

NSWC CARDEROCK DIVISION



NSWC PANAMA CITY DIVISION



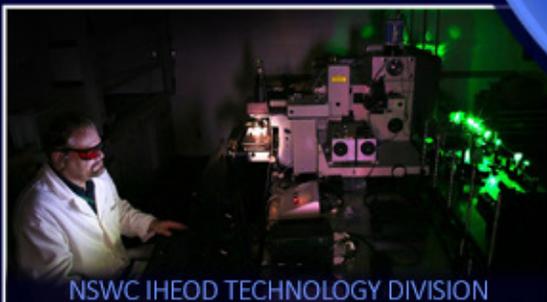
NSWC PORT HUENEME DIVISION



NUWC KEYPORT DIVISION



NSWC PHILADELPHIA DIVISION



NSWC IHEOD TECHNOLOGY DIVISION



NSWC DAHLGREN DIVISION



NSWC CORONA DIVISION



NSWC CRANE DIVISION



NUWC NEWPORT DIVISION

Welcome

Soundings is a digital news portal and periodic publication focused on communicating major initiatives and milestones across the NAVSEA Warfare Centers. This special edition of Soundings is Distribution Statement A, approved for public release. Distribution is unlimited. For questions or submissions, please contact Dr. David Sanders at Naval Undersea Warfare Center (NUWC) Headquarters (david.sanders2@navy.mil) or Christopher Lawson at Naval Surface Warfare Center (NSWC) Headquarters (christopher.lawson1@navy.mil).

Who We Are

The NAVSEA Warfare Centers, comprised of 10 NSWC and NUWC Divisions, represent ~30% of the Navy's engineering and scientific expertise. NSWC is comprised of eight echelon 4 Divisions: Carderock, Corona, Crane, Dahlgren, Indian Head EOD Technology, Panama City, Philadelphia, and Port Hueneme, as well as two echelon 5 commands, NSWC Dahlgren Division Dam Neck Activity, and Expeditionary Exploitation Unit ONE (EXU-1), part of Indian Head. NUWC is comprised of two echelon 4 Divisions, Newport and Keyport, as well as one echelon 5 command, Naval Sea Logistics Center (NSLC), part of Keyport. With more than 150 years of history, the NAVSEA Warfare Centers provide "full spectrum" technical advice and solutions to our partners in support of naval platforms and systems.

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NAVSEA Warfare Centers

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About this special edition

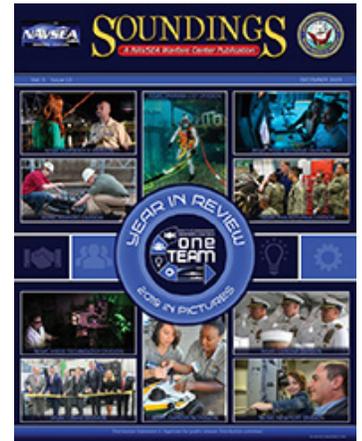
December traditionally is a time to reflect on the year that was, and look forward to the new year to come.

In this annual issue, the 10 Warfare Center Divisions are doing the former, showcasing their Top 3 images from 2019. But, as you'll see as you flip through these pages, they also are shining a light on the future – projects and programs that are developing the workforce and the technology that will support the Navy for years to come.

Look for more publicly released issues of Soundings in 2020, including the second annual special Warfare Centers Technology Super Heroes edition. In the meantime, we hope you enjoy this retrospective, and have a happy and safe holiday season.

On the Cover:

Images from 2019 from all 10 Divisions surround the Warfare Centers' One Team logo. The photos, which also appear inside, are U.S. Navy/Released unless otherwise noted. **Year in Review, Pages 3-12**



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Jared Soltis, left, and Owen McGarity, engineers in the Sea-Based Aviation and Aeronautics Branch at NSWC Carderock Division, pilot unmanned aerial systems (UAS) at the beach on Camp Lejeune, North Carolina, during Advanced Naval Technology Exercise (ANTX) East in July. As part of the Red Team, McGarity and Soltis acted as the adversary for counter-UAS technologies that were being demonstrated. (U.S. Marine Corps photo/Released)



Capt. Cedric McNeal, Commanding Officer, NSWC Carderock Division, is interviewed by CW Network's Jennifer Marshall in June about the kinds of research work Carderock does for the Navy. The CW Network was on base to gather interviews and video for a new series called "Mysteries Decoded," specifically about the disappearance of USS Cyclops (AC 4) in March 1918 from the area of the Bermuda Triangle. The episode aired on Sept. 17 and can be seen on the CW Seed App.

Cmdr. Bradley Hickey, right, head of the Medical Department at Navy Experimental Dive Unit, talks with Rear Adm. Eric Ver Hage, Commander, NAVSEA Warfare Centers, and Capt. Cedric McNeal, Commanding Officer, NSWC Carderock Division, about how his team keeps contestants safe during the 15th International Human-Powered Submarine Races held in June at NSWC Carderock Division.

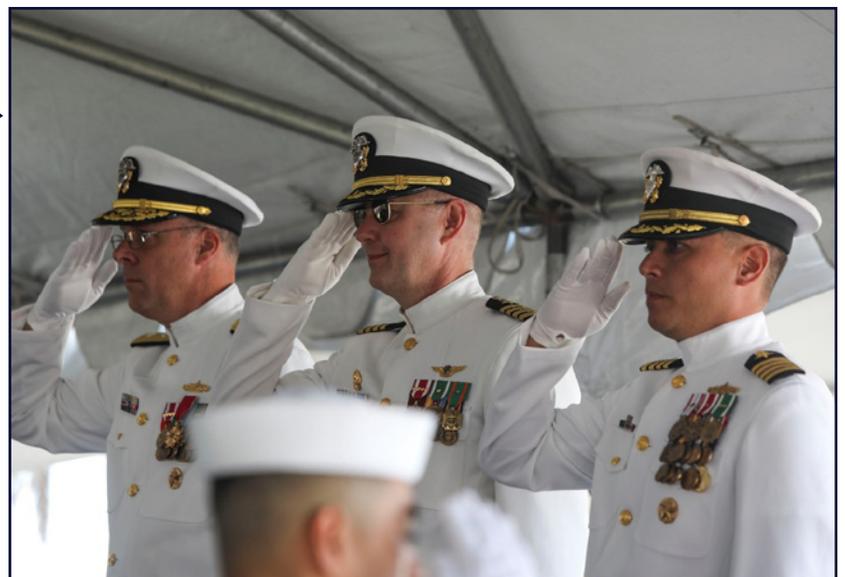


Adm. John Richardson, former Chief of Naval Operations (CNO), visited NSWC Corona Division in February to see first-hand how the command gauges the readiness and warfighting capability of the Navy, and how its growing data analytics capability is helping chart the Navy's future. "What they have going on here at Naval Surface Warfare Center Corona is indicative of our future in many ways," said Richardson, the first CNO to visit Corona. "We're going to require these types of approaches to make our Navy more ready, more powerful in the future."



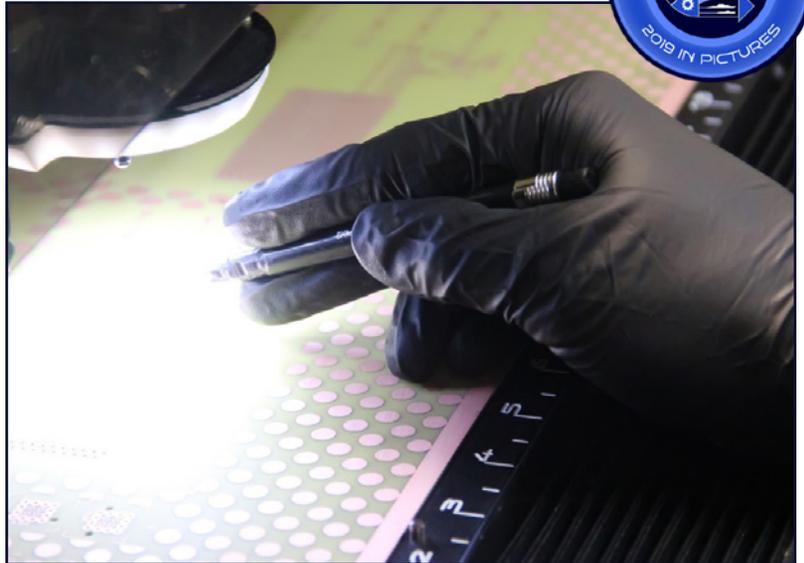
In a first for NSWC Corona Division, two employees, Elvis Acosta, Performance Assessment Department Head, and Sarah Reyes, Quality Engineer, were recognized for their outstanding contributions to the future of technology and the workforce by Great Minds in STEM (GMIS) during the 31st Hispanic Engineer National Achievement Awards Conference (HENAAC) conference in Lake Buena Vista, Florida, in September. Acosta, shown with Dianne Costlow, SES, NSWC Corona Division's Technical Director, received a 2019 STEM Hero Award. Reyes was named a Most Promising Engineer-Bachelor.

In a traditional Navy change-of-command ceremony on Sept. 6, Capt. Khary W. Hembree-Bey, right, assumed command of NSWC Corona Division from Capt. Richard A. Braunbeck III, center. Rear Adm. Eric Ver Hage, Commander, NAVSEA Warfare Centers, left, presided over the ceremony. "I am honored and humbled," Hembree-Bey said. "Honored to once again be entrusted by our nation and Navy with the sacred duty of command. There is no greater responsibility that can be bestowed on an officer. And I am humbled at the opportunity to work on the forefront of the Navy's premier independent analysis and assessment agent."





NSWC Crane Division's Printed Circuit Board Lab is one of two of its kind remaining in the Department of Defense (DoD). Its decades of experience, state-of-the-art equipment, and constant focus on innovation make it an incomparable resource. The Printed Circuit Board Lab continues to change the game by being the only lab in the DoD that can completely regulate the entire process, allowing a trusted product to be delivered.



NSWC Crane Division hosted Ken Watson, Deputy Assistant Secretary of Defense for Materiel Readiness, on May 30. Watson, center, served as keynote speaker during the ribbon-cutting ceremony for the command's EA-18G Growler Tactical Aircraft Airborne Electronic Attack (AEA), Fleet Support Team's (FST) Intermittent Fault Detection and Isolation Systems (IFDIS) integration efforts.

NSWC Crane Division launched its first summer internship program with the United States Naval Academy (USNA). Five USNA midshipmen were accepted to participate in internships supporting the fleet in strategic missions. Three of the midshipmen, studying science, technology, engineering and math (STEM), completed their final projects and presented to NSWC Crane Division subject matter experts and leadership.



Capt. (sel) Stephen “Casey” Plew, right, Commanding Officer of NSWC Dahlgren Division, shakes hands with Rear. Adm. Eric Ver Hage, Commander of the NAVSEA Warfare Centers, moments after formally assuming command during a change-of-command ceremony in April, as Capt. Godfrey “Gus” Weekes, outgoing commanding officer, looks on. Plew was promoted to the rank of captain during a ceremony in August.



Military, government and contractor personnel are pictured in front of the U.S. Navy 16-inch battleship gun on display at the parade field at NSWC Dahlgren Division. The photograph – entitled “100 Years of NSWCCDD Accomplishments” – took place during a command picnic in October that included lunch, music and sporting events. It was the first command picnic in some time. “Thank you for everything you’ve done, and I look forward to 365 days from now when we do this again,” Commanding Officer Capt. Casey Plew said in his welcoming remarks. “Another great year of awesomeness.”

Emily Rabin, left, and Dominique James prepare to demonstrate PERSEUS, the most recent effort in a line of projects solving the integration of high-powered electric weapon systems and electric propulsion systems aboard U.S. Navy ships. They were among a seven-member team of Sly Fox Mission 26 junior scientists and engineers who briefed military, government civilians and defense contractors five times over the course of two days in September on their development of PERSEUS. Since 2002, the Sly Fox Program has been providing opportunities for young professionals to experience solving real-world technical issues while designing and integrating complex hardware and software technologies.



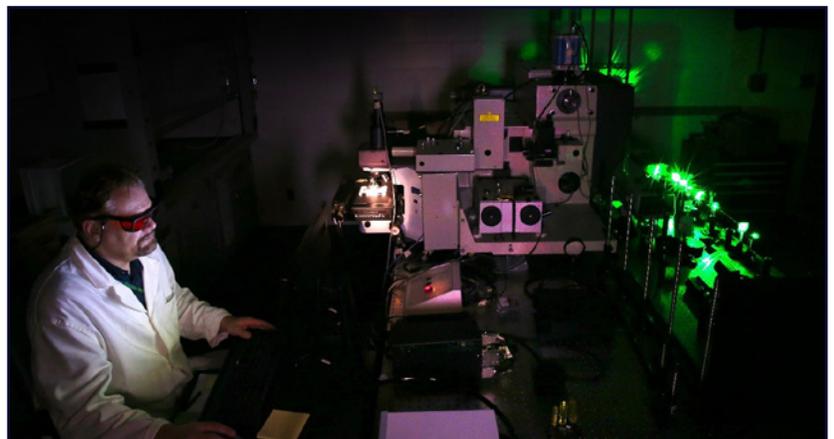


Operators in the Energetics Manufacturing Department's Explosives & Energetics Division at NSWC Indian Head EOD Technology Division screen energetic material using the 420 Gallon Mixer in April.



NSWC Indian Head EOD Technology Division Deputy Technical Director Amy O'Donnell greets students in the 2019 Science and Engineering Apprenticeship Program (SEAP) during an EOD Family Day event in June.

NSWC Indian Head EOD Technology Division shock physicist Zbigniew Dreger of the Research and Technology Division uses laser shock to understand dynamic compression behavior of energetic materials.



Chris Stone, an engineering technician at Puget Sound Naval Shipyard and Intermediate Maintenance Facility (PSNS & IMF), and Tyler Paine, an engineer at NUWC Keyport Division, prepare a prototype hull-climber robot they designed for its first practical test, on attack submarine USS Connecticut (SSN 22), in dry dock at PSNS & IMF in April for a maintenance availability. The hull climber robot is the result of a partnership between PSNS & IMF and NUWC Keyport Division to design a system able to provide a faster, safer and more cost-effective method of completing required hull inspections on U.S. Navy submarines.



NUWC Keyport Division celebrated Heritage, Health and Hobbies (H3) Day on July 17. H3 Day is a popular community-building event that allows the diverse workforce at NUWC Keyport Division to show off their cultural heritage, personal hobbies, and even health practices to their co-workers.

Members of NUWC Keyport Division's Dive Locker observe and coordinate treatment of a dive casualty inside a recompression chamber during a dive casualty drill in August. The Keyport Dive Locker supported the dive casualty drill with the regional recompression chamber drill maintained at NUWC Keyport Division.





Michael Theriault, a NUWC Newport Division employee for 32 years and lead hardware engineer for combat systems trainers, shows his granddaughter, Kinsley Ferreira, 5, the view of Narragansett Bay from a Type 18 periscope in the Periscope Lab during Bring a Child to Work Day in April. This year's event attracted more than 700 people and shared examples of undersea superiority yesterday, today and tomorrow.



From left, NUWC Newport Division Commanding Officer Capt. Michael Coughlin, Technical Director Ron Vien, U.S. Sen. Jack Reed; Warfare Centers Executive Director Donald McCormack, Warfare Centers Commander Rear Adm. Eric Ver Hage, U.S. Rep. Jim Langevin, and U.S. Sen. Sheldon Whitehouse revealed a monument commemorating NUWC Newport Division's 150th anniversary on July 29, 2019. About 500 employees, dignitaries and alumni attended the event in support of the command's historic accomplishments since its inception in 1869 as the Naval Torpedo Station on Goat Island in Newport. Speakers extolled the virtues of the command's work both in the past and the present, emphasizing the workforce's dedication to the mission as a critical aspect of the command's success.

A crowd gathers to hear speeches and presentations during NUWC Newport Division's Advanced Naval Technology Exercise (ANTX) 2019 in August at the Narragansett Bay Test Facility. ANTX events demonstrate the future of Navy technologies in a low-risk environment before they become integrated in the fleet. This year's theme was "Prepare For Battle: Undersea Security" and featured more than 70 technologies.





Research physiologist Lt. Travis Doggett, center, directs aircrew via radio during simulated flight in the Fluctuating Altitude Simulation Technology (FAST) system in January at the Navy Experimental Diving Unit. The system was developed and built by NSWC Panama City Division.



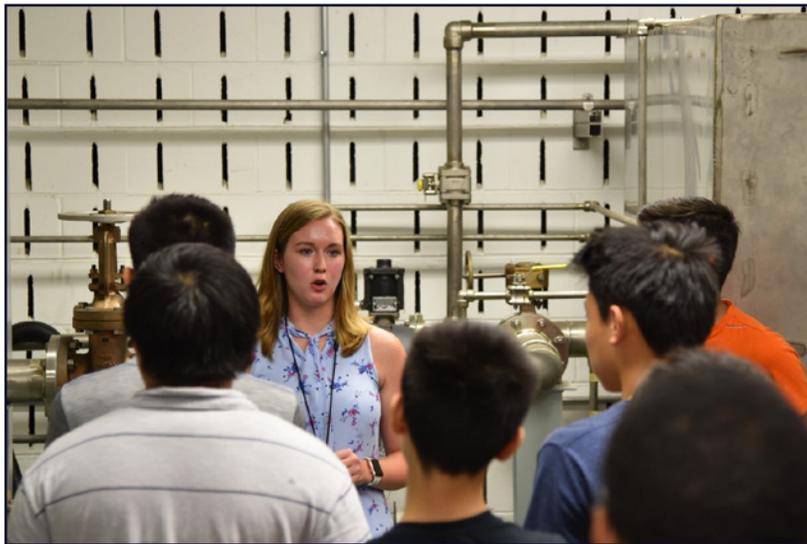
David Coan, extra vehicular activity lead for the National Aeronautics and Space Administration (NASA) Johnson Space Center dives at the Aquarius Reef Base underwater habitat donning a Kirby Morgan-37 helmet equipped with the Divers Augmented Vision Device Generation 1.0 heads-up display developed by NSWC Panama City Division during the 23rd NASA Extreme Environment Mission Operations in June. (Courtesy photo)



Capt. Aaron S. Peters, Commander, NSWC Panama City Division, judges the 2019 Director's Cup competition in May. The annual Director's Cup competition challenges each NSWC Panama City Division technical department team to create and field a fully autonomous, artificially intelligent, ground-based vehicle to neutralize a dangerous battlespace. (Courtesy photo)



U.S. Navy Sailors attached to USS Fitzgerald (DDG 62) receive borescope inspection training conducted by Scott Brown, Senior Engineering Technician, at NSWC Philadelphia Division in October. The borescope tool provides access to the internal sections of an engine, enabling the users to view any damage, cracks or imperfections within the confined chambers of the engine.



NSWC Philadelphia Division engineer Cassie Miller explains the Chilled Water Automation System (CWAS) test site during the annual Temple STEM Summer Camp in July. The summer camp provided local middle and high school students a chance to tour test sites and labs in the command as well as engage in panel discussions featuring NSWC Philadelphia Division engineers.

Steven Lagana, second from right, NAVSEA Shipyard Infrastructure Optimization Plan Program Office (PMS 555) Program Manager, toured the NSWC Philadelphia Division campus in May. During the visit, Lagana saw many test sites and labs including the Advanced Data Acquisition, Prototype Technology and Virtual Environments (ADAPTVE) lab.



NSWC Port Hueneme Division engineers Laura Morales and Michael Monzon, right, work on an upcoming training program for deckplate Sailors in the Littoral Combat Ship Lab in August.



Pictured raising the flag aboard the U.S. Navy Guided Missile Cruiser USS Bunker Hill (CG 52) while docked at NSWC Port Hueneme Division in September are Seaman Apprentice Louis Abraham, left, Seaman Robert Santos and Master Chief James Follmer.

Retired Rear Adm. Kathleen Paige, former chief engineer at NSWC Port Hueneme Division, speaks to Sailors after her keynote address during the command's Leadership in a Diverse Environment Event, held in August to celebrate Women's Equality Day and passage of the 19th Amendment that gave women the right to vote.

