



NPS IN THE NEWS

Weekly Media Report – July 12-18, 2022

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EDUCATION:

Prepping Public Safety Leaders to Respond to National Security Threats and Catastrophic Events

(Police One 13 July 22)

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RESEARCH:

USS Essex First Ship to Participate in Naval Postgraduate School 3D Printer Research

(DVIDS 10 July 22) ... Mass Communication Specialist 3rd Class Donita Burks

(Navy.mil 10 July 22) ... Mass Communication Specialist 3rd Class Donita Burks

(3D Print 13 July 22) ... Matt Kremenetsky

(Metal AM 12 July 22)

(3D Natives 13 July 22) ... Madeleine P.

(Yahoo Finance 18 July 22)

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USS Essex Tries Out 3D Metal Printing Under Way

(Maritime Executive 11 July 22)

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Multiple military and civilian operators have tested out 3D plastic printing in shipboard service, but the physical properties of plastic can only go so far. The trial aboard Essex is the first run for a **Naval Postgraduate School** (NPS) project on 3D metal printing on board, and the device they've selected can print aluminum parts up to about 10 inches square.

U.S. Navy Equips USS Essex Warship with Xerox 3D Printing Technology

(3D Printing Industry 11 July 22) ... Kubi Sertoglu

Commander, Naval Surface Force, U.S. Pacific Fleet (COMNAVSURFPAC) and the **Naval Postgraduate School** (NPS) have installed a Xerox 3D printer on the USS Essex, a Wasp-class amphibious assault ship.



[U.S. Navy Install 3D Printer on USS Essex as Part of Naval Research](#)

(TCT Magazine 12 July 22) ... Oliver Johnson

The USS Essex (LHD 2), a Wasp-class amphibious assault ship in the U.S. Navy, has been equipped with a 3D printer as part of **Naval Postgraduate School** (NPS) research.

[How Do We Predict Climate Change?](#)

(Science Blog 13 July 22)

To explore and predict how the climate will change, researchers create computer models of the real world. These mathematical models are based on the laws of physics and chemistry, which explain how water and air move, heat up, and cool in the atmosphere and ocean, how pollutants react in the atmosphere, and how sunlight and infrared radiation interact with molecules... Today, a new climate model is being developed by CliMA, a group of scientists, engineers, and mathematicians from Caltech, MIT, the **Naval Postgraduate School**, and JPL. This next-generation climate model integrates aspects of existing models with extensive data about Earth gathered by satellites and other instruments.

[Americans Can't Handle Their Guns. Time to Repeal the 2nd Amendment](#)

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We must repeal the Second Amendment if we want this country to ever be safe again... There have been 2,069 school shootings in America since 1970, according to the Center for Homeland Defense and Security's **Naval Postgraduate School's** K-12 School Shooting Database. But after every shooting, all we see from most Republican lawmakers is idle talk about "locking doors" and the ever-popular "thoughts and prayers."

FACULTY:

[Europe's Tiny Steps Won't Solve Its Energy Emergency](#)

(Foreign Policy 13 July 22) ... Brenda Shaffer

The European Union and its 27 member states have invested more money, effort, and political capital in energy policy than any other region in the world. Until this year, Europe was admired globally as the gold standard for energy and climate policy. Germany's Energiewende—or energy transition—was especially touted as a shining example of how to green the energy supply... Brenda Shaffer is a faculty member at the U.S. Naval Postgraduate School, a senior advisor for energy at the Foundation for Defense of Democracies, and a senior fellow at the Atlantic Council's Global Energy Center.

[“It is Not My Father’s Second Fleet”: Excerpts from Chapter Eight of “A Maritime Kill Web Force in the Making”](#)

(SLD Info 14 July 22)

With the strategic opportunity for rebuilding Nordic defense, the project begun in 2018 in Norfolk in reshaping the U.S. and allied navy's command structures and force design can find its real impact and meaning. The Nordic defense renaissance provides an opportunity for disruptive change and strategic redesign to deal with the challenges facing both European direct defense and North American defense... As Vice. Adm. Lewis put it to us: “We had a charter to re-establish the fleet. Using the newly published national defense strategy and national security strategy as the prevailing guidance, we spent a good amount of time defining the problem. My team put together an offsite with the **Naval Postgraduate School** to think about the way ahead, to take time to define the problem we were established to solve and determine how best to organize ourselves to solve those challenges.

[Bert Lundy Expands His Tutoring System into a Book: “Learn for Excellence”](#)

(The Webwire 14 July 22)

The author published a guide intended for parents, primarily in the US, who want to get the best possible education for their children... At the Naval Postgraduate School, Prof. Lundy taught classes on computer networks, on the formal modeling and analysis of network protocols, on the history and business of telecommunications, and basic programming. He has given talks at AT&T (later Lucent) Bell Laboratories, and at numerous conferences.



ALUMNI:

Lewisburg to Honor Distinguished Alumni

(Standard Journal 11 July 22)

A Naval aviator with more than 300 aircraft carrier landings, a Navy nurse who became a lawyer, a retired clinical neuropsychologist who once headed a department at the Cleveland Clinic, and a woman whose volunteerism never seems to end... Early in his career he obtained a B.S. in engineering science and an M.S. in fiscal resource management from the U.S. **Naval Postgraduate School** in Monterey, Calif. He was the recipient of numerous military awards. Following retirement, he entered the emergency services field, becoming an emergency management consultant, planner and coordinator for Monterey County, Calif.

A Matter of National Security

(UT News 12 July 22) ... Ayrel Seale

For a time in which America is not directly involved in a war, American national security professionals sure are busy. And a sizable number of them are alumni of UT's Clements Center for National Security... Other alumni are serving as faculty members teaching diplomatic and military history and security studies across the country, including at the Naval War College and the **Naval Postgraduate School**, the Air War College, West Point and civilian universities such as Duke, Notre Dame, Ohio State and Williams College.

Q&A: Rear Admiral Ronald J. Piret, Commander, Naval Meteorology and Oceanography Command

(Sea Power Magazine 14 July 22) ... Richard R. Burgess

Upon commissioning, Piret served in various operational positions, most notably aboard the Royal Navy's HMS Herald as the Operations Officer, and the USS Abraham Lincoln (CVN 72), where he served as the Meteorologist and Oceanographer during a deployment in the Western Pacific... Rear Adm. Ronald J. Piret is a native of Chico, California, and graduated in 1993 from the U.S. Naval Academy with a Bachelor of Science in Physical Oceanography. He holds master's degrees in oceanography and meteorology from the **Naval Postgraduate School** and national security and strategic studies from the Naval War College, where he graduated with distinction.

FEMA Selects MDEM Deputy ExDir for Inaugural Exchange Program

(Conduit Street 14 July 22) ... Kevin Kinnally

Maryland Department of Emergency Management (MDEM) Deputy Executive Director Chas Eby will be one of the first participants in the new Federal Emergency Management Agency (FEMA) Exchange Program. Eby will work with FEMA leadership in Washington, DC, through the end of the year to implement programs to deliver disaster recovery assistance to survivors and communities... Eby has worked at the Department of Emergency Management for eight years, overseeing all programs, administration, and emergency operations in his current role. He holds a Master of Arts degree in Security Studies from the **Naval Postgraduate School**. Eby has completed the FEMA National Emergency Management Executive Academy and a fellowship with the Johns Hopkins University Center for Health Security. He is from and resides in the City of Baltimore.

UPCOMING NEWS & EVENTS:

July 19-23: [Leading in the Cognitive Age -- Center for Executive Education Workshop](#)

July 26: [Strategic Communication Workshop \(SCW\)](#)

Aug 8-12: [Center for Executive Education NSLS Workshop](#)

Aug 15-19: [JIFX 22-4](#)

Aug 30- Sept 1: [Emerging Technology Awareness \(ETA\) for the Warfighter](#)



EDUCATION:

Prepping Public Safety Leaders to Respond to National Security Threats and Catastrophic Events

(Police One 13 July 22)

The Naval Postgraduate School provides police, fire and EMS leaders with the opportunity to develop their critical thinking skills and obtain a free master's degree.

Everyone remembers where they were on September 11, 2001. In the aftermath, do you remember the urgency to strengthen our national defenses, plans and intelligence to prevent another such attack on our country, our infrastructure and our cyber systems? Are we doing that today?

For law enforcement, fire, EMS and military personnel, there is an excellent opportunity to share your expertise to contribute toward protecting our country and systems and obtain a free master's degree in the process. The Center for Homeland Defense and Security programs at the Naval Postgraduate School (NPS) focus on leadership development to transform how public safety officials view an increasingly complex world and homeland security mission.

Through graduate- and executive-level coursework, seminars, and research, homeland security leaders gain the analytic and critical thinking skills and substantive expertise they need to create innovative solutions that address the threats facing the nation and local communities.

In this episode of Policing Matters, host Jim Dudley speaks with Heather Issvoran, Director of Strategic Communications, Naval Postgraduate School Center for Homeland Defense and Security, about the programs offered by NPS. Also featured on the podcast is NPS alumni Michael Petrie, a former EMS chief, alumni and thesis advisor to the NPS program.

To learn more about the programs offered by The Naval Postgraduate School, visit <https://www.chds.us/c/>.

[Prepping public safety leaders to respond to national security threats and catastrophic events \(police1.com\)](https://www.chds.us/c/)

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RESEARCH:

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As a proponent of enhancing overall readiness of any warfighting organization, Lt. Cmdr. Nicolas Batista, the Aircraft Intermediate Maintenance Department (AIMD) officer aboard Essex, said "Having this printer aboard will essentially accelerate, enhance and increase our warfighting readiness."

Batista stated this 3D printer, is one of the fastest printers on the market, capable of fabricating and printing aluminum up to 10" by 10". Many common components may be created on the ship to include heat sinks, housings, fuel adapters, bleed air valves, valve covers and more.



“The capabilities of the 3D printer will enable Essex to become more self-sufficient,” said Batista. He expressed that innovative operational concepts such as this 3D printing capability will be great additions in the future for every ship.

The next step in the evaluation of the printer will be to provide training to Sailors who will be using the equipment. As someone who enjoys hands-on learning, Aviation Structural Mechanic 3rd Class Roxanne Barrera expressed her excitement to be one of the first Sailors to receive this training.

“I was honored when my chain of command asked me to be the first Sailor aboard USS Essex to get the training for this 3D printer. I just want to learn how to operate it and share [the knowledge] with other people.”

While Essex has had the capability to manufacture small items needed on the ship, Aviation Electronics Technician 2nd Class Jonah Waage said, “We have never been able to make something with the precision and intricacy that this new 3D printer will provide which is important because it will contribute to saving time and money for our Navy in the long run.”

Batista stated that Commander Naval Air Force, U.S. Pacific Fleet (COMNAVAIRPAC) and Commander, Naval Air Systems Command (COMNAVAIRSYSCOM) have also initiated efforts to establish an AIMD work center, solely designed for the AM concept, and are striving towards the capability of fabricating needed aircraft parts with a 3D Printer.

“Additive Manufacturing (AM) has become a priority and it’s evident that AM will provide a greater posture in warfighting efforts across the fleet and will enhance expeditionary maintenance that contributes to our Surface Competitive Edge.”

During testing and evaluation at sea, a team aboard Essex will create various shipboard aluminum items with the 3D printer and provide feedback to NPS and COMNAVSURFPAC on the results.

Essex is ported in Pearl Harbor and participating in Rim of the Pacific (RIMPAC) 2022.

For more news from USS Essex, follow us on Facebook at <https://www.facebook.com/USSESSEX>, or visit <https://www.surfpac.navy.mil/lhd2>

[DVIDS - News - USS Essex First Ship to Participate in Naval Postgraduate School 3D Printer Research \(dvidshub.net\)](#)

[USS Essex First Ship to Participate in NPS 3D Printer Research > U.S. Pacific Fleet > News \(navy.mil\)](#)

[USS Essex First U.S. Navy Ship to Test 3D Printing at Sea - 3DPrint.com | The Voice of 3D Printing / Additive Manufacturing](#)

[Metal 3D printing tested on US Navy’s USS Essex \(metal-am.com\)](#)

[USS Essex Becomes First American Ship With a Metal 3D Printer Onboard - 3Dnatives](#)

[Xerox® Elem™ Additive and U.S. Navy Deploy First Metal 3D Printer at Sea \(yahoo.com\)](#)

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USS Essex Tries Out 3D Metal Printing Under Way

(Maritime Executive 11 July 22)

The biennial Rim of the Pacific exercise is always an opportunity to showcase new naval technology, and this year's edition is no exception. The amphib USS Essex is bringing a new capability to the show this year with the installation of a 3D metal printer - a novel capability to have aboard under way.

Multiple military and civilian operators have tested out 3D plastic printing in shipboard service, but the physical properties of plastic can only go so far. The trial aboard Essex is the first run for a **Naval Postgraduate School** (NPS) project on 3D metal printing on board, and the device they've selected can print aluminum parts up to about 10 inches square.

The machine appears to be a variant of the Xerox ElemX liquid metal printer, potentially the same unit acquired by the Naval Postgraduate School last year. ElemX is unique in its use of solid aluminum wire - not flammable aluminum powder - as a feedstock material, reducing fire risk for an onboard installation.



While Essex has a capable machine shop and can already make small parts while under way, the team should be able to use ElemX to print up aluminum components like heat sinks, housings, fuel adapters, valve covers and other small items, saving time and money. During testing and evaluation at sea, a team aboard Essex - including some current crewmembers - will use it to make shipboard parts and send feedback to NPS.

“We have never been able to make something with the precision and intricacy that this new 3D printer will provide,” Essex crewmember AT2 Jonah Waage said in a statement.

The NPS study's ultimate objective is to "transform the way the military supplies forward-deployed forces" by shifting to 3D-printed parts instead of the conventional warehousing and distribution architecture (where applicable). If achieved, this would shorten lead times for frontline units and reduce supply chain complexity.

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

The evaluation of the 3D printer is part of a broader program the Navy is undertaking exploring additive manufacturing which is also exploring the capability of fabricating needed aircraft parts with a 3D printer.

The U.S. Navy has been testing 3D printing for the last few years in a variety of different applications. In 2018, they installed the first prototype 3D-printed metal part aboard the USS Harry S Truman for a one-year test and evaluation trial. By October 2020, U.S. Navy and Naval Sea Systems Command (NAVSEA) reported it had approved a total of 182 3D printable parts in its database and had more than 600 additional parts undergoing engineering review. Those tests were being conducted onshore at fabrication plants with the Navy now looking at the capabilities of extending small part manufacturing to the ships.

The commercial industry has also been exploring the use of 3D printing. Early in 2021, for example, 3D-printed mechanical parts were installed aboard the U.S.-flagged oil tanker Polar Endeavor in a test. After six months in operation, the parts were retrieved and inspected by the vessel’s crew, followed by a remote survey by ABS that confirmed their good condition. ABS approved the spare parts after successful onboard testing on the tanker creating the opportunity for wider applications of the technology.

[USS Essex Tries Out 3D Metal Printing Under Way \(maritime-executive.com\)](https://www.maritime-executive.com/story/US-Navy-Tries-Out-3D-Metal-Printing-Under-Way)

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U.S. Navy Equips USS Essex Warship with Xerox 3D Printing Technology

(3D Printing Industry 11 July 22) ... Kubi Sertoglu

Commander, Naval Surface Force, U.S. Pacific Fleet (COMNAVSURFPAC) and the **Naval Postgraduate School** (NPS) have installed a Xerox 3D printer on the USS Essex, a Wasp-class amphibious assault ship.

Sitting at over 800 feet long, the mobile landing helicopter dock can house more than 1,600 troops and up to dozens of aircraft at a time.

In the wake of the installation, the Essex will serve as a test bed to evaluate the performance of the unnamed 3D printer out on the open sea for the very first time. If successful, the Navy hopes to leverage the additive manufacturing technology to vastly improve its overall warfighting capabilities.

Lt. Cmdr. Nicolas Batista, the Aircraft Intermediate Maintenance Department (AIMD) officer of the Essex, said, “Having this printer aboard will essentially accelerate, enhance and increase our warfighting readiness. The capabilities of the 3D printer will enable Essex to become more self-sufficient.”

The power of spare part 3D printing



In the US Navy, ships will usually go out to sea for up to two weeks each month for training purposes. On the other hand, extended deployments may last up to six to nine months at a time, making it difficult to determine all of the spare parts that may be required in that time from the get-go. As such, there's a constant need for flexible manufacturing capabilities housed right on the ships themselves.

The USS Essex already has manufacturing facilities to produce some of the smaller parts needed on the ship, but these facilities are limited in size and versatility.

Jonah Waage, Aviation Electronics Technician 2nd Class, said, "We have never been able to make something with the precision and intricacy that this new 3D printer will provide which is important because it will contribute to saving time and money for our Navy in the long run."

The metal 3D printing system on board the Essex is reportedly one of the fastest of its kind on the market. The machine can fabricate aluminum parts up to 10" x 10" in size, and will eventually be used to print fuel adapters, heat sinks, bleed air valves, housings, valve covers, and more.

What's next for the USS Essex?

The next stage in the project's timeline will involve training the sailors on how to use the 3D printer. This will pave the way for the sea testing program, whereby a team based on the Essex will 3D print a variety of aluminum maritime parts and report the results back to NPS and COMNAVSURFPAC.

Commander, Naval Air Force, U.S. Pacific Fleet (COMNAVAIRPAC) has also begun working on establishing a specialist in-house facility dedicated to developing new 3D printing applications for the armed forces. The work center will also be used to fabricate spare aircraft parts on demand.

Batista adds, "Additive Manufacturing has become a priority and it's evident that AM will provide a greater posture in warfighting efforts across the fleet and will enhance expeditionary maintenance that contributes to our Surface Competitive Edge."

The Navy isn't the only branch of the armed forces leveraging additive manufacturing for spare parts. In May, the US Air Force invested in a 3D printer capable of producing spare parts for its Strategic Automated Command Control System (SACCS). The move came when a supplier stopped manufacturing a red fault indicator lens cap to cover the lights on the SACCS system, prompting the Air Force to 3D print its own replacement. By utilizing the technology to produce the first cap, they recovered the cost of the printer and scanner and saved more than \$4,000.

Elsewhere, the US Army Combat Capabilities Development Command (DEVCOM) is conducting a project that could enable soldiers to 3D print everything from shelter to weapons on the battlefield in the future. Called Project Prime, the initiative is being carried out alongside the US Army 7th Special Forces Group (Airborne) and remote 3D printing secured transmission service DEFEND3D.

[U.S. Navy equips USS Essex warship with Xerox 3D printing technology - 3D Printing Industry](#)

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U.S. Navy Install 3D Printer on USS Essex as Part of Naval Research

(TCT Magazine 12 July 22) ... Oliver Johnson

The USS Essex (LHD 2), a Wasp-class amphibious assault ship in the U.S. Navy, has been equipped with a 3D printer as part of **Naval Postgraduate School** (NPS) research.

Essex is the first ship to participate in the initial testing and evaluation of the 3D printer during underway conditions to determine the printers viability when out to sea. The testing takes place as part of Rim of the Pacific (RIMPAC) 2022, the world's largest international maritime warfare exercise, which features units from 26 nations and includes over 25,000 personnel.

Lt. Cmdr. Nicolas Batista, the Aircraft Intermediate Maintenance Department (AIMD) officer aboard Essex, said: "Having this printer aboard will essentially accelerate, enhance and increase our warfighting readiness."

According to Batista, the printer they have installed is one of the fastest on the market, capable of fabricating and printing aluminium up to 10 x 10 inches. Common components that may be created on the ship include heat sinks, housings, fuel adapters, bleed air valves, valve covers and more.



Batista went on to say: “The capabilities of the 3D printer will enable Essex to become more self-sufficient,” and he is of the opinion that innovative operational concepts such as 3D printing will be great additions in the future for every ship.

The next step is to provide training to Sailors who will be using the equipment. Roxanne Barrera, Aviation Structural Mechanic 3rd Class, expressed her feelings about being amongst the first to be trained on the machine. Barrera said: “I was honoured when my chain of command asked me to be the first Sailor aboard USS Essex to get the training for this 3D printer. I just want to learn how to operate it and share the knowledge with other people.”

Essex has had the capability of manufacturing small items needed on the ship before, but Jonah Waage, Aviation Electronics Technician 2nd Class, said: “We have never been able to make something with the precision and intricacy that this new 3D printer will provide, which is important because it will contribute to saving time and money for our Navy in the long run.”

An Aircraft Intermediate Maintenance Department (AIMD) is in the process of being established by Commander Naval Air Force, U.S. Pacific Fleet and Commander, Naval Air Systems Command. Solely designed for the AM concept, will help achieve the goal of fabricating needed aircraft parts with a 3D printer.

Batista added: “Additive Manufacturing (AM) has become a priority and it’s evident that AM will provide a greater posture in warfighting efforts across the fleet and will enhance expeditionary maintenance that contributes to our Surface Competitive Edge.”

The Essex carries helicopters, Harrier jets, Landing Craft Air Cushion (LCAC), as well as conventional landing craft and assault vehicles. The 844-foot long, 44,000-ton ship can transport and land ashore troops, tanks, trucks, artillery, and other supplies.

The news comes less than a year after the U.S. Navy announced they would be installing 25 Stratasys F900 3D printers by 2026 as part of a 20 million USD contract. Also last year, the U.S. Department of Defense outlined its additive manufacturing strategy and the role the technology could potentially play in shifting to a digital manufacturing system.

[U.S. Navy install 3D printer on USS Essex as part of naval research - TCT Magazine](#)

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How Do We Predict Climate Change?

(Science Blog 13 July 22)

To explore and predict how the climate will change, researchers create computer models of the real world. These mathematical models are based on the laws of physics and chemistry, which explain how water and air move, heat up, and cool in the atmosphere and ocean, how pollutants react in the atmosphere, and how sunlight and infrared radiation interact with molecules.

Models also integrate measurements of the sun’s radiation and of Earth’s atmosphere, seas, ice, volcanos, and land biosphere. They are driven by data and future scenarios about humanity’s output of carbon dioxide and of pollutants that affect the climate.

Models agree that the climate is changing because of human activity and that the average global temperature and the sea level will continue to rise. They also agree that weather patterns will change. Some of their specific predictions differ, primarily because each model includes different ways to model uncertain factors such as clouds.

In the video below, Caltech’s Tapio Schneider, Andrew Stuart, and Anna Jaruga talk about why increased precision is an urgent goal for climate models.

Schneider and Stuart are co-founders of the Climate Modeling Alliance ([CliMA](#)). Schneider is Caltech’s Theodore Y. Wu Professor of Environmental Science and Engineering. He is also a senior research scientist at the Jet Propulsion Laboratory (JPL), which Caltech manages on behalf of NASA. Stuart is Bren Professor of Computing and Mathematical Sciences. Jaruga is a Caltech research scientist focused on clouds.



How do weather forecasts differ from climate predictions?

Weather forecasts have a time horizon of about 10 days, while climate models are made to predict what will happen 10 years or even 100 years from now. The physics of climate modeling is similar to weather forecasting, but the questions are different. Weather forecasts project daily high and low temperatures, how much rain or snow may fall, and how fast the wind will blow in a specific place and time.

Climate models look at the bigger picture. They ask, for the planet and individual regions, how will average conditions change? How much rain or snow is expected to fall in a future year? How will high and low temperatures and the presence of clouds differ from what we are used to now? Where will the ocean's high tides reach? What kinds of extremes—hurricanes, monsoons, winter storms, floods, droughts, wildfires—should we be ready for?

The use of data to improve computer models of weather forecasts over the last 50 years is a success story in science. Now, researchers aim for the same level of success in projections of the future climate.

How do researchers test climate models?

Models developed between 1970 and the early 2000s have quite accurately predicted temperatures on Earth's surface. Other than checking that models adhere to the laws of physics and chemistry, how can researchers be sure that today's models can accurately predict the future?

One way that models are tested or validated is by plugging in data from a start date many decades in the past to see if their forecasts (or hindcasts, in this case) match historical weather data. Models are also compared with each other to help researchers flag and study any important disagreements or variations.

How do climate models adapt to changes in greenhouse gas emissions?

Greenhouse gases emitted by human activities affect the climate. These emissions change in response to policies, economics, and sociological factors. To account for this variability, scientists run climate models with input that reflects different hypothetical emission scenarios, spanning a range of possible trajectories of the world's economies and energy systems. The scenarios estimate emissions of greenhouse gases and smog-forming air pollution that people will generate in various areas on Earth. This approach helps identify the range of potential future climate conditions and better inform our decisions and preparations.

What does Caltech contribute to climate models?

For decades, Caltech scientists have characterized the atmospheres of planets and built our understanding of the physics and chemistry of clouds, air pollution, and airborne dust. That effort has intensified with the establishment of Caltech's Ronald and Maxine Linde Center for Global Environmental Science. Caltech geoscientists and chemists team up with researchers who develop Earth-observing missions at JPL. Data from these missions improves humanity's understanding of Earth's systems.

Today, a new climate model is being developed by CliMA, a group of scientists, engineers, and mathematicians from Caltech, MIT, the **Naval Postgraduate School**, and JPL. This next-generation climate model integrates aspects of existing models with extensive data about Earth gathered by satellites and other instruments.

[How Do We Predict Climate Change? - ScienceBlog.com](http://www.scienceblog.com)

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Americans Can't Handle Their Guns. Time to Repeal the 2nd Amendment

(Yahoo! 11 July 22) ... Carli Pierson

We must repeal the Second Amendment if we want this country to ever be safe again.

Whether it's killings by police, like the 60 bullets fired into Jayland Walker, or by civilians like in Highland Park, Illinois, Uvalde, Texas, or Buffalo, New York our national record on gun violence is an international embarrassment. It can't be reformed without doing away with guns entirely.



States like California and New York that have tried to set restrictive gun laws can do little when guns are trafficked in from other states. What's more – legislative attempts at restricting gun rights were recently shot down by a Supreme Court gone rogue.

We're way beyond what the framers ever had in mind for gun rights already. And for a selective originalist Supreme Court conservative majority, it's hard to justify glossing over the history behind the Second Amendment.

Much like we did away with the 18th (prohibition) when it no longer served us, it's time to do away with the archaic constitutional amendment holding Americans hostage in their own country.

It's time to say, "Hey, hey, ho, ho, the Second Amendment's gotta go."

How to prevent the next Derek Chauvin: Weaken unions and make police pay for misconduct

It doesn't get easier: Covering mass shootings has become routine – and endless

The problem: Americans can't handle guns

Americans can't handle their guns. There were a whopping 692 mass shootings in the United States last year, according to the Gun Violence Archive, which defines mass shootings as having "a minimum of four victims shot, either injured or killed, not including any shooter who may also have been killed or injured in the incident."

In 2021, more than 45,000 Americans were killed by firearms. And while we have just over 4% of the world's population, as of 2017 we had over 40% of the world's civilian-owned guns.

There have been 2,069 school shootings in America since 1970, according to the Center for Homeland Defense and Security's **Naval Postgraduate School's** K-12 School Shooting Database. But after every shooting, all we see from most Republican lawmakers is idle talk about "locking doors" and the ever-popular "thoughts and prayers."

Meanwhile, other countries tighten gun laws after mass shootings, including Canada, which still has relatively high gun ownership rates but much lower gun homicide rates compared with the United States.

America's only option is to take drastic action and reform our antiquated Constitution.

We need to take action: Our well-meaning hashtags won't stop racist mass shootings

Highland Park mom's text: 'We're hiding.' Then she and her daughter fled in terror.

The solution: Get rid of these 27 words

27 words.

"A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed." We are often reminded of the last 14 words of the amendment but completely overlook the first 13. But those 13 words provide critical historical context, which our cherry-picking "originalist" Supreme Court has glossed over in favor of expanding gun rights far beyond what the Founders ever envisioned for the Bill of Rights, and at the expense of American lives.

In 1791, when the Second Amendment was adopted, the Founders had one thing in mind: To protect the people against a standing army, specifically, the muskets of the British standing army of King George III. The Second and Third Amendments, meant to be read together, were about protecting the people from the tyranny of professional, full-time militaries (much like the one we have now). They were not intended to protect the people from one another. They were not intended to protect the people from AR-15-style weapons.

Suzette Hackney: Jayland Walker left his gun in the car. Then Akron police shot him 60 times.

Our Constitution is "the world's longest surviving written charter of government," according to the Senate's website, but it is far from immutable: "The Constitution has been amended 27 times, most recently in 1992."

In order to get rid of the Second Amendment we'd use Article V of the Constitution, which sets out two options: Congress, through a joint resolution passed by a two-thirds vote, or by a congressional convention after petitions from two-thirds of the state legislatures, could propose the amendment.

I am not the only lawyer to point to the obvious solution. After 14 students and three staff were killed at Marjory Stoneman Douglas High School in Parkland in 2018, none other than the late Justice John Paul Stevens called for repealing the Second Amendment in an opinion column in The New York Times.



It took five decades of campaigning for conservatives to get the constitutional right to abortion overturned in the Supreme Court. Repealing the Second Amendment may look like a long shot today, but if progressives and moderates show up in full force to vote the right people into office over the next couple of decades, nothing is impossible.

[Americans can't handle their guns. Time to repeal the 2nd Amendment. \(yahoo.com\)](#)

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FACULTY:

Europe's Tiny Steps Won't Solve Its Energy Emergency

(Foreign Policy 13 July 22) ... Brenda Shaffer

The European Union and its 27 member states have invested more money, effort, and political capital in energy policy than any other region in the world. Until this year, Europe was admired globally as the gold standard for energy and climate policy. Germany's Energiewende—or energy transition—was especially touted as a shining example of how to green the energy supply.

No one aspires to emulate the Europeans today. Germany and the EU have spiraled headfirst into the globe's worst energy crisis since the Arab oil embargoes of the 1970s and 1980s. All across the continent, Europe's energy policies have led to astronomical price increases, industry shutdowns, potential energy shortages, and geopolitical vulnerability. Germany, in particular, is in crisis mode and will likely see much worse, as its entire economic model—based on energy-hungry manufacturing, cheap Russian gas, and a self-mutilating shutdown of nuclear energy that Berlin still won't reverse—is on the verge of collapsing without a plan B. In short, Europe is in a mess of its own creation.

Recently, the EU has taken several steps in hopes of improving its energy security and extricating itself from its current crisis. The steps include asking natural gas producers other than Russia to supply additional volumes, a recent decision by the European Parliament to classify natural gas and nuclear energy as eligible for investments dedicated to green energy, and new gas storage mandates for member states. These steps, however, will not be enough to avert a major energy crisis in Europe in the coming months. Europe needs to do better—and fast.

If the EU is going to significantly improve its energy security, it will need to move beyond policy tweaks. Instead, what's called for is a much broader paradigm shift that abandons the failed policies of the past decade or more. Europe built its energy policy along several main policy lines: incentives and mandates for renewable energy; restrictions on domestic and other natural gas supplies to boost demand for renewables; reliance on market mechanisms, such as trading hubs for energy sales; and the complete separation of energy from national security considerations.

Brussels has taken steps to break with its policy of crowding out natural gas to ensure more room for renewables. EU representatives have reached out to natural gas producers—including the United States, Israel, Egypt, Azerbaijan, and Qatar—asking them to send additional volumes to Europe. These efforts have resulted in increased imports, including shipments of liquefied natural gas (LNG) and a modest increase of pipeline gas from Azerbaijan. Imports from Norway are set to increase as well, and the Netherlands is considering reopening a major gas field shut down due to environmental concerns.

These steps will not be enough to avert a major energy crisis in Europe in the coming months; Europe needs to do better—and fast.

The problem, however, is that Europe is still refusing to give suppliers a clear horizon for these deliveries, which will artificially restrict supplies. Europe's continued fixation on an unrealistic schedule for eliminating all fossil fuels—including relatively clean natural gas—from its energy supply means that Brussels is actively discouraging gas buyers from concluding long-term contracts with producers. However, LNG and pipeline gas is usually sold on lengthy contracts, since gas production and export infrastructure require substantial investments that are normally recouped over many years. Producers cannot take the risk of a major project without a guaranteed market. That is why Chinese companies have



been snapping up long-term LNG supplies from the United States while Europe has tied its hands. Instead, European countries are restarting their mothballed coal- and fuel oil-fired power plants and seeing sharply higher uses of the dirtiest fuels—and rising emissions to go with it. It seems Europe is more comfortable with increased coal consumption over cleaner natural gas, since access to coal supplies does not entail long-term commitments. Although every bit of energy helps, Europe’s self-imposed restrictions on gas contracts condemn the continent to a continued crisis.

This policy makes a mockery of Europe’s vaunted green goals. The energy crisis in Europe—which, contrary to the popular narrative, began long before Russia’s invasion of Ukraine—has shown that when European countries don’t have enough gas, they turn to coal and fuel oil. By restricting new gas contracts, Europe ended up with higher coal and oil consumption and thus higher air pollution and carbon emissions.

Securing additional gas volumes to replace Russian supplies is not enough. Brussels needs to ensure not only sufficient supply but reasonable prices. Russian gas has been a cheap source of energy that Europe says it now wants to phase out—by two-thirds by year’s end and entirely out within a decade. Moscow’s weaponization of the gas supply—it has shut down deliveries to several countries already—has encouraged Europe to stick to this goal. However, Brussels needs to ensure that any new imports are priced so they don’t paralyze Europe’s economy. Countries such as Germany and Italy rely on manufacturing, where energy is one of the biggest costs. Their industrial goods cannot be competitive if energy is expensive.

Brussels, therefore, needs a plan for more pipeline-supplied natural gas, which is generally cheaper than LNG and has less volatile pricing. Even if the Ukraine crisis is resolved and European countries like Germany return to high volumes of Russian imports, they will need to reprioritize energy security by diversifying sources and types of fuels, creating redundancies in infrastructure and ensuring ample energy storage.

Brussels’s recent decision to allow natural gas and nuclear energy to receive investments from green funds is an important step toward better energy security. However, several commercial hurdles still stand in the way. In new EU legislation, natural gas was granted a window of operation only until 2035—not enough, in most cases, to realize a sufficient return on investments in major new production or export infrastructure. In addition, global nuclear capacity around the world is shrinking, mainly because the current generation of reactors, which is safer than past ones, is also very costly. This new legislation will not change the bottom line; and thus, new nuclear capacity will remain challenged in Europe, even if extending the life of existing nuclear reactors has now become more likely. Potentially, the new EU policy approach could lead to the introduction of small module reactors, which require less upfront investments and may resolve many of the remaining safety concerns, but the timeline for their introduction to Europe is still unclear. These new reactors would require a risky bet on infrastructure that has not yet been built or even received commercial support.

The crisis makes it all the more urgent that Europe finally treats energy as a part of national security, not just a subcategory of climate policy. Europe’s energy security problems long predate Russia’s invasion of Ukraine. Europe set itself up to be vulnerable and already experienced energy crises over the past two winters. Still, most EU countries did not change course—for example, by diversifying gas suppliers or expanding storage.

To be sure, the EU’s new mandates to increase gas storage will help reduce its vulnerability. However, Europe will also need to examine the geopolitical implications of many of the energy market rules it designed. Exhibit A is the mechanism for setting gas prices at trading hubs instead of promoting bilateral, long-term contracts between suppliers and consumers. Hub trading has actually increased the Kremlin’s power over European gas prices: As the swing producer, Russia can rev up or reduce supplies to create its ideal price—which, right now, is one that produces maximum pain for Europe as punishment for supporting Ukraine. In addition, Brussels should review its unbundling policy in the energy sector, which requires the supply, storage, and distribution of gas to be owned by different entities.

In the coming weeks, several more European utilities will face insolvency, and European governments should prepare a policy response. Germany seems to be supporting bailouts while France has already decided to nationalize a utility. European countries need the utilities to keep supplying energy



to their publics and will need to design a model that allows these companies to continue to operate in volatile price environments.

Ironically, the beginning recession and reduction in economic activity will likely lower energy prices and ease supply shortages in Europe. With the EU's systemic energy security challenges still unresolved and barely addressed, any temporary easing of the crisis should not be an excuse to sit back and return to its previous policy approach.

Brenda Shaffer is a faculty member at the U.S. Naval Postgraduate School, a senior advisor for energy at the Foundation for Defense of Democracies, and a senior fellow at the Atlantic Council's Global Energy Center.

[Europe's Tiny Steps Won't Solve Its Disastrous Energy Crisis \(foreignpolicy.com\)](http://foreignpolicy.com)

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“It is Not My Father’s Second Fleet”: Excerpts from Chapter Eight of “A Maritime Kill Web Force in the Making”

(SLD Info 14 July 22)

With the strategic opportunity for rebuilding Nordic defense, the project begun in 2018 in Norfolk in reshaping the U.S. and allied navy's command structures and force design can find its real impact and meaning. The Nordic defense renaissance provides an opportunity for disruptive change and strategic redesign to deal with the challenges facing both European direct defense and North American defense.

Whether the United States fully embraces this opportunity rests in part on whether the strategic shift launched in 2018 can be maintained and leveraged over the next few years.

In our just published book, *A Maritime Kill Web Force in the Making: Deterrence and Warfighting in the XXIst Century*, we have provided analysis of how the maritime forces can work together to deliver the kind of defense capabilities appropriate to 21st century threats from the authoritarian powers.

When one combines this book with our earlier book, *The Return of Direct Defense in Europe: Meeting the Challenge of XXIst Century Authoritarian Powers*, one can see how we have been focusing on both strategic changes, and the changes in both the art of warfare and the art of warfighting required as we move beyond the land wars of the past twenty years. We have argued that this is not only a strategic shift but a strategic shock, and Russian actions in Ukraine certainly have underscored those key points.

What follows is an excerpt from chapter eight in our new book:

The U.S. Navy is shaping an integrated distributed force. Working connectivity throughout the force and working new ways to shape modular task forces provides the capability for the U.S. Navy to be more lethal, survivable, and effective and lays down the foundation for working new technologies into the fleet along the lines of the payload/utility kill web approach which we discuss in the next chapter.

The standup of new fleets in Norfolk to deal with the Russian threat starting in 2018 provides a case study of such change. We spent time with the command as well as with the North Carolina-based Marines to understand how the relaunch of Second Fleet and the standup of a new NATO command in the United States drive and reflect the changes in fleet operations shaping a way ahead for a distributed force within integratable kill webs.

Second Fleet and Allied Joint Force Command Norfolk were placed under the command of Vice Adm. Lewis to launch the new approach and to shape the initial way ahead. According to his original deputy, Vice Adm. Mustin, who is now head of the Naval Reserves, “What made us successful over the last 20 years, post 9/11, is not what's going to make us successful into the next few decades.

Working with Vice Adm. Lewis has been important as well. As Second Fleet Commander, he clearly understands that we need to shape a new approach. When I was in High School in the 80's, my father was Second Fleet Commander, so I can legitimately say that “The new Second Fleet is not your father's Second Fleet.” He went on to add that “What Vice Adm. Lewis wants and what we are offering started with a clean sheet of paper as it relates to the design of the reserve force for C2F.”



The opportunity which the U.S. Navy has had to standup a new fleet in Norfolk to deal with North Atlantic defense as well as to work interactively with the standup of the only NATO operational command on U.S. territory has clearly allowed for shaping an innovative way ahead for fleet operations, and joint and allied integration to deal with the Russian, not the Soviet threat.

We have discussed the standup of the commands and their interaction in crafting a fully operational fleet with the leadership of both commands as well as with the Marines who are working with them. It is clear that from the outset, the approach has been to work from the ground up to have a distributed integrated force.

As Vice. Adm. Lewis put it to us: “We had a charter to re-establish the fleet. Using the newly published national defense strategy and national security strategy as the prevailing guidance, we spent a good amount of time defining the problem. My team put together an offsite with the **Naval Postgraduate School** to think about the way ahead, to take time to define the problem we were established to solve and determine how best to organize ourselves to solve those challenges.

“We used the Einstein approach: we spent 55 minutes of the hour defining the problem and five minutes in solving it. Similarly, we spent the first two and a half months of our three-month pre-launch period working to develop our mission statement along with the functions and tasks associated with those missions. From the beginning our focus was in developing an all-domain and all-function command.

“To date, we clearly have focused on the high-end warfighting, but in a way that we can encompass all aspects of warfare from seabed to space as well.”

In a speech in early 2021 to DSI’s Fifth Annual Joint Networks Conference, Vice. Adm. Lewis underscored how he viewed the central role of allied and joint integration in shaping a way ahead for the commands.

“At C2F, we have integrated officers from multiple allied nations directly into the fleet staff. The U.S. Marines, reserve component officers, and foreign exchange officers are fully functioning staff members—not just liaison officers—and they include a two-star Royal Canadian Navy officer as the vice commander of C2F.

“At JFCNF, an initial team of fewer than ten individuals stood up the command with the help of reserve, joint, and international officers—a testament to integration from its inception. We are also integrating the staff by functional codes (C2F N-codes in the same building with their JFCNF J-codes), and we aspire to use NATO standards for everything from classification to mission orders and associated command-and-control systems to realize our full potential.”

In that speech, Vice. Adm. Lewis highlighted the importance of interoperability and interchangeability in working fleet capabilities. “Interoperability is defined as ‘the ability to act together coherently and efficiently to achieve tactical, operational, and strategic objects,’ often involving the ability to exchange information or services by means of electronic communications. We must then be integrated—the ability of forces to not only work toward a similar mission, but to do so as one unit.

“An example of this is the Mendez Nunez, who deployed as part of the Abraham Lincoln Carrier Strike Group in 2019. The final step in the spectrum of relationships is interchangeability. That is the ability to accomplish the mission, regardless of which nation is executing a particular role.”

The launch of the C2F saw the addition of Lewis’s Vice Commander to be a Canadian Rear Admiral. One clearly important fact cannot be missed when visiting VADM Lewis, is that one finds his office flanked on one side by a Canadian Rear Adm. and on the other by a British Rear Adm. The first is his C2F deputy, and the second is his NATO deputy.

It is hard to miss the point: this is a command focused on integration of maritime capability across the North Atlantic. The importance of having a Canadian Rear Adm. within the American command cannot be overstated. Rear Adm. Waddell brings experience from commanding Canadian forces in the Pacific and the Atlantic.

According to Waddell: “We will not be as large a command as other numbered fleets. We are designed to max out at about 250 people and currently are around 200 now. We must be different and innovative in how we get after the missions. We need to make sure we’re using tools and alternative resources, because we don’t have that depth and capacity of people, so you have to find a different way.”



As a startup command that is FOC, they are not emulating other numbered commands in many ways. “We are not primarily focused on the business of force generation, but we focus on how to use assigned forces to shape a desired outcome. We don’t want to get in the space of those responsible for force generation: we just want to be able to advocate for timely, effective outputs that optimize the use of the fleet.”

He noted that the assumption that the Second Fleet was going to be the Second Fleet of old was misplaced. “The old Second Fleet was interested in sea lines of communication. But the new Second Fleet is focused on strategic lines of communication. This is an all-domain perspective, and not just the convoy missions of past battles of the Atlantic.” He referred to C2F as the maneuver arm in providing for defense, deterrence, and warfighting but as part of a whole of government approach to defending the United States, Canada, and NATO allies against threats.

He underscored that “we are flexible and unconcerned with regard to whom we will work for. Operationally, we work for NAVNORTH (Fleet Forces Command) for the Homeland Defense Mission, but we can seamlessly transfer and work for NAVEUR/ EUCOM to defend forward, or to work in the GIUK Gap for an Allied Joint Force Command.”

How did we end up with a Vice Commander who is Canadian?

As Rear Adm. Waddell tells it, “Vice. Adm. Lewis was asked to stand up Second Fleet and given much latitude to do so. He went to a senior Canadian official to ask for a Royal Canadian Navy officer to serve as his deputy.”

Waddell felt that bringing a Canadian officer into the force made a lot of sense for a number of reasons.

First, because of the partnership nature of operations in the area of interest.

Second, because the Canadians have experience in operating in the high north, which could be brought to the renewed efforts on the part of the United States side to do so.

Third, as Waddell himself works the C2F experience he can weave what he learns into Canadian approach to operations. “It’s not lost on me that we as a Canadian service honed our teeth in the battle of the Atlantic in the Second World War in the North Atlantic and then in the ASW fight through the Cold War. Those competencies, although we were collectively distracted a little bit from iterations to CENTCOM and in the Persian Gulf for some time, are crucial going forward. I think we’ve reinforced those capabilities and are investing in new capabilities at home in Canada, such as with the Type 26 surface combatant program, a very robust platform.”

He discussed various tools and approaches being used to understand how to scope the challenges and priorities, including hosting a Battle of the Atlantic tabletop exercise. The goal of efforts like these are to scope out the various interactions across an extended battlespace to understand how fights influence one another.

All of this leads to a very significant conclusion about the U.S. Navy and allies integrating across an extended battlespace and operating distributed forces. “For the web of capabilities, you need to be ready to fight tonight, you need to be able to seamlessly integrate together across the fleet, inclusive of U.S. and allied forces. You fight as a fleet.”

That means fundamental change from a cultural assumption that the U.S. Navy has run with for many years. “You need to understand and accept that a fighting force needs to be reconfigurable such that others can seamlessly bolt on, participate in, or integrate into that force. That might mean changes from the assumptions of how the Navy has operated in the past to successfully operate with allies.” Reconfigurable across a coalition is clearly enabled by kill web capabilities to operate as flexible modular task forces.

The standup of Allied Joint Forces Command occurred shortly after that of the new C2F. And the concept from the outset was that both commands would work together under the leadership of a single U.S. Admiral to find ways to shape more effective leveraging of U.S. and Allied capabilities and to be able to operate as a much more effective integrated force than in the past.

JFC Norfolk was created at the 2018 Brussels Summit as a new joint operational-level command for the Atlantic. It reached an important milestone in September 2020 when it declared Initial Operational



Capability. JFC Norfolk is the only operational NATO command in North America and is closely integrated with the newly reactivated U.S. Second Fleet.

JFC reached its initial operating capability in September 2020. Royal Navy Rear Adm. Betton, who was the first commander of HMS Queen Elizabeth, is the Deputy Commander of Allied JFC.

According to a discussion we had with Betton in March 2021, “Coming here 18 months ago has been a really exciting professional opportunity, and genuinely a pleasure to have another run at setting up a team pretty much from scratch. The Second Fleet team was well on the way by the time I got here, but the NATO team was just about at conception, but not much beyond that.”⁶³ The geography and three-dimensional operational space of the NATO zone of responsibility is very wide indeed.

As Betton put it: “SACEUR’s area of responsibility, goes all the way from the Yucatan peninsula in the Gulf of Mexico to the North Pole. I’ve always loved the phrase from Finnmark to Florida, or Florida to Finnmark. But it is also important to realize all domain challenges and threats that we face. It’s everything from seabed infrastructure, through the sub-sea water column, the surface, the airspace above it, and up into the satellite constellation above that.”

The allies are bringing new capabilities to the fight, such as P-8s, and F-35s, and new combat ships as well. Finding ways to integrate evolving allied capabilities by the “relevant nations” is crucial to shaping a more effective allied deterrent and warfighting strategy in the North Atlantic.

As Betton put it: “The U.S. is by far the dominant figure of NATO, but it’s not the only piece. And it’s not always just the heavy metal that is relevant. It’s the connectivity, it’s the infrastructure and the architecture that enables the 30 nations of NATO to get so much more than the sum of the parts out of their combined effort.

“But it’s particularly the relevant nations in the operational area and their ability to work together which is an important consideration.”

The Rear Adm. underscored the importance of the only operational NATO command on U.S. soil. “The idea of integrating it with the second fleet headquarters under a dual-hatted command was a fantastic move because it emphasizes bluntly to Europe that the U.S. is fully committed to NATO. It’s not NATO and the U.S. The U.S. is part of NATO. And having an operational headquarters here in CONUS really emphasizes that point in both directions.”

He noted that there are 16 nations at the command currently with three more arriving in the next few months, namely, Portugal, the Netherlands, and Bulgaria. And reworking how to create the most effective defense is also a work in progress.

As Rear Adm. Betton put it: “One of the key efforts we are pursuing in this integrated command is not just stitching together NATO and U.S. assets, but it’s also stitching together teams within teams. It could be the U.S. cooperating with Norway, Sweden, and Finland, with Admiral Lewis commanding a multinational command.

“And a crisis might grow and evolve into something that the North Atlantic Council agree to respond to and therefore activate the JFC to command in a NATO sense. But because the Commander has that flexibility to go from a unilateral U.S. only under second fleet, through a growing coalition, there’s the opportunity to coordinate activity with a whole diverse range of entities before it becomes a formal NATO response.”

It is clear that agility and scalability are a key part of the way ahead for 21st century full-spectrum crisis management. And the JFC working in an integrated manner with C2F certainly is working such capabilities. This is a case of startup fleets working core capabilities which are clearly needed across the combat force....

[“It is Not My Father’s Second Fleet”: Excerpts from Chapter Eight of “A Maritime Kill Web Force in the Making” - Second Line of Defense \(sldinfo.com\)](#)

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Bert Lundy Expands His Tutoring System into a Book: “Learn for Excellence”

(The Webwire 14 July 22)

The author published a guide intended for parents, primarily in the US, who want to get the best possible education for their children.

“I can argue convincingly that my system does better than the overwhelming majority of schools, whether public or private.” Bert Lundy

“My goal is to make my tutoring system available to any parents wishing to get the best education possible for their children,” says Bert Lundy, a computer science professor, tutoring system developer, and author of the tutoring/education guidebook “Learn for Excellence: How to Prepare Your Children for College and Life” (Dorrance, 2021).

Professor Lundy has a B.A. in Mathematics, minoring in German and History, from Texas A&M, and a Ph.D. in Computer Science from Georgia Tech, in Atlanta. He has taught and spoken internationally from London to Japan and has extensive professional experience in computer science, software engineering, and networking. Through all his experiences, he developed his specialized tutoring system, which he named “Learn for Excellence” and later expanded into a namesake book.

“Learn for Excellence” consists of two parts. The first part explains how the tutoring system works, so that parents can help their children get an excellent education despite the state of the US education system. The second part is a compilation of related newsletters, which give additional insight into education and related areas.

“Learn for Excellence” is designed for parents who want to get the best possible education for their children. It is also designed for homeschooled parents, teachers, and educators at all levels who want to improve or gain a better understanding of education, particularly the grades 1-12. Professor Lundy aims to address the teaching and learning defects in the public school system through his book “Learn for Excellence”, offering parents an alternative – a tutoring system that is designed to give the best possible education in fields such as Math, English, Geography, History, Economics, Physical Fitness, and Health.

Professor Lundy hopes that his book (and tutoring system) will help student to excel not only in the academics but also in life. He believes that the purpose of education is more than just teaching Math, English, and other subjects but also teaching students to strive for excellence and encouraging them to become the best they can be. All students can excel in both academics and in life.

To all parents who want their children to get more from their education, order a copy of Bert Lundy’s “Learn for Excellence: How to Prepare Your Children for College” and Life today on Amazon and the author’s website at <https://www.bertlundybooks.com/>.

“Learn for Excellence” was last exhibited at the American Library Association (ALA) Annual Conference & Exhibition, held at the Walter E. Washington Convention Center, Washington, D.C.

At the Naval Postgraduate School, Prof. Lundy taught classes on computer networks, on the formal modeling and analysis of network protocols, on the history and business of telecommunications, and basic programming. He has given talks at AT&T (later Lucent) Bell Laboratories, and at numerous conferences.

[Bert Lundy Expands His Tutoring System into a Book: “Learn for Excellence” | WebWire](#)

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ALUMNI:

Lewisburg to Honor Distinguished Alumni

(Standard Journal 11 July 22)

A Naval aviator with more than 300 aircraft carrier landings, a Navy nurse who became a lawyer, a retired clinical neuropsychologist who once headed a department at the Cleveland Clinic, and a woman whose volunteerism never seems to end.



Those are just some of the talents of 2022's Lewisburg Area High School Distinguished Alumni, who will be honored in the fall during Alumni Weekend.

Harry B. "Blaine" Robins Jr., Class of 1956, is the Naval flyer; Margaret "Meg" Robins-Garrett, Class of 1968, is the nurse-lawyer; Richard Naugle, Class of 1972, is the retired clinical neuropsychologist; and Michelle Sholley, Class of 1986, is the ever-busy volunteer.

They were selected from a field of 27 candidates.

Harry B. Robins Jr.

Following graduation in 1956, Robins began his 32-year career in the Navy. As a Naval aviator, he logged more than 5,000 hours in various aircraft, which included more than 300 landings on aircraft carriers. He served on numerous ships, stations and staffs and was commanding officer of several.

Early in his career he obtained a B.S. in engineering science and an M.S. in fiscal resource management from the U.S. **Naval Postgraduate School** in Monterey, Calif. He was the recipient of numerous military awards. Following retirement, he entered the emergency services field, becoming an emergency management consultant, planner and coordinator for Monterey County, Calif.

For 14 years he was involved in many local disasters and emergencies and received the Monterey County Support Firefighter of the Year Award in 2002. He continues to serve on the Emergency Medical Care Committee. He remains active in the Boy Scouts of America. He and his wife Sally live in Monterey and have four children and seven grandchildren.

Robins said, "I place high value on education, professionalism, loyalty, character, teamwork and commitment... I regard myself as the product of a strong and viable community, a professional and nurturing school system, a compassionate church, and a loving and caring family, backed by supportive and exceptionally loyal friends."

Margaret Robins-Garrett

Robins-Garrett graduated from LAHS in 1968 "with the knowledge and skills to excel." She continued her education at Villanova University (BSN) then served as a U.S. Navy nurse during the Vietnam War (1971-1978). She earned her MEd in counseling and education from The Citadel and her law degree from the University of Maryland.

She began her nurse-attorney career at Johns Hopkins in May 1986, where she was responsible for nurse orientation, teaching nurses about the law, and introduced the 24/7 on-call legal hotline, which ensures that issues and events can be reported and addressed quickly. She has taught risk management and the law to physicians and nurses for more than 30 years. She played a pivotal role in the design, implementation, and oversight of all aspects of risk management across Johns Hopkins Health System. She developed an integrated approach to risk management and patient safety, has been involved with the Johns Hopkins Ethics Committee and has provided legal and ethical counseling during her tenure.

Always a teacher, she has helped to explain the intricacies of health care law to more than 200 law students, has been an active supporter and adviser to the Health Law Section at the University of Maryland Law School and is adjunct faculty at the Johns Hopkins University School of Nursing.

She is a founding member of the American Association of Nurse Attorneys and is a national and international speaker on risk management, nursing, patient safety and healthcare law issues. She serves on the adjunct faculty at Johns Hopkins School of Nursing, Villanova School of Nursing and the University of Maryland Law School. She is the mother of four and grandmother of eight and resides in Laurel, Md. She and honoree Harry Robins are cousins.

Richard Naugle

Naugle, a recently retired clinical neuropsychologist, received his bachelor's degree in honors psychology from Temple University in 1976, his master's degree in clinical psychology from the University of Dayton in 1979 and his Doctoral degree in Counseling Psychology from the University of Texas at Austin in 1985. He joined the staff at the Cleveland Clinic in 1987 and was promoted to the head of the Neuropsychology Section from 2001-2014 and 2018-2020. In that capacity, he recruited



neuropsychologists from around the country and helped to train over 30 residents. During his career he authored or co-authored more than 60 peer-reviewed manuscripts, 14 book chapters and a textbook.

As a volunteer member of the Shaker Heights Citizens' Police Academy, he cleaned weapons, helped direct traffic, patrolled with a partner in an unmarked police vehicle, helped provide holiday meals to the station and served as an actor in SWAT team drills. He is now actively involved with Habitat for Humanity of Yates County and has recently begun to work as a Disaster Action Team member for the Red Cross Chapter of Steuben, Yates and Schyuler counties of New York.

He and his wife, Connie, have three children and live in Dundee, N.Y.

Michelle Sholley

Sholley is no stranger to Lewisburg alums since she has served as a board member, officer and volunteer extraordinaire for the LAHS Alumni Association since 2018. She had served in leadership roles for Alumni Weekends since 2013. Sholley is a Customer Service team lead for Insomnia Cookies LLC and previously worked for Apple Vacations LLC, where she received top sales and employee of the month awards as well as the Visions of Excellence Award in 2010.

Where Sholley truly shines is in her volunteer service to her community. For the past 19 years she has served as a member of the site kitchen crew at the Falcon Ridge Folk Festival and for nine years as a volunteer for the Children's Craft and Activity Barn at the Central Pa. Vintage Iron Club Fall Festival and as committee member, as chairperson for the Sharing Our Tables Community Meal Ministry for the Saint Paul's United Church of Christ and Bethany United Methodist Church, where they serve up to 220 people twice a month and as a volunteer at the Community Thanksgiving Dinner hosted by the First Presbyterian Church in Milton.

Since June 2020 she served as food pantry distribution volunteer at Saint Paul's United Church of Christ in Milton and personally delivers food boxes to neighbors who lack transportation. For eight years (2013-2021) she served the Bethany United Methodist Church in Milton in various leadership roles, including Children's/Adult Sunday School teacher; Pastor/Staff Parish Relations committee member; Contemporary Worship Team Member, and led the "Share the Warmth" annual coat giveaway.

[Lewisburg to honor distinguished alumni || standard-journal.com](https://www.standard-journal.com/news/local/lewisburg-to-honor-distinguished-alumni/)

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A Matter of National Security

(UT News 12 July 22) ... Ayrel Seale

For a time in which America is not directly involved in a war, American national security professionals sure are busy. And a sizable number of them are alumni of UT's Clements Center for National Security.

In Poland, a U.S. Air Force intelligence officer briefs F-15 Eagle pilots in the Grim Reapers squadron every day on the latest intelligence on Russian air force missions over Ukraine, Belarus and Poland. At NATO headquarters in Brussels, a U.S. Army colonel serving as senior adviser to NATO's supreme allied commander in Europe coordinates the next phase of the alliance's deterrence mission, including deploying more NATO forces to Poland, Estonia and Romania to bolster humanitarian relief and weapons-resupply lines and to block any further Russian invasions.

Meanwhile, a U.S. intelligence officer at a joint intelligence center in the United Kingdom collects signals, imagery and human intelligence on Russian troop movements and feeds that information to both Ukrainian forces and senior analysts at the Defense Intelligence Agency in Washington. There, a Ukrainian-speaking Texas Ex assesses the reports and prepares them for briefings to military leaders and the secretary of defense.

Though most of these alumni cannot be named for security reasons, Clements Center Executive Director Will Inboden knows them well, and they keep him and his staff up on their whereabouts.



“This is a story about UT and America,” says Inboden, “and the top line is this: In the last nine years, this university has produced a tremendous wave of young graduates — undergrads, masters, Ph.D.s and law students — who are now serving around the world in vitally important national security positions.” They range from uniformed military to CIA officers, State Department diplomats to National Security Council professionals, congressional staff members to think-tank analysts.

THIS IS A STORY ABOUT UT AND AMERICA.

Founded in 2013, the Clements Center for National Security reports directly to UT’s president. In less than a decade, it has built a network of more than 600 alumni, many holding influential positions with the National Security Council, CIA, State Department, Defense Department, Congress and leading think-tanks. “You show me a trouble spot in the world, and I’ll show you a Clements Center alum who’s working on it,” says Inboden. Off the top of his head, he rattles off an impressive list:

- In the western Pacific, aboard the nuclear-powered aircraft carrier USS Abraham Lincoln, an F/A-18 Super Hornet Navy pilot prepares for his catapult launch after another Navy intelligence officer has briefed him on where he can expect to encounter China’s air defense systems as the Navy fliers conduct a freedom of navigation mission.
- A CIA officer who is posted in Asia coordinates with her host country counterparts to share intelligence on the threat from China.
- A diplomat at the U.S. Embassy in Islamabad, Pakistan, coordinates with CIA officers, the U.S. ambassador and Pakistani officials on the next phase of America’s counterterrorism strategy in the region after the U.S. exit from Afghanistan.
- A U.S. Army Green Beret officer deployed in Africa partners with local forces in counterterrorism operations against jihadist groups.

And, of course, Washington is thick with Clements Center alumni.

- In the Pentagon, a senior Army strategist is working for the secretary of defense to bolster the Army’s presence in Europe and to equip the Army with the right weapons, force posture and doctrine to deter Russia across NATO’s frontline.
- On Capitol Hill, a Senate staffer prepares the necessary legal authorizations to provide real-time, lethal intelligence targeting to the Ukrainian forces, while a Senate Foreign Relations Committee staff member prepares emergency legislation providing humanitarian, financial and military aid to the Ukrainian people and military.
- At the National Security Council, one staff member drafts a strategy to identify the primary threats to America, set policy priorities, and allocate resources for countering Russian and Chinese aggression, while another develops a specialized China strategy.

Not only are they serving their country in those trouble spots, such as Eastern Europe, China and Pakistan, they form a de facto young Longhorn alumni network. “They’re staying deeply connected with each other. They’re encouraging each other, helping each other with their careers,” says Inboden. And even if they haven’t kept in touch, they will show up to the same secure facility in far-flung locations and recognize one another from UT. “I think it’s tremendously inspiring,” he says. “It’s also a real encouragement to our current students.”

Other alumni are serving as faculty members teaching diplomatic and military history and security studies across the country, including at the Naval War College and the **Naval Postgraduate School**, the Air War College, West Point and civilian universities such as Duke, Notre Dame, Ohio State and Williams College.

In all, the center’s staff estimates that more than 150 recent alumni hold federal positions. The lion’s share is in the executive branch, with many of those in the intelligence community and at the State Department. But as noted above with the congressional aide, they also serve in the legislative branch, and, because Clements often partners with UT’s Strauss Center for International Security and Law, it claims



several alumni in the legal realm as well. “Through our alumni,” Inboden says, “you can see the sinuous connectivity across the whole of the national security system.” Still others work on security issues in state government, such as with the Texas Department of Public Safety.

Outside of government, other alumni serve in think tanks and work for closely connected federal contractors.

Program coordinator Amber Howard works to bring young alumni back to speak, do mentoring sessions or give advice on internships and jobs. “I so rarely have an alum who has said they don’t have time. They always have time. They think, ‘Oh yeah, the Clements Center. The kids we’re going to get are coming from this.’ ”

A Center of Concentric Circles

The Clements Center is an unusual animal in academia. Very few other universities have similar centers focused on applying the lessons of history to current national security challenges and training undergraduate and graduate students to be the next generation of national security leaders. “Student involvement is best pictured as concentric circles,” Inboden says. There’s a core group of 80-100 students with whom the center interacts almost every week, and many of those are majoring in international relations. Chief among those are 30 to 35 undergraduate fellows. Each year, around 80 applicants compete for 20 new positions; the rest are fifth-year seniors serving a second year.

The next circle out, perhaps an additional 200, would be students who come to a guest lecture a couple of times a month, attend informal policy discussions, or take classes sponsored by the center. Furthest out would be the roughly 1,000 students who interact with the center once or twice a year through events such as major conferences or the annual National Security Career Fair held on campus.

The center offers a certificate in security studies for undergraduates, which about 150 students are pursuing at any time. Each year, Clements sponsors an introductory undergraduate class informally called “Intelligence 101” taught by Paul Pope, a former CIA case officer who along with fellow CIA veteran Steve Slick runs the Clements-Strauss Intelligence Studies Project. That course has about 80 students, and each year a number of them get jobs in the intelligence community.

Paul Edgar, Associate Director

On the graduate side, the center has about 50 master’s students in a portfolio in security studies and a graduate fellows program consisting of about 25 Ph.D. students a year.

Reporting directly to the UT President’s Office has made it easier to work across the campus, collaborating with faculty and students in the LBJ School of Public Affairs, Liberal Arts, Law, Engineering and elsewhere. With the McCombs School of Business, the center just established a new minor in business and national security.

“The Clements Center has become a physical intersection and an intellectual intersection at every level,” says Associate Director Paul Edgar. “It’s become almost a cyclone or funnel bringing in good people that otherwise would not be together.”

The Clements Center also works with many active-duty military students and student veterans.

It Can All Start With Coffee

On a Friday at 1 p.m., 40 students pack into a conference room in the Flawn Academic Center, just down the hall from the Clements Center offices. They sit at tables arranged in a hollow square, and with every chair taken and another 10 students standing along the walls, the group cuts up with inside jokes about OSINT versus HUMINT. (That’s spy jargon for open-source intelligence versus human intelligence.) At a side table, late arrivals quietly get coffee and look over the free snacks.

Program fellows, selected each year from among the seniors, are introducing the topic of the hour, while Amber Howard hurries around the room verifying bingo cards and handing out Clements Center swag as awards. Bingo card squares include: “Hussein makes a pun,” “Paul Edgar laughs,” “Someone compares Ukraine to Taiwan,” “Clements’ staff brings in extra chairs from office,” “This is not my area of expertise” and “Soren brings a yummy salad.”

“My most direct exposure to a liberal arts approach in action was when I participated in a series of discussions called ‘Coffee Hours’ hosted by the University of Texas’ Clements Center for National



Security. On alternating weeks, a student would moderate a discussion on a strategic issue open to all students on campus, regardless of their field of study. Because these discussions were open to students of all backgrounds, they always granted a multidisciplinary view on a given national security issue. Philosophy or engineering students with little background in international relations coursework often had immensely valuable insights on everything from competition with China to the ethics of drone warfare. They also helped students formulate their thoughts, articulate them, and answer rebuttal questions on the fly. These discussions generated many questions but few definite answers, leading participants to appreciate the nuances of these ‘bigger picture’ issues.”

This day, the conference room brims with international relations majors, Arabic majors, history majors and engineering majors, and they are debating the benefits and the pitfalls of scraping Twitter accounts to discern when the Russian invasion of Ukraine would begin.

Soren (of yummy salad bingo fame above) is senior Soren Ettinger DeCou, a Plan II major and Forty Acres Scholar who is a biomedical engineering major but can’t get enough of the Clements Center. “These programs take up the majority of my time because I love this organization so much,” she says. She feels not enough policymakers have a scientific background and hopes eventually to work at the federal level translating technological information for nontechnical audiences.

Ettinger DeCou says Associate Director Paul Edgar has been the most important person in her UT education, and she paints a telling portrait of the close ties that form here. “His mentorship over the last four years has been absolutely invaluable. He combines practical foreign policymaking experience with creativity. He was a lieutenant colonel in the Army, and he combines that with an ability to have really deep, nuanced discussions about anything,” she says. “We’ve spent hours talking about life and futures.”

Ettinger DeCou did a virtual internship for the US Embassy in Beijing during which she produced a short video in English and Mandarin describing to a Chinese audience her excitement over voting for the first time.

Fellows pick the topics several weeks ahead. “They don’t need to be experts in the area; it’s just something they’re interested in that’s going on in the world around them that they want to pick the brains of their peers about,” Howard says. “North Korea’s nuclear program, Iran deterrence, Russia, cryptocurrency — anything they find fascinating.” Howard then works with them to select policy articles to present to the students.

Because Coffee Hour sessions are open to everyone on campus, they create plenty of opportunities for students to practice moderating lively discussions, a skill that will serve them well as national security professionals. “How do you manage a conversation? How do you manage someone who is over talking their time?” asks Howard. “When someone disagrees with you? When someone interrupts you? How to disagree appropriately and how to get back into a disagreement in a healthy way? We’ve lost a lot of that obviously recently in America. How do you engage with someone who is not on your side of the table? They really do a fabulous job.”

Perhaps the most telling detail of Coffee Hours, though, is that all this effort is expended and excitement generated over something for which students get no academic credit.

Alexandra Foggett helps manage the operations of Clements Center’s programs including the Undergraduate Fellows Program and Coffee Hour, a Maymester in London and a two-week trip to Israel and the Palestinian territories. “Most importantly, our team provides a system of support to help students narrow down their interests, navigate transitions post-graduation and cultivate a strong sense of community both at UT and within our thriving alumni community now pursuing foreign policy careers across the globe.”

She adds, “There are many fantastic centers and programs at universities across the country, but I do believe the Clements Center is unique in many ways. A student once told me that Clements was able to provide a private, liberal arts-like sense of community within a large public university, and this I believe is quite rare.”

[A Matter of National Security - UT News \(utexas.edu\)](#)

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Q&A: Rear Admiral Ronald J. Piret, Commander, Naval Meteorology and Oceanography Command

(Sea Power Magazine 14 July 22) ... Richard R. Burgess

Upon commissioning, Piret served in various operational positions, most notably aboard the Royal Navy's HMS Herald as the Operations Officer, and the USS Abraham Lincoln (CVN 72), where he served as the Meteorologist and Oceanographer during a deployment in the Western Pacific.

Ashore, he served as forecast duty officer at Naval European Meteorology and Oceanography Center, Rota, Spain; tactical hydrographic and meteorological officer at the Royal Navy School of Maritime Operations, HMS Dryad, Southwick, England; associate chairman of the Oceanography Department at the U.S. Naval Academy; deputy director of Operations for Expeditionary Warfare, Naval Oceanography Operations Command; executive officer, Naval Oceanography Operations Command; deputy assistant chief of staff for Requirements, Programs and Assessments, Commander, Naval Meteorology and Oceanography Command; Arctic affairs officer for the Oceanographer of the Navy onboard the Chief of Naval Operations Staff; fellow to the Naval Command College Class of 2017, Naval War College's Senior Officer International Program; executive officer, Naval Oceanographic Office; and chief of staff, Naval Meteorology and Oceanography Command.

Piret commanded the Provincial Reconstruction Team Uruzgan in southern Afghanistan working alongside multinational and interagency partners in support of Operation Enduring Freedom. Additionally, Piret commanded the Naval Oceanographic Office at Stennis Space Center, Mississippi overseeing the operation of the Navy's six T-AGS survey vessels.

Piret assumed command of Naval Meteorology and Oceanography Command and simultaneously became the Oceanographer of the Navy, Navigator of the Navy, and Hydrographer of the Navy in July of 2021.

Piret discussed the missions of Naval Meteorology and Oceanography Command with Senior Editor Richard R. Burgess. Excerpts follow.

With the change in fighting land wars in Southwest Asia to the competition with Russia and China, how does that shift affect focus of the Naval Meteorology and Oceanography Command?

PIRET: Naval Oceanography operates simultaneously at the strategic, operational and tactical levels of warfare in every theater around the globe. We pride ourselves in our ability to characterize the battle space and then predict changes in the environment over time. As part of information warfare, we can analyze where the potential hot spots will occur and position assets accordingly. Certainly, wherever the fleet goes, we go. But often have already been there. In terms of fleet operations, whether it be in the Western Pacific or in the North Atlantic, we're an integral part of every warfighting kill chain, whether it is the submarine force, the surface force, special warfare forces or the aviation force.

With current events, we do see some uptick in requests for operational support, and we are making sure that those carrier strike groups or those combatant commanders have the best understanding of the battlespace's environmental conditions so they can best posture or employ their assigned forces.

Are the Distributed Maritime Operations and Expeditionary Advanced Base Operations concepts changing the focus and missions of Commander, Naval Meteorology and Oceanography Command?

PIRET: We've been thinking about Distributed Maritime Operations for a while now and adjusting our own alignment to better deliver meteorological and oceanographic effects to the fleet. We recently invested in and realigned some of our Sailors to stand up two commands, Strike Group Oceanography Team Norfolk and San Diego. Those commands deploy Sailors ready to meet DMO requirements.

With this realignment, Naval Oceanography is well positioned for distributed naval operations. Our teams of Sailors complete workups with carrier strike groups and amphibious ready groups, and they deploy with those forces. At the same time, we embed Mobile Environmental Teams on independent



deployers to deliver specialized environmental information. Whether full SGOT teams onboard aircraft carriers or small teams onboard independent deployers, our Sailors serve as the onboard subject matter experts who work within the planning process and leverage our reach-back capability and the deep knowledge base we have at the Naval Oceanography Operations Command (Anti-Submarine Warfare Reach-back Cell and the Electromagnetic Maneuver Warfare Reach-back Cell). Naval Oceanography's Reach-back Cells enable the deployed teams to bring full weight at what naval oceanography to the fight.

CNMOC supports groups such as explosive ordnance disposal (EOD), mine countermeasures and special operations forces. What kind of support do you provide them?

PIRET: When it comes to the expeditionary warfare — whether that be mine-countermeasures, EOD or special operations — we're really talking about assured access and ability to maneuver ingress and egress. We have a deep understanding of the nature of those missions, and our Sailors and Officers are well-trained and deliver critical information to assure success. It's really important to those forces to understand the conditions in which they're operating. They also need to understand what changes will occur during their mission and how to egress safely.

We have a wide variety of deployable Sailors who work alongside the special warfare, EOD and the mine-countermeasures groups. We have Sailors who are specifically trained in those missions and have a deep understanding of those mission requirements. We also have reach-back capability with our team in the Warfighting Support Center at Stennis Space Center where remote-sensing capabilities are leveraged with other partners within the information warfare community to highlight and mitigate challenges in various areas of operation.

It's not well known that we have the only operational geology lab in the Navy. We're experts in analyzing bottom sediment and how that sediment moves, which is critically important when it comes to understanding how a mine on the seafloor would be best detected if it's been buried.

Additionally, our Sailors are trained in the operational employment and piloting of unmanned underwater vehicles with side-scan sonar onboard, and able to map the ocean floor or in harbors as well and identify objects. Our Sailors can also access a robust historical database, and utilizing change detection algorithms, they can direct EOD units to areas where new objects can be investigated, and if needed, neutralized.

The change in the Arctic with the ice melting and the interest by the Navy in doing more operations up there, is that changing your tasking a lot, or is it something you pretty much always done?

PIRET: As an Arctic Nation, the Navy has maintained a consistent presence in this challenging battlespace. Our presence and capability are regularly demonstrated at the bi-annual exercise, run by the Arctic Submarine Laboratory called Ice Exercise, or ICEX. We completed the most recent ICEX in March 2022.

Often with change, comes new opportunity and risk. The Arctic is no different. As ice in the high latitudes recede, opportunities to access natural resources, fisheries and more expeditious trade routes are starting to become the new normal. Part of the Navy's mission is to maintain freedom of the seas, which includes the Arctic.

At the forefront of monitoring and tracking worldwide ice conditions is the National and Naval Ice Center [USNIC]. In partnership with NOAA [the National Oceanic and Atmospheric Administration] and the National Weather Service, specifically the Ice Services Branch of the Ocean Prediction Center, USNIC observes, analyzes and forecasts ice for the better part of the last 65 years. This highly skilled team provides commanders the information they require to successfully operate in the harshest environment on Earth.

With eight Arctic nations in the world and a global economy, maintaining a peaceful and free Arctic that conforms to international rules-based order is not possible without our domestic and international partnerships. Internally, we partner with the US Coast Guard, NOAA/NWS operating in the Arctic in order to better understand this environment. Internationally, we have strong partnerships with the



Canadian Ice Service, Danish Meteorological Institute, Sweden, Norway, Finland, Denmark, Canada, and New Zealand and others through organizations such as the North American Ice Service, the International Ice Charting Working Group and the International Cooperative Engagement Program for Polar Research. These organizations, amongst others, are key to setting and maintaining international standards, collaborating to best understand this complex and rapidly changing environment, and creating the most effective conditions for mariners to safely operate.

CNMOC is one of the largest operators of unmanned undersea and unmanned surface vehicles in the world. How many of those vehicles do you operate and what do you do with them?

PIRET: Naval Oceanography maintains and operates an inventory of nearly 200 unmanned underwater vehicles. These unmanned vehicles range from deep sea 6,000-meter vehicles to ocean gliders that collect data within the water column to remotely operated surface vessels, but they all aid in enhancing safety of navigation for our fleet.

Our team has developed deep expertise in unmanned operations over the last two decades. We've been using unmanned systems not only to sense the ocean and collect data, such as conductivity, temperature, and depth — which we can then turn into sound propagation models in the ocean — to surveying the ocean floor collecting boundary conditions, not only for navigation purposes, but also to use in modeling ocean dynamics for safe fleet operations. And then, of course, we have some experience in unmanned aerial vehicles as well, but not to the extent we have in unmanned surface and underwater vehicles. The Fleet Survey Team uses some unmanned surface vehicles to then chart harbors and bays in shallow water.

Many of the UUV systems we actually command and control from our Glider Operations Center headquartered at the Naval Oceanographic Office at Stennis Space Center. One of the lessons we have learned over time, of course, is with unmanned vehicles, you really need to understand the environment to operate them successfully. That is something that we've been able to help the broader Navy implement in their operations as well.

You're adding another Pathfinder-class T-AGS oceanographic survey ship to the fleet. Some of those are around 20 years old. Do you see any need to recapitalize the T-AGS fleet in the foreseeable future?

PIRET: Certainly, the Chief of Naval Operations has highlighted the requirement for T-AGS vessels in his testimony. We are looking at what does the next class of survey vessels need to meet current and future fleet requirements.

Our current Pathfinder-class vessels remain world-class military survey ships. We have reinvested in them throughout their service lives. They have state-of-the-art survey equipment ranging from deep-water multi-beams to sub-bottom profilers and moving vessel profilers, so they can do a broad range work. But we are looking at, what does the next class of ship need to address to encompass, to be more versatile and better integrate unmanned systems into those vessels?

One of the requirements that we're looking at in the next class is optionally manned hydrographic survey launches. We need the ability to operate fully manned hydrographic survey launches deployed from a T-AGS vessel and then shift to remotely operated survey launches capable of full spectrum surveys from deep-water to littoral.

Through experience, we've also refined our ability smoothly shift from a deep-water bathymetry mission to operating unmanned underwater vehicles in ports in a relatively quick fashion as well.

The latest Pathfinder T-AGS, USNS Maury, and the next one being built have moon pools for UUV operations. Is that working out well?

PIRET: Yes. We've learned a lot of lessons with the development of the Maury and we're continuing to improve on that design. With the new T-AGS 67, we're looking at what that deployment system needs



to achieve, as some UUVs have gotten a little bigger and we've increased their mission time and been able to integrate more types of sensors. That seems to be ever evolving but there's a lot of potential there.

How does CNMOC and NOAA divide up oceanographic work between the two organizations?

PIRET: NOAA is charged with the hydrographic surveys for the nation in U.S. territorial waters. The Navy is charged with the military surveys and produce charts in partnership with the National Geospatial-Intelligence Agency in satisfying the Defense Department's global safety-of-navigation requirement. Those are the different roles and responsibilities between NOAA and the Navy, but we really do have a tight working relationship in terms of the survey standards, so when it's appropriate, data as well as improvements in technology can be shared. Also, we cooperate in the international venues and we're part of a number of commissions to help build capacity with partners across the globe.

But that's not where our partnership with NOAA ends. We've actually had a longstanding partnership in terms of data exchanges that extends to our work in atmospheric modeling as well as unmanned systems. Over the past several years, we've actually been collaborating in the deployment of gliders to measure heat content in the ocean and do a better job in modeling hurricane intensification along the U.S. East Coast as well as the Gulf Coast. That's really been a fantastic relationship.

CNMOC and your warfare specialty have been part of the information warfare community more than a decade now. Has that integration gone well, and do you see it having a multiplying effect on the service you give to the fleet?

PIRET: Integrating the information warfare skills sets has improved the lethality of the fleet. Frankly, with better understanding the battlespace, we reduce uncertainty and enhance the fleet's ability to maneuver effectively in the physical environment. And so, we're really increasing the effectiveness of those independent Information Warfare capabilities by bringing them together to more accurately and completely define the state of the battlespace and predict how it will evolve over time. This predictive capability improves weapons system employment our can better assess an adversary's weapons systems ability to effectively operate below, on, and above the sea. This is where information warfare can increase our fleets' lethality.

Integrating information warfare teams further left in the Navy kill chains, we effectively reduce uncertainty in the combatant commanders' decision space regarding when, where and how they may most effectively employ forces.

Rear Adm. Ronald J. Piret is a native of Chico, California, and graduated in 1993 from the U.S. Naval Academy with a Bachelor of Science in Physical Oceanography. He holds master's degrees in oceanography and meteorology from the **Naval Postgraduate School** and national security and strategic studies from the Naval War College, where he graduated with distinction.

[Q&A: Rear Admiral Ronald J. Piret, Commander, Naval Meteorology and Oceanography Command - Seapower \(seapowermagazine.org\)](#)

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FEMA Selects MDEM Deputy ExDir for Inaugural Exchange Program

(Conduit Street 14 July 22) ... Kevin Kinnally

Maryland Department of Emergency Management (MDEM) Deputy Executive Director Chas Eby will be one of the first participants in the new Federal Emergency Management Agency (FEMA) Exchange Program. Eby will work with FEMA leadership in Washington, DC, through the end of the year to implement programs to deliver disaster recovery assistance to survivors and communities.



“I am honored to represent my home state in this new initiative to strengthen the field of emergency management,” said Eby. “This is an opportunity to join best practices developed in Maryland with innovative programs FEMA is advancing.”

Eby is one of four individuals selected nationwide for the first cohort of this program. According to FEMA, the exchange program will provide an avenue to strengthen FEMA’s partnerships with state, territory, tribal, and local emergency managers to increase community resilience against disasters.

According to MDEM:

This is a great opportunity for Chas and Maryland,” said Secretary of Emergency Management Russ Strickland. “He will bring excellent knowledge of state emergency management operations along with his exceptional collaboration skills to the program. Our department is proud of his selection and proud to be a national leader in our field .”

Eby has worked at the Department of Emergency Management for eight years, overseeing all programs, administration, and emergency operations in his current role. He holds a Master of Arts degree in Security Studies from the **Naval Postgraduate School**. Eby has completed the FEMA National Emergency Management Executive Academy and a fellowship with the Johns Hopkins University Center for Health Security. He is from and resides in the City of Baltimore.

While a disaster always begins and ends at the local level, a strong partnership among federal, state, and local governments is vital to emergency preparedness and community resilience. At the 2022 MACo Summer Conference, an expert panel will share best practices for aligning key roles and responsibilities when disasters strike and highlight new ideas and policies to help counties streamline community resources in times of crisis.

The 2022 MACo Summer Conference will take place at the Roland Powell Convention Center in Ocean City, MD, from August 17-22. This year’s theme is “Taking Care of Business.”

[FEMA Selects MDEM Deputy ExDir for Inaugural Exchange Program – Conduit Street \(mdcounties.org\)](https://www.mdcounties.org/newsroom/fema-selects-mdem-deputy-exdir-for-inaugural-exchange-program-conduit-street)

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