fi dystopia stuff."

"I don't know of anyone with the capacity to take over self-driving cars and send them into buildings," Juola said. "Even military drones are on special secure networks to keep them safe."

John Hultquist, vice president of intelligence analysis at Mandiant, a cybersecurity firm, said that a cyber war is "very possible," but added that "most of the cyber attacks we've seen have been nonviolent, and largely reversible," CNBC reported.

Scott Jasper, senior lecturer in national security affairs at the **Naval Postgraduate School**, warned that the Russian government does have the capacity to "damage critical U.S. infrastructure systems."

In 2020, Russian Foreign Intelligence Service hackers gained access inside "at least nine U.S. federal agencies and around 100 private companies, many in information technology and cybersecurity," he said. The hackers went unnoticed for months.

Hackers can overload bank and government websites, corrupt data and shut down power from energy and electric utilities, among other things, Jasper said.

While cyber attacks could affect people in Cobb, there is no need for Cobb citizens to panic right now. Everyone should just be watchful and mindful, Green said.

"The average citizen isn't going to be the target that the (cyber attacks) are going to go after," Green said. "These (attacks) are going to go after businesses that Cobb County citizens do business with. They're going to go after the Home Depots of the world ... the Deltas of the world."

As far as cyber attacks on businesses, all consumers can do is hope that places where they share valuable information are prepared.

"On a direct level, there's nothing that you can do as a consumer," Green said. "You're relying on and hoping for the best from the firms that you choose to do business with like your bank and your credit card company, right? You're hoping that they have created a security program robust enough to deal with these challenges."

There are things individuals can do to weather cyber attacks that affect them directly, however.

According to Green, keeping some cash on hand and writing down critical telephone numbers and passwords would pay off greatly. It is important to be able to access "anything that you think is critical to your daily ability to exist" without the use of the internet in the event of a cyber attack.

University Experts: Cyber War With Russia Uncertain (govtech.com)

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ALUMNI:

Sterling Native Named Commander of Navy Recruitment Group

(Shaw Local 21 Mar 22)

Sterling native Cmdr. Jason Nelson is the new commanding officer of the Navy Talent Acquisition Group Heartland, the Navy said in a news release Monday.

Nelson, son of Jeff and Debbie Nelson, was appointed at a change of command ceremony at the Yankee Air Museum in Van Buren Township, Michigan, on March 11. He relieved Cmdr. Paolo Singh, of Riverside, California.

NTAG Heartland recruited more than 1,400 enlisted personnel and assessed more than 100 officers during Singh's tenure as commanding officer, which began on Aug. 27, 2020.

Upon assuming command, Nelson stressed the importance of the command's mission to the sailors and civilians of NTAG Heartland. He said that his vision of what NTAG Heartland is tasked with is "to defend the people and ideas of this nation by manning the fleet through changing the lives of young men and women with Navy opportunities."

"You all made that choice at one point. You know why you did it. We need to continue to bring that out to our public so that we can give them those opportunities," Nelson said.

He reported as executive officer of NTAG Heartland in August 2020. His background includes a master's of science in modeling, virtual environments, and simulation from the **Naval Postgraduate School** and an associate's degree in Spanish from the Defense Language Institute.

He was the chief engineer on USS McClusky, the officer in charge of Surface Warfare Detachment Three, and executive officer of USS Fort Worth.

During the ceremony, both Navy Recruiting Region Central Cmdr. David Pavlik and Singh expressed their confidence that Nelson was the right candidate for his new position.

"You're on your way to do great things as [commanding officer]," Pavlik said. "I have the highest confidence in you and your leadership, and I strongly believe that you're the right person at the right time for Team Heartland."

"You are orders of magnitude more knowledgeable about recruiting than I was at this point, and I see how much you care about NTAG Heartland," Singh said. "I can't think of anyone better to hand our command to."

NTAG Heartland is responsible for the Navy's enlisted and officer recruiting, covering nearly 140,000 square miles of Michigan, Indiana and Northwest Ohio; it is headquartered in Detroit.

Navy Recruiting Command consists of a command headquarters, three Navy Recruiting Regions, and 26 Navy Talent Acquisition Groups that serve more than 1,000 recruiting stations across the world. Their combined goal is to attract the highest quality candidates to assure the ongoing success of America's Navy.

Sterling native named commander of Navy recruitment group – Shaw Local

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Lieutenant General (Retired) Paul Ostrowski, Former Principal Military Deputy to Assistant Secretary of the Army, Acquisition, Logistics, and Technology (ASA ALT) Joins Vita Inclinata As Senior Advisor

(Yahoo! Entertainment 22 Mar 22)

Vita Inclinata (Vita), developer and producer of helicopter and crane load stabilization and precision hardware, today announced retired three-star General Officer Paul Ostrowski, U.S. Army, has joined the company as a Senior Advisor. A known Capitol Hill entity with extensive Congressional.

And Government Relations experience, Ostrowski will be instrumental in helping to guide the development, strategic direction, and adoption of the company's Vita Rescue System and Vita Sling Load system for military applications.

Ostrowski's distinguished career includes supporting the Special Operations community and the Army as Program Executive Officer (PEO) Soldier, as well as working with the President of Afghanistan to train and equip the Afghan military.

"In near-peer conflicts, the U.S. military must field technology that improves our ability to operate quickly and effectively. Vita Inclinata's Rescue System and Sling Load system are cutting edge, rugged, and simple to use, enabling the future force to rapidly extract casualties in the 'golden hour,' significantly reducing aircraft exposure to hostile fire, and improving the ability to conduct external lift operations." Ostrowski said. "My previous experience evaluating and fostering emerging technologies led me to Vita's technology as the team really caught my attention. I look forward to providing my full support in driving the accelerated development and fielding of these critical products."

After his distinguished U.S. Army career, Ostrowski served as the Deputy Chief Operating Officer and Director of Supply, Production, and Distribution for Operation Warp Speed/Countermeasures Acceleration Group. In this position, he led the Whole of America approach along with industry, academia, public and private associations to develop, manufacture, test, and deliver effective vaccines—both stateside and internationally—in response to the COVID-19 pandemic.

As a three-star General Officer and Principal Military Deputy and Director of the Army Acquisition Corps, Ostrowski led the acquisition workforce of more than 39,500 professionals while providing oversight for more than 720 diverse acquisition programs with a combined portfolio of $36.6B.

In addition, he is a graduate of the United States Military Academy at West Point and earned a Master of Science in Systems Acquisition Management from the **Naval Postgraduate School** and a Master of Science in National Resource Strategy from the Industrial College of the Armed Forces/Eisenhower School in Washington D.C.

"Vita's mission to save lives has inspired passion within very distinguished professionals across civilian and military industries," said Caleb Carr, CEO, Vita. "We are honored to welcome Paul Ostrowski as a Senior Advisor and eager to work closely with him as he helps us strengthen and achieve new business relationships as well as expand our global presence."

Lieutenant General (Retired) Paul Ostrowski, Former Principal Military Deputy to Assistant Secretary of the Army, Acquisition, Logistics, and Technology (ASA ALT) Joins Vita Inclinata As Senior Advisor (yahoo.com)

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Lansing Board of Fire Commissioners Recommends Two Candidates for Fire Chief

(Fox 47 News 24 Mar 22) … Margaret Cahill

The Lansing Board of Fire Commissioners recommended Brian Sturdivant and Edwin Miller for the position of fire chief Thursday night.

This narrows the finalists down to two, taking Interim Fire Chief Michael Tobin out of the running.

“I think they are both qualified candidates," Steve Purchase, Chair of the Lansing Board of Fire Commissioners said. "They comported themselves very well at the community forum the other day and I was pleased to witness that. And I'm sure they'll have conversations with the mayor and he'll make the best selection he can for the city."

Sturdivant is the current fire chief in Battle Creek, Michigan. Prior to that position, he served as executive deputy fire chief in Petersburg, Virginia, fire chief in Milipitas, California and deputy fire chief in Scottsdale, Arizona.

“I think that level of experience, especially because I've worked in different communities that reflect the level of diversity that we all talk about," Sturdivant said. "And I look to bring those experiences to Lansing.”

Sturdivant holds an undergraduate degree in Public Safety Administration from Grand Canyon University and a graduate degree from the **Naval Postgraduate School**, Center for Homeland Defense.

He is also a graduate of a program for senior executives in state and local government at Harvard University and a graduate of the National Fire Service Staff and Command Program at the University of Maryland.

Miller is the current assistant fire chief in Sterling Heights, Michigan. He began as a fire fighter there in 1992 and has served in every rank in the department before his current position.

“I want to learn people personally, and get to know everybody in this department because every person adds value to this organization in their own way," Miller said. "So, I want to capitalize. I want to use everybody's gifts, and it only benefits the citizens.”

Edwin holds an undergraduate degree in Fire Administration from Columbia Southern University and graduated from the Fire Staff and Command School at Eastern Michigan University.

He is also a licensed paramedic in the state of Michigan and was appointed to the Michigan Public Safety Communications Commission.

Residents at the meeting expressed their feelings toward the two finalists.

Former firefighter and activist Michael Lynn spoke at the meeting in support of the board’s selection.

Lynn has sued the city multiple times for racial discrimination and was terminated in February 2021 for violating “numerous department policies.”

He said he believes Sturdivant, in particular, could help change the culture of the department.

"When I heard him speak about, you know, his experience as a firefighter starting off in Atlanta, in the Georgia area, dealing with racism and how he understood what it felt like to experience microaggressions, it just touched me," Lynn said.

Mayor Andy Schor will make the final selection after interviewing and reviewing the two finalists.

Lansing Board of Fire Commissioners: Two candidates for fire chief selected (fox47news.com)

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NASA and ESA Assign Their Astronauts for One of the Future Missions to the ISS

(Paris Beacon 24 Mar 22)
(Iran International 24 Mar 22)
(Space Ref 24 Mar 22)

Science Writing, March 24 (Latest).- The American and European space agencies, NASA and ESA, have selected two astronauts for the SpaceX Crew-7 mission to the International Space Station (ISS): Jasmin Moghbeli and Andreas Mogensen will be the commander and the pilot of the ship, respectively.

The mission is expected to launch no earlier than 2023 on a SpaceX Falcon 9 rocket from NASA's Kennedy Space Center in Florida, USA.

Moghbeli, Mogensen and the other mission specialists – to be announced later – will join the crew aboard the space station, according to a NASA and ESA statement.

This will be the first spaceflight for Moghbeli, who became a NASA astronaut in 2017; She is from Baldwin, New York, and earned a bachelor's degree in aerospace engineering from the Massachusetts Institute of Technology and a master's degree in aerospace engineering from the **Naval Postgraduate School** in Monterey, California.

As for European Space News astronaut Andreas Mogensen, this will be the first long-duration mission on the station; in 2015 he already flew a 10-day mission called Iriss.

This is, according to ESA, the first time that a non-US astronaut associate has been designated as a pilot for a NASA SpaceX mission.

His election was announced by ESA Director General Josef Aschbacher at the Danish Ministry of Higher Education and Science's national space conference today.

Mogensen was born in Copenhagen, Denmark, is a graduate of the Copenhagen International School, has an M.A. in aeronautical engineering from Imperial College London, and a Ph.D. in aerospace engineering from the University of Texas at Austin.

In 2015 he became the first Danish person to go into space and is currently the European astronaut liaison officer with NASA's Johnson Space Center in Houston.

"I've been wanting this since the moment I landed from my first mission, on September 12, 2015," says the astronaut, for whom the space station "is a unique laboratory" in which to work on revolutionary technological research and development. "I really want to go back there."

Andreas will be the next ESA astronaut to fly after Samantha Cristoforetti, who will be part of the Crew-4 launch in April 2022.

NASA and ESA assign their astronauts for one of the future missions to the ISS - Paris Beacon News
Iranian-American Astronaut Selected To Travel To Space Station (iranintl.com)
NASA, ESA Assign Astronauts to Space Station Mission on Crew Dragon (spaceref.com)

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Thomas C. Sivak Appointed FEMA Region 5 Administrator

(FEMA 28 Mar 22)

Thomas C. Sivak, recently appointed as regional administrator of the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA), began his service on Monday, March 28, 2022. As Region 5's administrator, Sivak will lead and coordinate all activities in support of FEMA's mission with the states of Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin and 34 federally recognized tribes in the region.

"I'm honored by this opportunity to lead the FEMA Region 5 office, building from my emergency management experiences serving the beautiful and diverse neighborhoods of Cook County and city of Chicago to join a team of seasoned responders dedicated to helping people across our Great Lakes states before, during and after disasters," said Sivak. "I firmly believe we will continue achieving FEMA's mission while finding innovative ways to foster communities that are safer and more resilient to future disaster risks."

Prior to joining FEMA, Sivak was the Deputy Director of Operations for Cook County, Illinois Department of Emergency Management and Regional Security and served for six years as the Deputy Director for Emergency Management at Chicago's Office of Emergency Management and Communication. Throughout Sivak's 15-year emergency management and public safety career, he has proudly worked for private, urban area and county public sector organizations and filled leadership roles during major activations, including the 2012 Super Bowl, 2018 Mercy Hospital active shooter incident, COVID-19 pandemic, civil unrest in May and August 2020, and presidential election consequence management.

Sivak is a Certified Emergency Manager through the International Association of Emergency Managers and a graduate of the Executive Leadership Program at the **Naval Postgraduate School** Center for Homeland Defense and Security. He holds a Master of Science in Public Service Leadership from DePaul University as well as a Bachelor of Arts degree from Marquette University and is originally from East Cleveland, Ohio.

Thomas C. Sivak Appointed FEMA Region 5 Administrator | FEMA.gov

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The New Face Of Security For Healthcare

(For Reports 29 Mar 22) … Becca Roberts

Health data is notoriously vulnerable to hacking. The pandemic has taken a toll on industry resources, and data quality and security are suffering as a result. Additionally, the rise of mobile applications, the advent of mobile workstations, and the ease with which businesses can now expand to cloud accounts have made the industry more vulnerable than ever. In short, "the attack surface" is now vast.

According to IDC, a staggering 36% of the world's data will be generated by the healthcare industry by 2025, up from 30% in 2018. And personally identifiable information (PII) is very valuable to attackers. The problem is well known, but solutions that are inexpensive and easy to implement seemed to be few and far between.

Enter: Zero Clients

The concept of zero-client computing is not new, it has been around since the late 1990s. Only recently has this lightweight computing method gained popularity as a data protection measure for vulnerable industries such as the military, financial institutions, and healthcare.

A zero client is an end-user workstation that uses a virtual desktop connected to a centralized computing infrastructure. In layman's terms, a zero client is a setup where a computer just mirrors information retrieved from somewhere else. If you happened to work in an office in the 80's or 90's, you might be familiar with the concept of a mainframe computer. A zero client is essentially a more

sophisticated version of the same concept. If you work in healthcare, the user experience is the same as using a Virtual Privacy Network (VPN), but from a security and privacy perspective, it's very different.

Why is a zero client more secure?

When a healthcare worker accesses data from a zero client, there is no risk of data being exposed or made accessible. No data is stored on the device, no data ever rests on the device, and hence there is nothing to exploit.

For example, if a hospital does not use zero clients, safeguards and protocols must be put in place to protect each workstation. Every laptop, tablet, or device on the network must have advanced security that protects both the physical device itself and its access to IPP data. However, if the same hospital does not use clients, it can put all its resources into protecting one main computer and does not have to additionally protect each access point.

Why zero clients are a viable solution

There are many excellent cybersecurity solutions on the market to protect data, but many of these are costly or time-consuming – both of which are a no-go for most healthcare facilities. Doctors, nurses or healthcare workers don't have time to deal with complicated two-factor authentication or other advanced data protection systems. They often run from patient to patient and need easy and quick access to data.

A zero client offers the same user experience as a laptop and costs about the same. It doesn't change or slow down the user experience. And it doesn't require significant additional investment beyond what hospitals and doctor's offices are already budgeting for.

Recovering from a data breach or leak is extremely expensive, time-consuming, and embarrassing. With HIPPA, the healthcare industry was early to recognize the importance of protecting personal information, but has lagged behind in implementing advanced cybersecurity.

Early adoption has shown the value of using zero clients in healthcare. As healthcare organizations look to upgrade their laptops and workstations, more and more organizations will implement zero-client systems, which is a huge step forward in protecting patient data and making the industry more secure overall.

About Mark Kempf

In his role at CP North America, Mark serves as vice president of CP Technologies and CP Systems, overseeing the product and business development of the company's standard and custom high-performance computing platforms, LCD (displays), storage arrays, networking hardware and data interconnects military, industrial and commercial markets. Mark previously served 26 years in the military, most recently as a Captain in the US Navy as a program manager for the Naval Information Warfare Systems Command (NAVWAR). He earned a BS in mechanical engineering from the US military at West Point and an MBA from the **Naval Postgraduate School**.

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