

WAVES
Special Edition

2018

YEAR IN REVIEW



Carderock

Distribution Statement A:
Approved for public release;
distribution unlimited.



YEAR IN REVIEW

2018

CONTENTS

- 2** Carderock Division Leadership
- 3** Command Profile
- 8** Future of the Fleet
- 18** Winners' Circle
- 30** Notable Visits
- 42** Cultivating Our Workforce
- 50** History and Heritage
- 64** Cultivating Our Future Workforce

CORPORATE COMMUNICATIONS TEAM

Director: Roxie Merritt
Deputy: Peter Congedo

Kristin Behrle
James Contreras
Katie Ellis-Warfield
Harry Friedman
Edvin Hernandez
Devin Pisner
Ryan Hanyok
Neubar Kamalian
Bob Kurhajetz
Monica McCoy
Martin Sheehan
Kelley Stirling
Kevin Sykes
Michael White
Margaret Zavarelli

Supporting Contractors:
Nicholas Brezzell
Dayna Fairweather
Brooke Marquardt
Benjamin McKnight, III

COVER

The David Taylor Model Basin on July 30, 2018, at Naval Surface Warfare Center (NSWC), Carderock Division in West Bethesda, Md., is used to test ship and submarine models in a variety of situations.

Carderock Division Leadership



Capt. Mark Vandroff
Commanding Officer

Capt. Mark Vandroff assumed command of NSWC Carderock Division on Sept. 8, 2016. He is the 37th commander to lead the organization since its founding as the Experimental Model Basin in 1898. As commanding officer, Capt. Vandroff leads more than 2,300 employees who provide the Navy a broad range of technical support specializing in hull, mechanical and electrical engineering.

Capt. Vandroff graduated from the U.S. Naval Academy in 1989 with a B.S. in physics. While at the Naval Academy, he participated in the Voluntary Graduate Education Program. In December 1989, he graduated from The Johns Hopkins University with a Master of Science in applied physics.

His first sea tour was the pre-commissioning crew of USS Arleigh Burke (DDG 51), where he served as Auxiliaries Officer, Damage Control Assistant, First Lieutenant and CIC Officer. He also served in USS Gonzalez (DDG 66) as Weapons Officer and Combat Systems Officer. His initial Engineering Duty Officer (EDO) tour was at SUPSHIP Pascagoula as the AEGIS

Test Officer. Additional EDO tours include AEGIS Shipbuilding Combat Systems, Test and Trials Division Head; Director of Surface Combatants in the Office of the Assistant Secretary of the Navy (Research, Development and Acquisition); Director of Fleet Introduction, Testing and Requirements for the LPD 17 Class Amphibious Dock Transport ships; Executive Assistant to PEO SHIPS; and Deputy Program Manager for LPD 17 Class Amphibious Dock Transport Ships (PMS 317B).

From May 2011 to August 2016 he served as Major Program Manager for the DDG 51 Shipbuilding Program (PMS 400D).

His awards include two Legion of Merit, four Meritorious Service Medals, three Navy Commendation Medals and two Navy Achievement Medals. The programs he has led have been the recipient of some of Department of Defense's highest awards for acquisition excellence, including the 2011 Secretary of the Navy's Competition Excellence Award and the 2012 David Packard Award.



Larry Tarasek, SES
Technical Director

Lawrence Tarasek was appointed to the Senior Executive Service in September 2018. He is the Technical Director for NSWC Carderock Division. In this position, he oversees the research, development, test and evaluation, analysis, systems engineering, design, integration and certification of complex naval warfare systems related to ships and ship systems, combatant craft and Marine Corps vehicles for Carderock Division.

Prior to this assignment, Mr. Tarasek was the deputy Division Technical Director in Carderock Division from 2011 to 2018, providing direct support to the Division Technical Director and Carderock leadership in the areas of health of the Division technical capabilities, customer interactions, division funding, strategic planning, technical excellence and staff work to the Division Technical Director.

From 2005 to 2011, Mr. Tarasek served as the Carderock Division undersea technical project manager where he provided leadership to Carderock Division in Navy submarine design, technology integration and design workforce. He served as the primary interface between Carderock Division leadership and submarine executives in the NAVSEA Program Executive Office (PEO). He has extensive experience in every phase of the submarine life cycle

and has supported acquisition design and in-service submarine platforms. From 1994 to 2005, Mr. Tarasek served as the Lead Customer Advocate for the VIRGINIA Class Program leading all technical, business and administrative management as the primary customer interface for the command with the program office. Mr. Tarasek served a three-year detail from 1991 to 1994 to the Office of Naval Research (ONR) providing program management to numerous early-stage submarine design concepts and advanced technology demonstration projects.

Mr. Tarasek started his career in February 1985 in the Signatures Department at Carderock Division, performing engineering design work for the SEAWOLF submarine program. This work encompassed design and testing for numerous SEAWOLF silencing components and integration of these components into a balanced ship design.

Mr. Tarasek graduated from State University of New York at Buffalo with a Bachelor of Science in mechanical engineering.

In 2013, Mr. Tarasek was presented with the Department of the Navy Meritorious Civilian Service Award.

Command Profile

NSWC Carderock Division is the Navy's center of excellence for ships and ship systems. For over 100 years, Carderock has helped preserve and enhance the nation's presence on and under the seas. Carderock is the full-spectrum research and development, test and evaluation, engineering, and fleet support organization for the Navy's ships, submarines, military watercraft and unmanned vehicles, with insight into new concepts and diverse technologies for the Navy Fleet of the 21st Century. The Division's expertise spans from naval architecture and marine engineering, to electrical and mechanical engineering, to computer engineering and physics.

Carderock specializes in ship design and integration; environmental quality systems; hull forms and propulsors; structures and materials; signatures, silencing systems, and susceptibility; and vulnerability and survivability systems.

Carderock Division's unique laboratories, modeling and simulation facilities, at-sea-assets and large-scale, land-based engineering and test sites at our headquarters in West Bethesda, Maryland, and seven detachment locations across the country contribute to the full-spectrum nature of our mission.

Navy and maritime communities have come to depend on our expertise and innovative spirit in developing advanced platforms and systems, enhancing naval performance, integrating new technologies and reducing operating costs.

Carderock Division will continue to solve challenging engineering problems to meet future Fleet needs.

Mission

To provide full-spectrum research and development, test and evaluation, analyses, acquisition and Fleet support for the Navy's ships, ship systems and associated Navy logistics systems. Specific emphasis is to provide the core technical capabilities required for the integration of surface and undersea vehicles and associated systems, to develop and apply science and technology associated with naval architecture and marine engineering and to provide support to the maritime industry.



- Hull Forms and Fluid Dynamics
- Propulsors
- Surface, Undersea and Weapon Vehicle Materials and Manufacturing Technology
- Surface and Undersea Vehicle Structures
- Alternative Energy and Power Sources R&D
- Liquid Waste Management, Science and Systems
- Solid Waste and Hazardous Material Management, Science and Systems, and Ships and Subs Systems Safety
- Surface, Undersea and Expeditionary Vehicle Vulnerability Reduction and Protection
- Surface and Undersea Vehicle Underwater Signatures, Silencing Systems and Susceptibility
- Surface and Undersea Vehicle Non-Acoustic Topside Signatures, Silencing Systems and Susceptibility
- Radiation Detection Technology Research and Management

Vision

To be the Navy's trusted partner for identifying and providing world-class, innovative and cost-effective solutions for advanced ship and ship systems, for providing technical solutions to the warfighter and to keep our fleet at sea.

Thrust areas

- Ship, Submarine and Unmanned Vehicle Design and Integrity
- Advanced Manufacturing
- Digital Strategy
- Signature Management
- Unmanned Mobility Systems

Technical capabilities

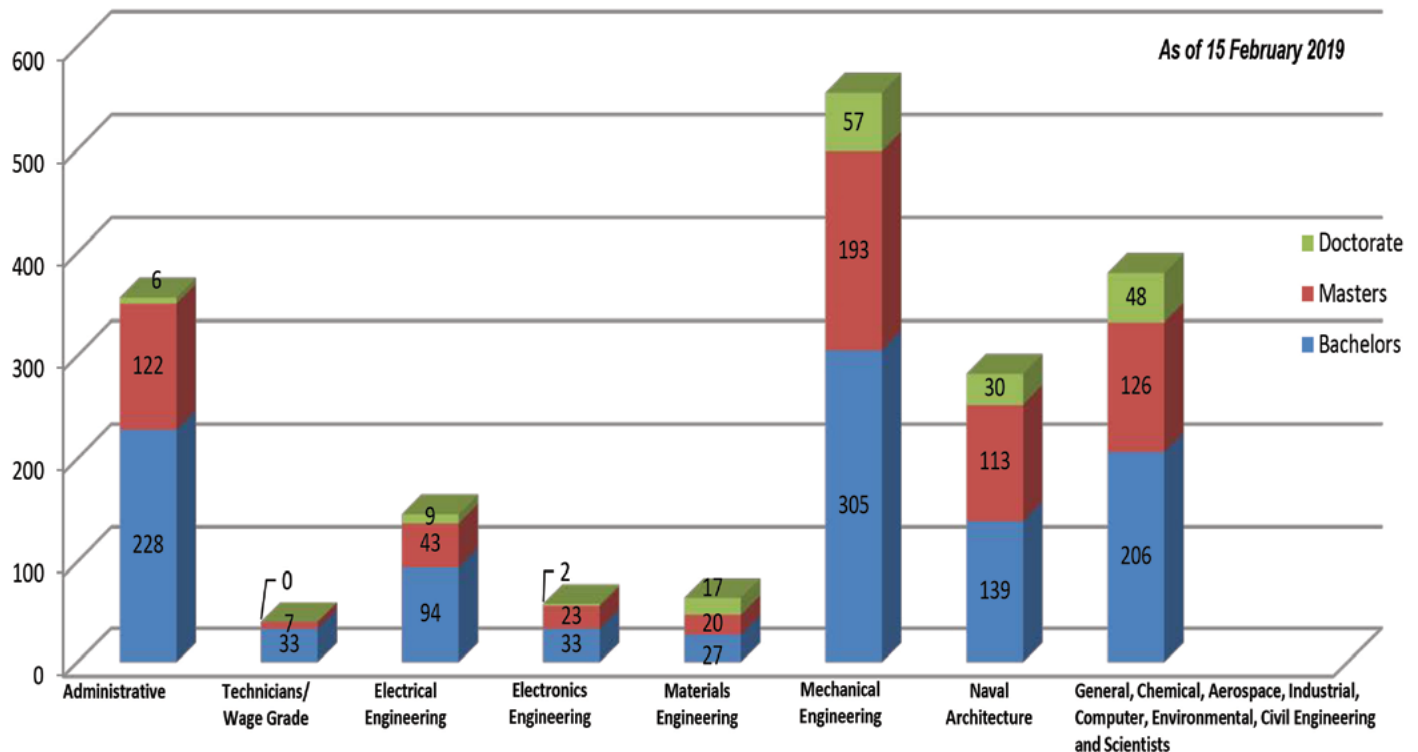
- Ship and Submarine Design and Integration
- Ship and Submarine Acquisition Engineering
- Ship and Submarine Systems Concepts, Technologies, and Processes
- Combatant Craft and Expeditionary Vehicles
- Unmanned Vehicles Naval Architecture and Marine Engineering

Major facilities

- David Taylor Model Basin — West Bethesda, MD
- Maneuvering and Seakeeping Facility (MASK) — West Bethesda, MD
- Deep Submergence Pressure Tank — West Bethesda, MD
- Anechoic Flow Facility — West Bethesda, MD
- Structure Evaluation Laboratory — West Bethesda, MD
- Explosives Test Pond — West Bethesda, MD
- Ship Materials Technology Center — West Bethesda, MD
- Magnetic Fields Laboratory — West Bethesda, MD
- Acoustic Research Detachment — Bayview, ID
- Large Cavitation Channel — Memphis, TN
- Southeast Alaska Acoustic Measurement Facility (SEAFAC) — Ketchikan, AK
- South Florida Ocean Measurement Facility (SFOMF) — Fort Lauderdale, FL

Command Profile

Our workforce and engineers



Total employees: 2,299

**Scientists and engineers:
1,488**

Education:

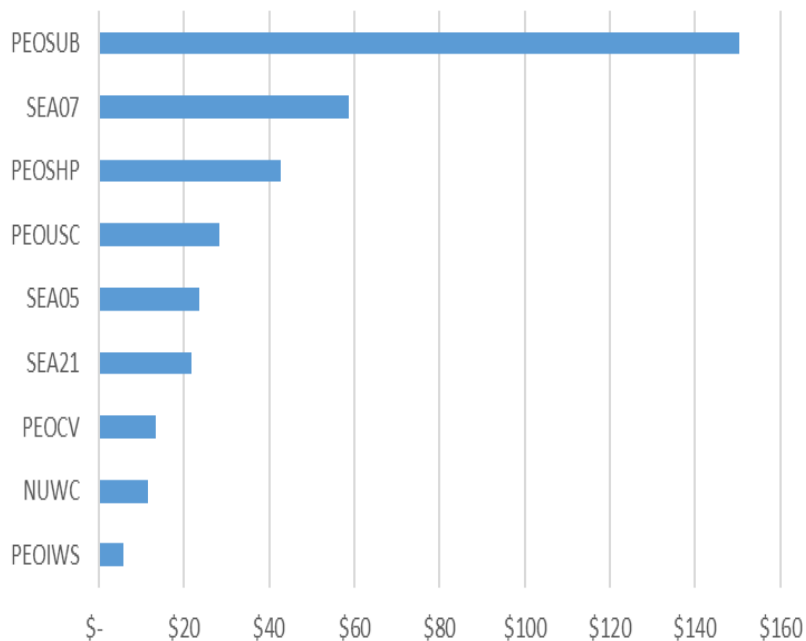
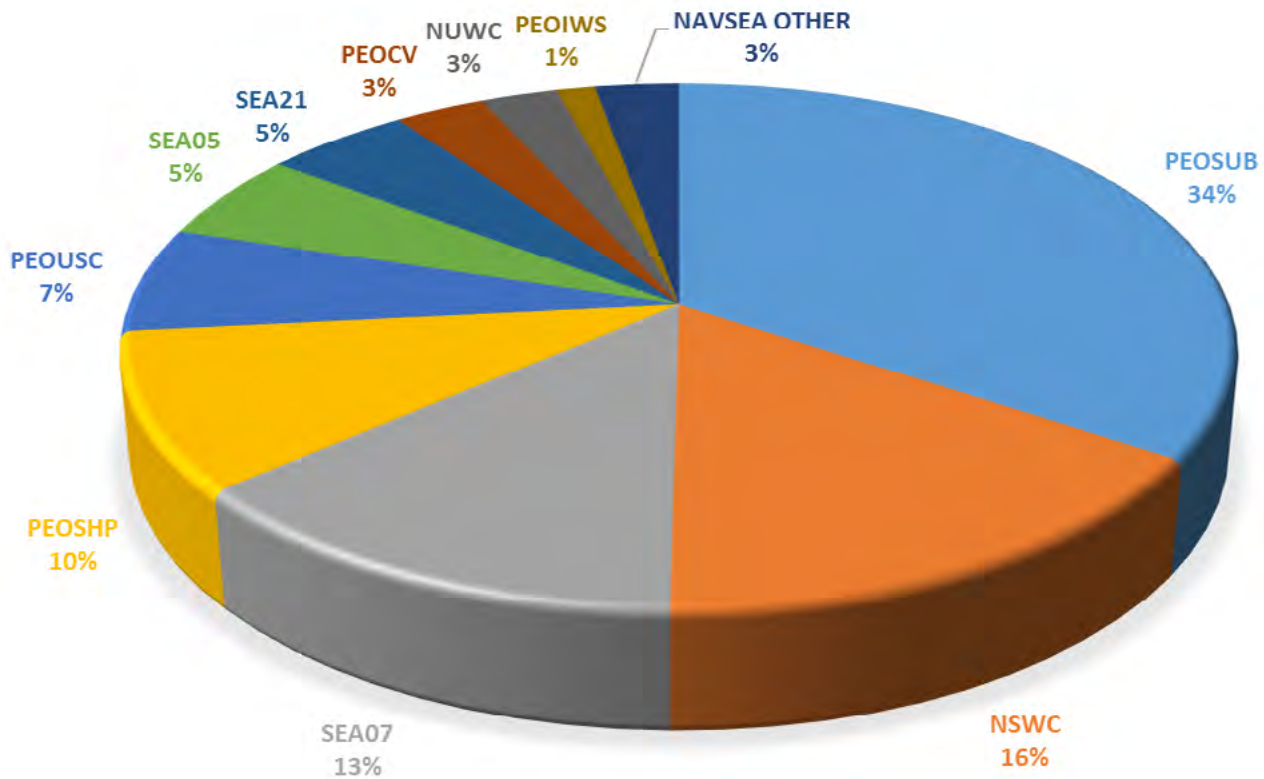
Bachelors - 1,065

Masters - 647

Doctorate - 198

Non-degree - 418

Major customers and budget FY18



**Business
cost reimbursable and
direct cite total:**
\$693 million

Reimbursable:
\$536 million

Direct cite:
\$157 million

Command Profile



Carderock Division Headquarters West Bethesda, Maryland

Naval Surface Warfare Center, Carderock Division is the principal Navy resource, national focal point and international leader in surface and undersea vehicle science, ship systems and related maritime technology. A major technical component of the Naval Sea Systems Command, the Division is a source of innovative technology for other national priorities such as environment, energy and transportation.

The Division is responsible for research, development, test and evaluation, fleet support, in-service engineering for surface and undersea vehicles, associated hull, machinery and electrical systems and propulsors. It conducts logistics research and development, as well as provides support to the maritime administration and the maritime industry.

The technical leadership areas of Carderock Division include materials, structures, ship protection systems, vehicle concepts, hydrodynamics, acoustic and electromagnetic signatures, environmental protection systems and logistics.



**Puget Sound Detachment
at Naval Submarine
Base Bangor**
Bangor, Washington

**Southeast Alaska Acoustic
Measurement Facility**
Ketchikan, Alaska

Acoustic Research Detachment
Bayview, Idaho

**Carderock Division
Headquarters**
West Bethesda, Maryland

**Norfolk Detachment
Combatant Craft Division**
Norfolk, Virginia

**Acoustic Trials
Detachment**
Titusville, Florida

Memphis Detachment
Dr. William B. Morgan Large Cavitation Channel
Memphis, Tennessee

**South Florida Ocean
Measurement Facility**
Dania, Florida

Southeast Alaska Acoustic Measurement Facility
Ketchikan, Alaska



**Puget Sound Detachment at
Naval Submarine Base Bangor**
Bangor, Washington



Acoustic Research Detachment
Bayview, Idaho



South Florida Ocean Measurement Facility
Dania, Florida



Acoustic Trials Detachment
Titusville, Florida



Norfolk Detachment Combatant Craft Division
Norfolk, Virginia



Memphis Detachment
Dr. William B. Morgan Large Cavitation Channel
Memphis, Tennessee

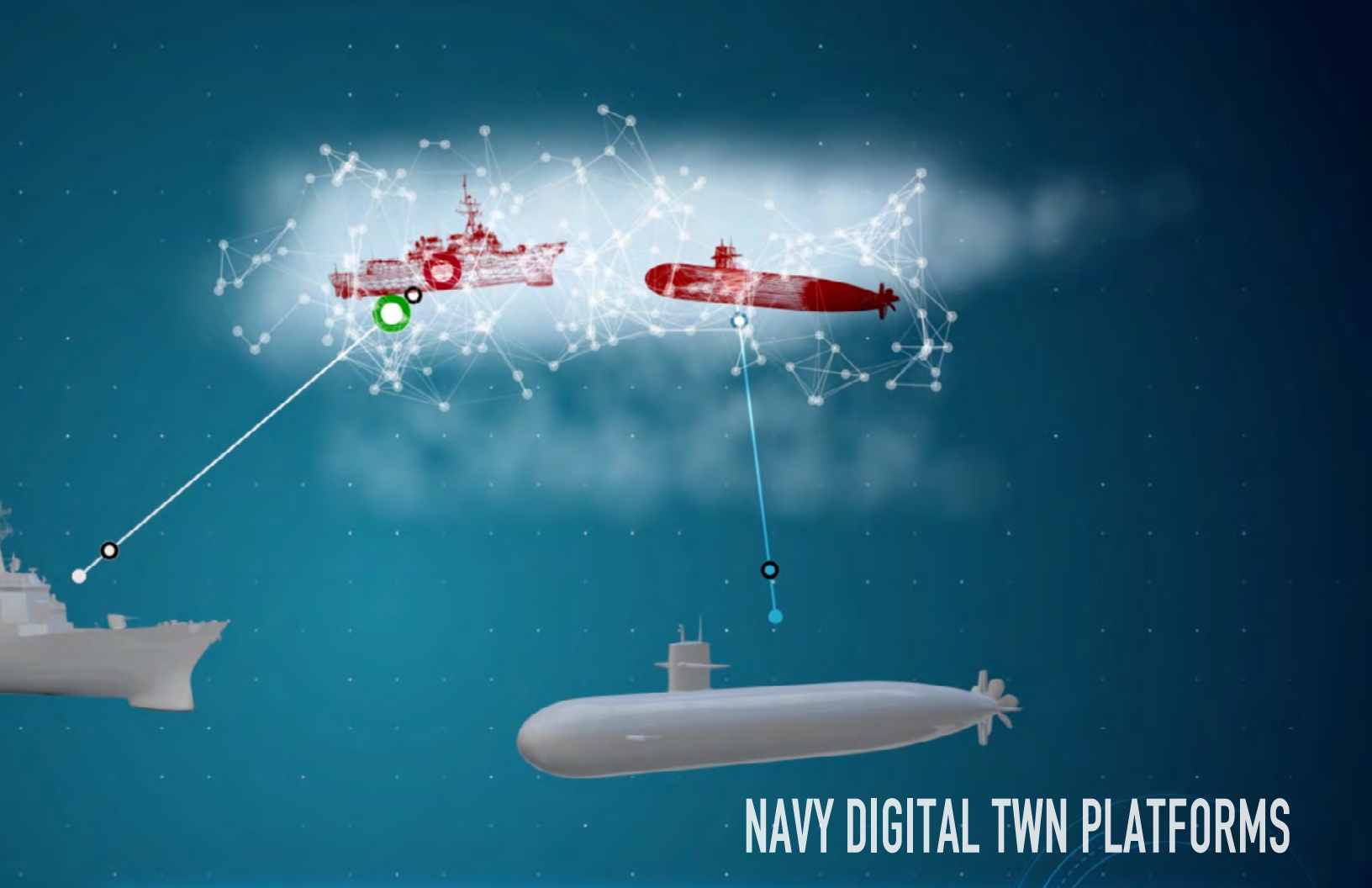
Future of the Fleet



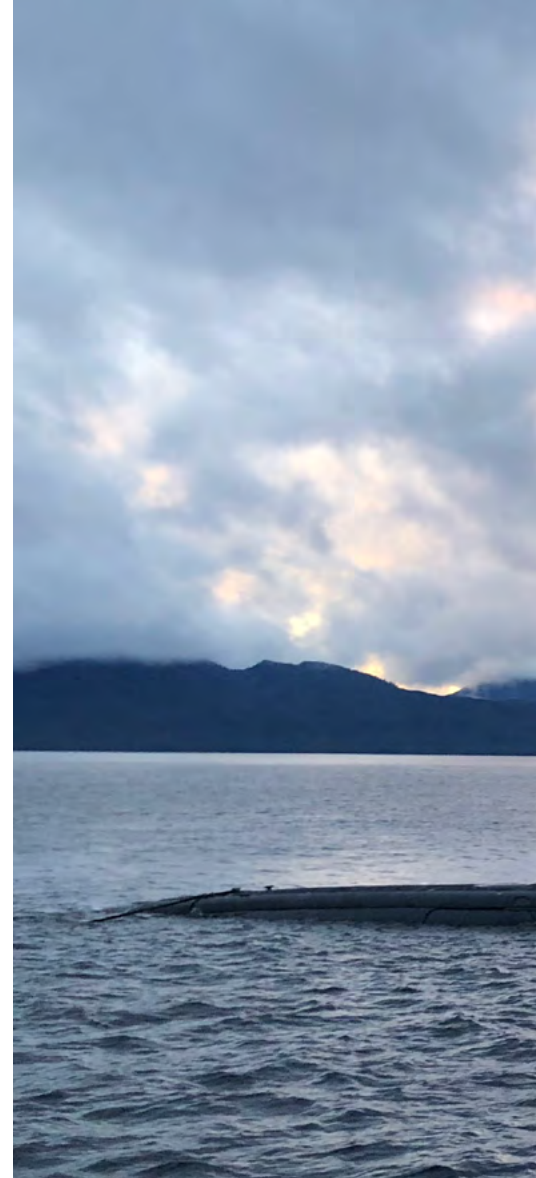
Above: A digital twin is a virtual representation of a platform where scenarios can be preformed before being tested on the actual platform. (U.S. Navy graphic illustration by Kristin Behrle/Released)

Left: A digital twin is a virtual representation of a platform where scenarios can be pre-formed before being tested on the actual platform. Original photo: The Arleigh Burke-class guided-missile destroyer USS Haley (DDG 97) transits the Indian Ocean on March 28, 2018. (U.S. Navy photo by Mass Communications Specialist 3rd Class Morgan K. Nall/Released and U.S. Navy graphic illustration by Bob Kurhajetz/Released)

Right: Dr. Dave Drazen, digital twin program manager at NSWC Carderock Division, speaks about the future of the Navy's digital twin platforms initiative, during a brown bag on Aug. 16, 2018, at Carderock's headquarters in West Bethesda, Md. (U.S. Navy photo by Neubar Kamalian/Released)



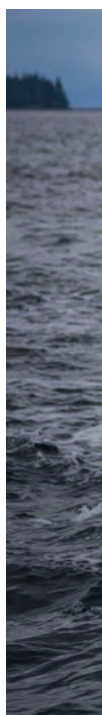
Future of the Fleet



Left: The Virginia-class fast-attack submarine USS Texas (SSN 775) sits surfaced in NSWC Carderock Division's Southeast Alaska Acoustic Measurement Facility (SEAFAC) static site on Oct. 26, 2018. (U.S. Navy photo by Monica McCoy/Released)

Above: The Virginia-class fast-attack submarine USS Texas (SSN 775) sits surfaced in NSWC Carderock Division's Southeast Alaska Acoustic Measurement Facility (SEAFAC) static site on Oct. 26, 2018. (U.S. Navy photo by Kelley Stirling/Released)

Right: Tim Allen, an engineer for the Trial Directors, Facilities and Mission Readiness Branch at NSWC Carderock Division's Bangor, Washington, site, rides a small boat out to the static site of Carderock's Southeast Alaska Acoustic Measurement Facility in Ketchikan, Alaska, on Oct. 27, 2018. (U.S. Navy photo by Monica McCoy/Released)





SOUTHEAST ALASKA ACOUSTIC MEASUREMENT FACILITY



Future of the Fleet

Right: Devin Pisner (left) and Neubar Kamalian (right), science and technology photographers in NSWC Carderock Division's Visual Information Branch, look on as Ryan Hanyok explains the design of the "Hanyok Strut" in the David Taylor Model Basin in West Bethesda, Md. (U.S. Navy photo by Nicholas Brezzell/Released)

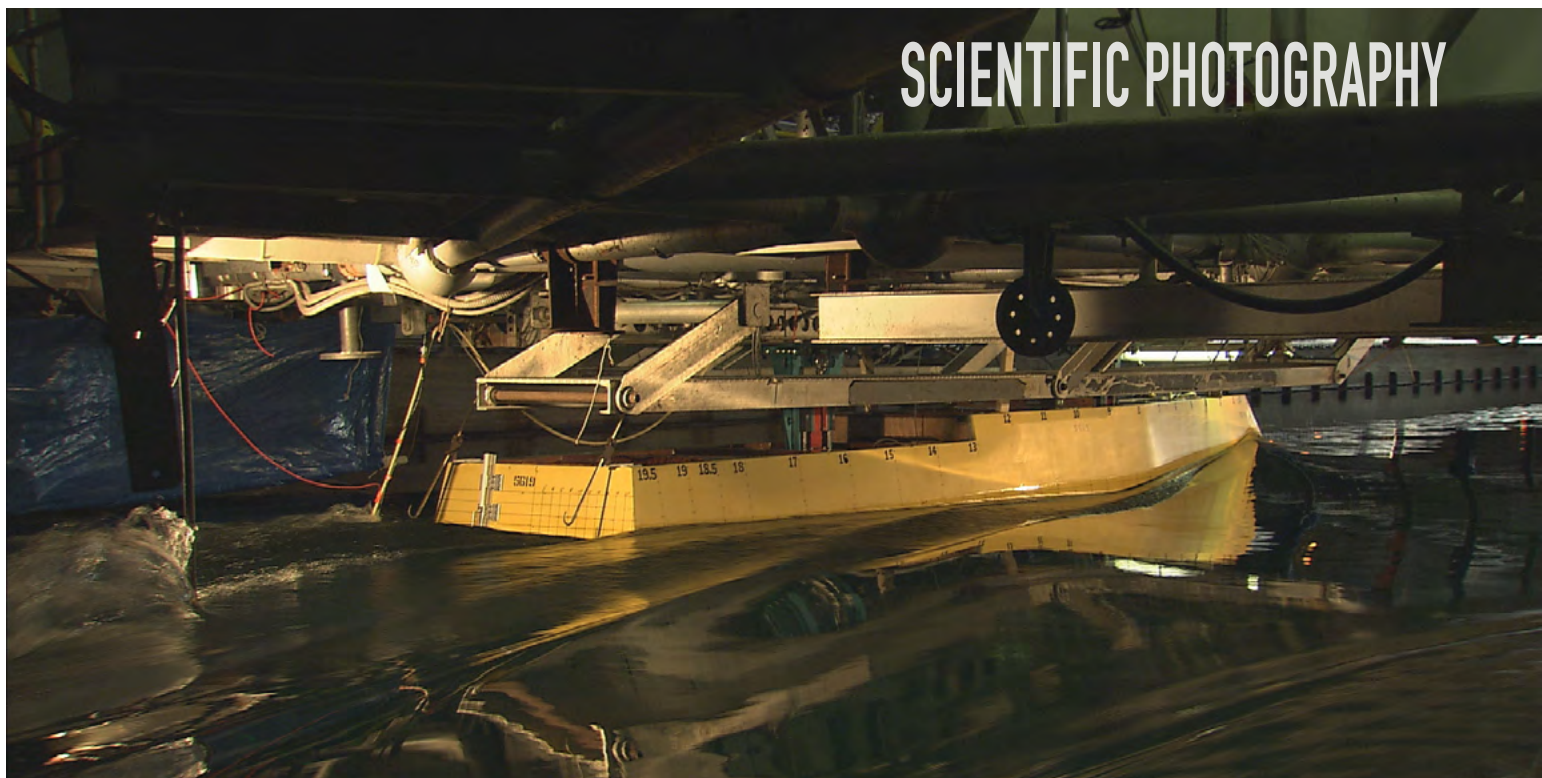
Bottom, left: The David Taylor Model Basin on July 30, 2018, at NSWC Carderock Division in West Bethesda, Md., is used to test ship and submarine models in a variety of situations. (U.S. Navy photo by Ryan Hanyok/Released)

A still frame taken from a video shows a scale-model ship being tested in the David Taylor Model Basin at NSWC Carderock Division, in West Bethesda, Md. (U.S. Navy photo by Neubar Kamalian/Released)

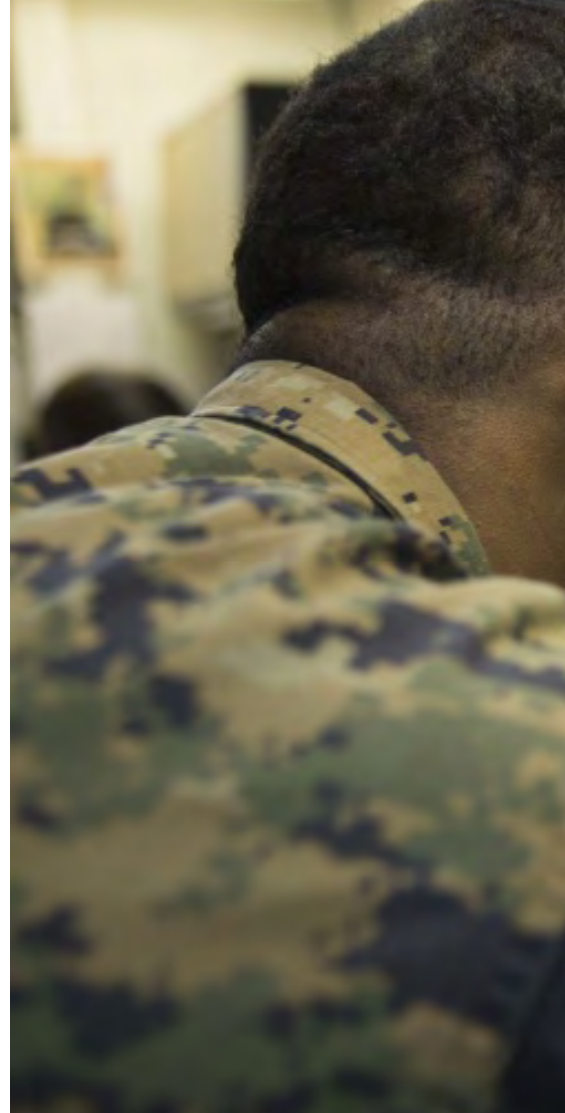
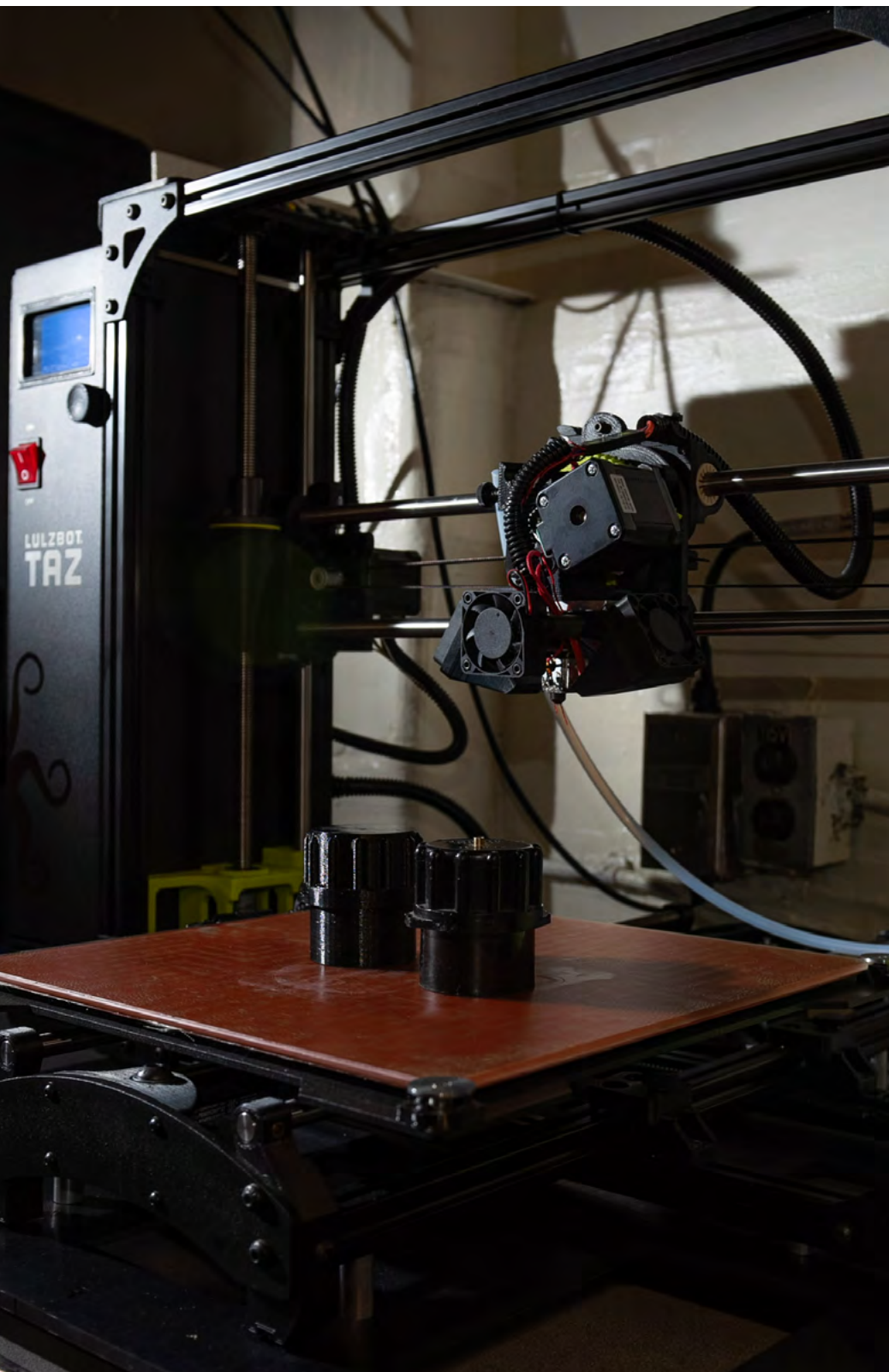




SCIENTIFIC PHOTOGRAPHY



Future of the Fleet



Left: A 3D printer aboard the Nimitz-class aircraft carrier USS John C. Stennis (CVN 74) on Sept. 21, 2018, during routine operations in the U.S. 3rd Fleet area of operations. (U.S. Navy photo by Mass Communication Specialist Seaman Angela Grimsley/Released)

Above: Sgt. Adrian Willis, a computer and telephone technician with Combat Logistics Battalion 31, 31st Marine Expeditionary Unit, prepares to print a 3D model aboard the USS Wasp (LHD 1) while underway in the Pacific Ocean, April 7, 2018. Marines with Combat Logistics Battalion 31, 31st Marine Expeditionary Unit, are now capable of additive manufacturing, also known as 3D printing, which is the technique of replicating digital 3D models as tangible objects. The 31st MEU partners with the Navy's Amphibious Squadron 11 to form the Wasp Amphibious Ready Group, a cohesive blue-green team capable of accomplishing a variety of missions across the Indo-Pacific. (U.S. Navy photo by Cpl. Bernadette Wildes/Released)

Right: A 3D printed bolt, a broken bolt and the final manufactured bolt for a hangar bay door assembly sit from left to right on a 3D printer aboard the Nimitz-class aircraft carrier USS John C. Stennis (CVN 74) on Sept. 1, 2018. (U.S. Navy photo by Mass Communication Specialist 3rd Class Grant C. Grady/Released)



ADDITIVE MANUFACTURING



Future of the Fleet



DEMONSTRATION AT LITTLE CREEK



Left: Boat captain Tim Boger signals that he is clear and ready to start engines as the 11-meter rigid inflatable boat (RIB) launched from Stiletto during a maritime demonstration of radar systems, Aug. 17, 2018, off the coast of Joint Expeditionary Base Little Creek-Fort Story, Va. Stiletto is the maritime platform used for technology demonstration; it is operated by NSWC Carderock Division's Combatant Craft Division in Norfolk. The Stiletto Maritime Demonstration Program is sponsored by the Rapid Reaction Technology Office under the assistant secretary of defense for research and engineering. (U.S. Navy photo by Kelley Sitrling/Released)

Above: Leaders in NSWC Carderock Division's Platform Integrity Department and command leadership cut the ribbon officially



opening the newly renovated Explosives Test Pond in West Bethesda, Md., on Oct. 10, 2018. From left: Laurence O'Neill, head of the Dynamic Measurements and Testing Branch; Larry Ripley, head of the Survivability and Weapons Effects Division; Jeff Mercier, head of the Platform Integrity Department; Larry Tarasek, technical director; Capt. Mark Vandroff, commanding officer; and visiting Capt. Grahame Dicks, commanding officer of Naval Support Activity Washington. (U.S. Navy photo by Nicholas Brezzell/Released)

Right: Rob Skelding (far right), an engineer in NSWC Carderock Division's Advanced Power and Energy Branch, describes the hybrid-power test station to members of the Advanced Power and Energy strategic senior leadership group on Sept. 6, 2018, during a tour of Carderock facilities. (U.S. Navy photo by Kelley Stirling/Released)



Winners' Circle

MAGNIFICENT



EIGHT AWARDS



1: Rita M. Terhaar, Carderock's Human Resources director, receives the Rear Adm. Grace M. Hopper Award for excellence in organizational support at the Carderock Division Honor Awards ceremony, Aug. 28, 2018, in West Bethesda, Md. From left: Commanding Officer Capt. Mark Vandroff; Terhaar; Tamar Gallagher, head of Carderock's Corporate Operations Department; and Dr. Paul Shang, Carderock's acting technical director. (U.S. Navy photo by Nicholas Brezzell/Released)

2: The MK 18 Mod 2 Lithium Battery Test Team receives the Rear Adm. Benjamin F. Isherwood Award for exceptional fleet support at the Carderock Division Honor Awards ceremony, Aug. 28, 2018, in West Bethesda, Md. Members of the team are, pictured left after Commanding Officer Capt. Mark Vandroff: Earl Armstrong, Adam Dolezal, Thomas Hays, Louis Levine, Jacob Helmers, Jessica Schwartz, Joseph Praydis, Julie Anne Simmons and Usman Sorathia. Also pictured is Dr. Paul Shang, acting technical director, and Jeff Mercier, head of the Platform Integrity Department. Awardee Christopher Mealy is not pictured. (U.S. Navy photo by Nicholas Brezzell/Released)

3: Stephanie Ferrone receives the Vice Adm. Samuel L. Gravely Jr. Award for achievement in equity and diversity at the Carderock Division Honor Awards ceremony, Aug. 28, 2018. From left: Commanding Officer Capt. Mark Vandroff; Ferrone; Mike Slater, division head of Carderock's Signatures Measurement

Technologies and Systems Division; and Dr. Paul Shang, Carderock's acting technical director. (U.S. Navy photo by Nicholas Brezzell/Released)

4: The Computational Research and Engineering Acquisition Tools and Environments (CREATE) – Ships Team receives the Vice Adm. Emory S. Land Award for collaboration excellence at the Carderock Division Honor Awards ceremony, Aug. 28, 2018, in West Bethesda, Md. The team members, who came from all the technical codes at Carderock, are: Dr. Shawn Aram, Raymond DeFrese, Dr. Keegan Delaney, Dr. John Gilbert, Dr. Alexander Gray, Todd Heidenreich, Jeffrey Hough, Dr. Jun Li, Dory Lummer, Michael Miraglia, Cathy Ngo, Dr. Bong Rhee, Cullen Sarles, Dr. Hua Shan, Jonathan Stergiou, Richard Van Eseltine, Dr. Abel Vargas and Wesley Wilson. (U.S. Navy photo by Nicholas Brezzell/Released)

5: The LHA 6 Total Ship Survivability Trial Team receives the Donald F. McCormack Award, which recognizes a small group for collaboration excellence across the Warfare Centers, at NSWC Carderock Division Honor Awards ceremony, Aug. 28, 2018, in West Bethesda, Md. From left: Commanding Officer Capt. Mark Vandroff; NSWC Carderock's Laurent Edgell, Jeevan Nalli, Christopher Perich and Michael Persinger; NSWC Philadelphia's Hannah Demboski and Robert High; Jeff Mercier, head of the Platform Integrity Department; and Dr. Paul Shang, acting technical director. (U.S. Navy photo by Nicholas Brezzell/Released)



Winners' Circle

1: Dr. Brian Glover, a physicist in Carderock's Theory, Modeling and Analysis Branch, receives the Rear Adm. David W. Taylor Award for outstanding scientific achievement at the Carderock Division Honor Awards ceremony Aug. 28, 2018, in West Bethesda, Md. From left: Commanding Officer Capt. Mark Vandroff; Glover; Mike Slater, division head of Carderock's Signatures Measurement Technologies and Systems Division; and Dr. Paul Shang, acting technical director. (U.S. Navy photo by Nicholas Brezzell/Released)

2: Scott Black, head of the Computational Fluid Dynamics Division, accepts the Rear Adm. George W. Melville Award for engineering excellence on behalf of naval architect Stephen Neely, who was not able to attend, at the Carderock Division Honor Awards ceremony Aug. 28, 2018, in West Bethesda, Md. From left: Commanding Officer Capt. Mark Vandroff; Black; Steve Ouimette, deputy head of the Naval Architecture and Engineering Department; and Dr. Paul Shang, acting technical director. (U.S. Navy photo by Nicholas Brezzell/Released)

3: Amy Le Doux, Carderock's customer advocate for the Virginia-class Program Office (PMS450), receives the Capt. Harold E. Saunders Award for exemplary technical management at the Carderock Division Honor Awards ceremony Aug. 28, 2018, in West Bethesda, Md. From left: Commanding Officer Capt. Mark Vandroff; Coats; Mike Slater, division head of Carderock's Signatures Measurement Technologies and Systems Division; and Dr. Paul Shang, acting technical director. (U.S. Navy photo by Nicholas Brezzell/Released)

4: Dr. Timothy Coats, lead for Combatant Craft Division's Unmanned Maritime Mobility Group, receives the Capt. Harold E. Saunders Award for exemplary technical management at the Carderock Division Honor Awards ceremony Aug. 28, 2018, in West Bethesda, Md. From left: Commanding Officer Capt. Mark Vandroff; Coats; Steve Ouimette, deputy head of the Naval Architecture and Engineering Department; and Dr. Paul Shang, acting technical director. (U.S. Navy photo by Nicholas Brezzell/Released)





Winners' Circle

Right: Dr. Young T. Shen (second from left) receives a certificate signed by the secretary of the Navy for his 45 years of service to Carderock Division during the quarterly command awards ceremony on March 20, 2018. Standing next to Shen (from left) are Dr. Paul Shang, acting technical director for Carderock; Mike Brown, head of the Naval Architecture and Engineering Department; and Carderock Division Commanding Officer Capt. Mark Vandroff. (U.S. Navy photo by Harry Friedman/Released)

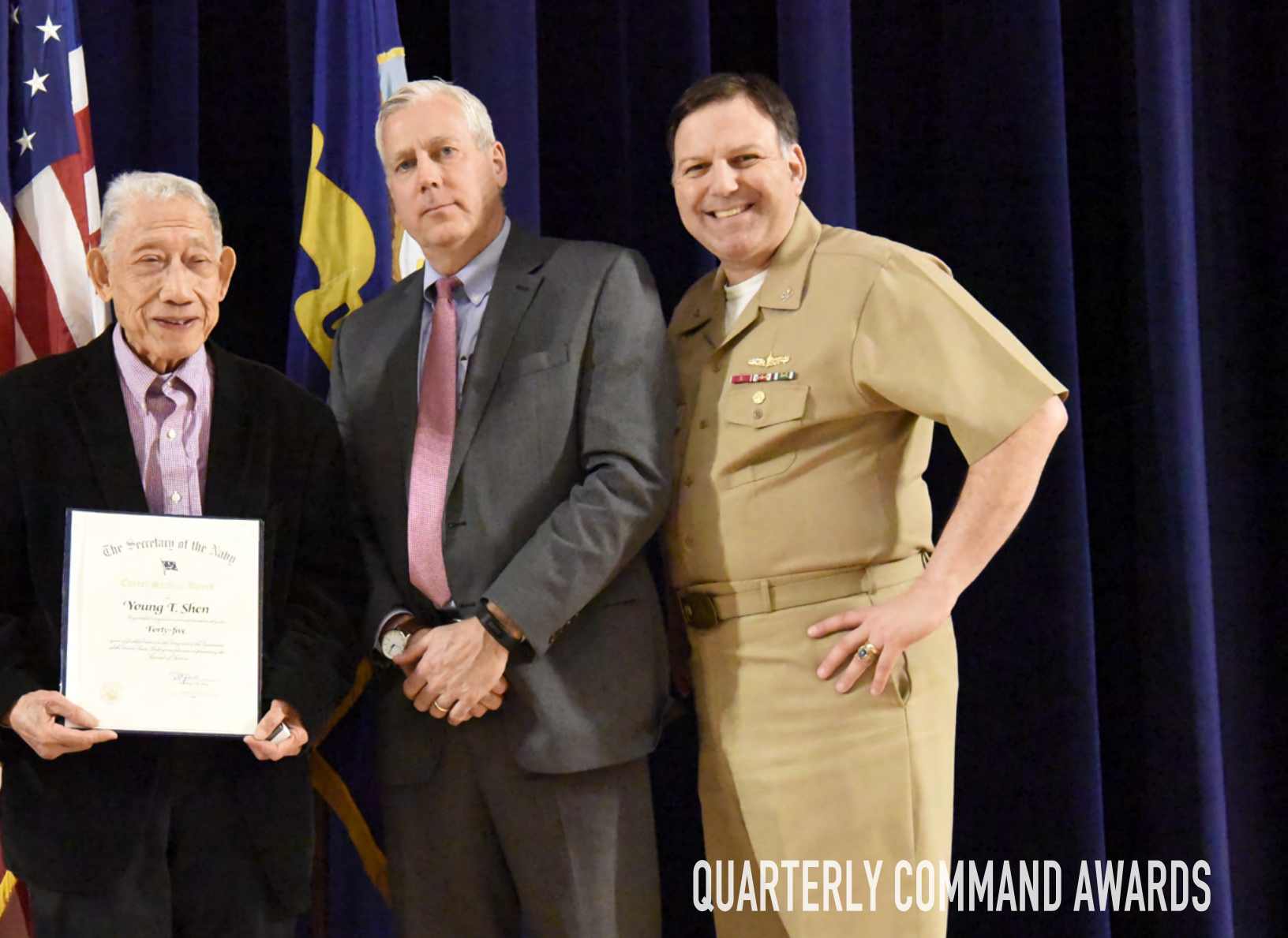
Bottom, right: Henry Joseph Venne (center) receives the Department of Navy Meritorious Civilian Service Award at the Carderock Division, command awards ceremony on March 20, 2018. The award was given to Venne for outstanding service as the shock trial director for the Full Ship Shock Trials of USS Milwaukee (LCS 5) and USS Jackson (LCS 6) from May to November 2016. Standing next to Venne (from left) are Dr. Paul Shang, acting technical director for Carderock; and Carderock Division Commanding Officer Capt.

Mark Vandroff. (U.S. Navy photo by Harry Friedman/Released)

Bottom, center: Dr. David P. Kihl is presented a certificate from the secretary from the Navy for 40 years of federal service during Carderock's quarterly command award ceremony on June 26, 2018, in West Bethesda, Md. From left to right, Commanding Officer Capt. Mark Vandroff; Kihl; Jeff Mercier, Platform Integrity Department head; and Dr. Paul Shang, acting technical director for Carderock. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, left: Dr. John J. Holmes is presented a certificate from the secretary of the Navy for 40 years of federal service during Carderock's quarterly command award ceremony on June 26, 2018, in West Bethesda, Md. From left to right, Commanding Officer Capt. Mark Vandroff; Holmes; Paul Luehr, acting Signatures Department head; and Dr. Paul Shang, acting technical director for Carderock. (U.S. Navy photo by Nicholas Brezzell/Released)





Winners' Circle

Right: Capt. Mark Vandroff (left) presents Master At Arms 1st Class Lynn O. Phillips with the Navy and Marine Corps Achievement Medal during Carderock's quarterly command award ceremony on June 26, 2018, in West Bethesda, Md., for the superior performance of his duties while serving as a security specialist at Carderock from October 2017 to June 2018. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, far left: Aviation Machinist Mate 3rd Class Brennen Devney (right) accepts a certificate of promotion to second class petty officer from Capt. Mark Vandroff on June 26, 2018. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, second from left: Operations Specialist 3rd Class Senait Harris accepts a certificate of promotion to second class petty officer on June 26, 2018. From left, Commanding Officer Capt. Mark Vandroff, Harris and Logistics Specialist 2nd Class Helena Frye. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, second from right: Builder 3rd Class Arelis Martinez (right) accepts a certificate of promotion to second class petty officer from Capt. Mark Vandroff on June 26, 2018. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, far right: Machinist Mate 1st Class Jonathan Gray (right) accepts his promotion to first class petty officer from Capt. Mark Vandroff on June 26, 2018. Gray also received the Navy and Marine Corps Achievement Medal for superior performance of his duties while serving as a logistics specialist at Carderock from Nov. 1, 2017, to June 25, 2018. (U.S. Navy photo by Nicholas Brezzell/Released)





QUARTERLY COMMAND AWARDS



Winners' Circle

Right: Rear Adm. Tom Anderson (far right), NSWC commander presents Warfare Center awards during a visit to NSWC Carderock Division in West Bethesda, Md. on Aug. 15, 2018. Pictured from left, Carderock Commanding Officer Capt. Mark Vandroff, award recipients Jeevan Nalli, Jared Soltis, Christopher Perich, Laurent Edgell, Eric Silberg, Brittany Preston-Baker, David Rich, Randy Lang, Eugene Reed, Alexis Hargro, Kevin Hale, Virginia Miele, Steve Szpara, James Mulford, Stephen Shepherd, Kevin Lin, Alexander Tsarev, Jason Delisser and Anderson. (U.S. Navy photo by Devin Pisner/Released)

Bottom, left: Kathy Pellicci receives the award for "Best Special Event," presented by Vince Micone, LFCC chairperson, and DHS chief of staff, during the "Finale and Awards Program" for the Combined Federal Campaign of the National Capital Area, March 23, 2018, held at the Smithsonian's National Museum of African American History and Culture. (Courtesy photo provided)

Bottom, right: Capt. Mark Vandroff and Larry Tarasek, commanding officer and technical director of Carderock Division, respectively, presented a command coin to employees to recognize their efforts in cleaning up Carderock's financial records. In total, \$5.6 million and about 1,370 transactions were removed from the financial records, representing a 97 percent reduction. This was the highest percentage reduction across all Warfare Centers and will greatly improve Carderock's audit readiness posture. Those receiving the command coin for this effort include (some not pictured): Clarissa Pudleiner, Lisa Almeter, Robert Weller, Alicia Chiang, Faiza Brahim, Robert Gault, Emeline Kirks, April Washington, Narsimha (Marty) Chaturvedula, Lynda Kelly, Betty Melendrez, Joann Starks, Rodnee Ganio, Christian Taye, Russell Stewart, Bria Bullock, Richard Watkins, Robert Weller, Alicia Chiang, Ji Kim, Sharon Tengood and Kenny Pleasants. (U.S. Navy photo by Harry Friedman/Released)



COMBINED FEDERAL CAMPAIGN



WARFARE CENTER AWARDS



COMMAND COINS

Winners' Circle



HILEMAN AWARD



Left: James Wigle, an engineer with the Corrosion and Coatings Engineering Branch at NSWC Carderock Division, was awarded the Hileman Award during the American Society of Naval Engineers (ASNE) MegaRust 2018 conference on May 23 in San Diego. The Hileman Award was established in honor of Don Hileman for his lifetime contributions to naval corrosion control and the MegaRust initiative. It is presented annually to an individual who has made exceptional contributions to naval corrosion control, and it was awarded to Wigle for his work as the manager of the Corrosion Control Assistance Teams for the Navy. (Courtesy photo provided)

Above: Brian Caine, TUBA program manager, receives the Navy Meritorious Civilian Service Award on Nov. 7, 2018, from NSWC



NAVY MERITORIOUS CIVILIAN SERVICE AWARD

Carderock Division Commanding Officer Capt. Mark Vandroff for his contributions in the area of acoustics systems for undersea warfare. (U.S. Navy photo by Devin Pisner/Released)

Right: Jesse Geisbert, NSWC Carderock Division's Virginia-class submarine propulsor manufacturing project manager, receives the American Society of Naval Engineers (ASNE) Rosenblatt Young Naval Engineer Award at the ASNE Technology, Systems and Ships Conference in Washington, D.C., on June 20, 2018. From left: Fredrick J. (Jay) Stefany, deputy assistant secretary of the Navy (ships), Office of the Assistant Secretary of the Navy Research, Development and Acquisition; Jessica Geisbert, NSWC Carderock Division's Propulsors Branch head; Jesse Geisbert; and retired U.S. Navy Capt. Richard White. (Courtesy photo provided)



ASNE ROSENBLATT AWARD



Left: Chief of Naval Research Rear Adm. David Hahn speaks to representatives of the Naval Research and Development Establishment at a collaboration forum on July 31, 2018, at NSWC Carderock Division in West Bethesda, Md. (U.S. Navy photo by Kelley Stirling/Released)

Right: James Smerchansky (center), executive director for NAVSEA, listens to a presentation by Seth Lambert, during a visit to NSWC Carderock Division's Acoustic Research Detachment in Bayview, Idaho, on Feb. 28, 2018. (U.S. Navy photo by Keith Thomas/Released)



SMERCHANSKY VISITS ACOUSTIC RESEARCH DETACHMENT

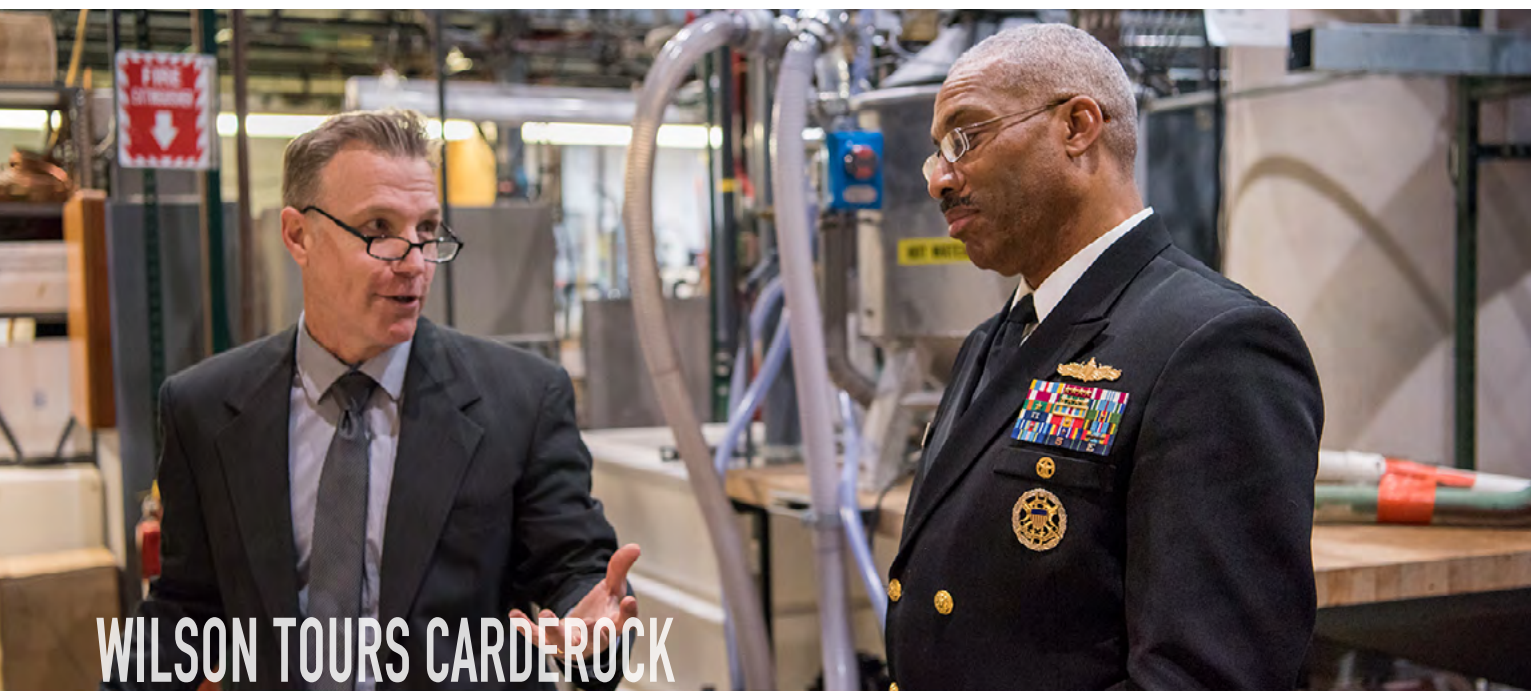
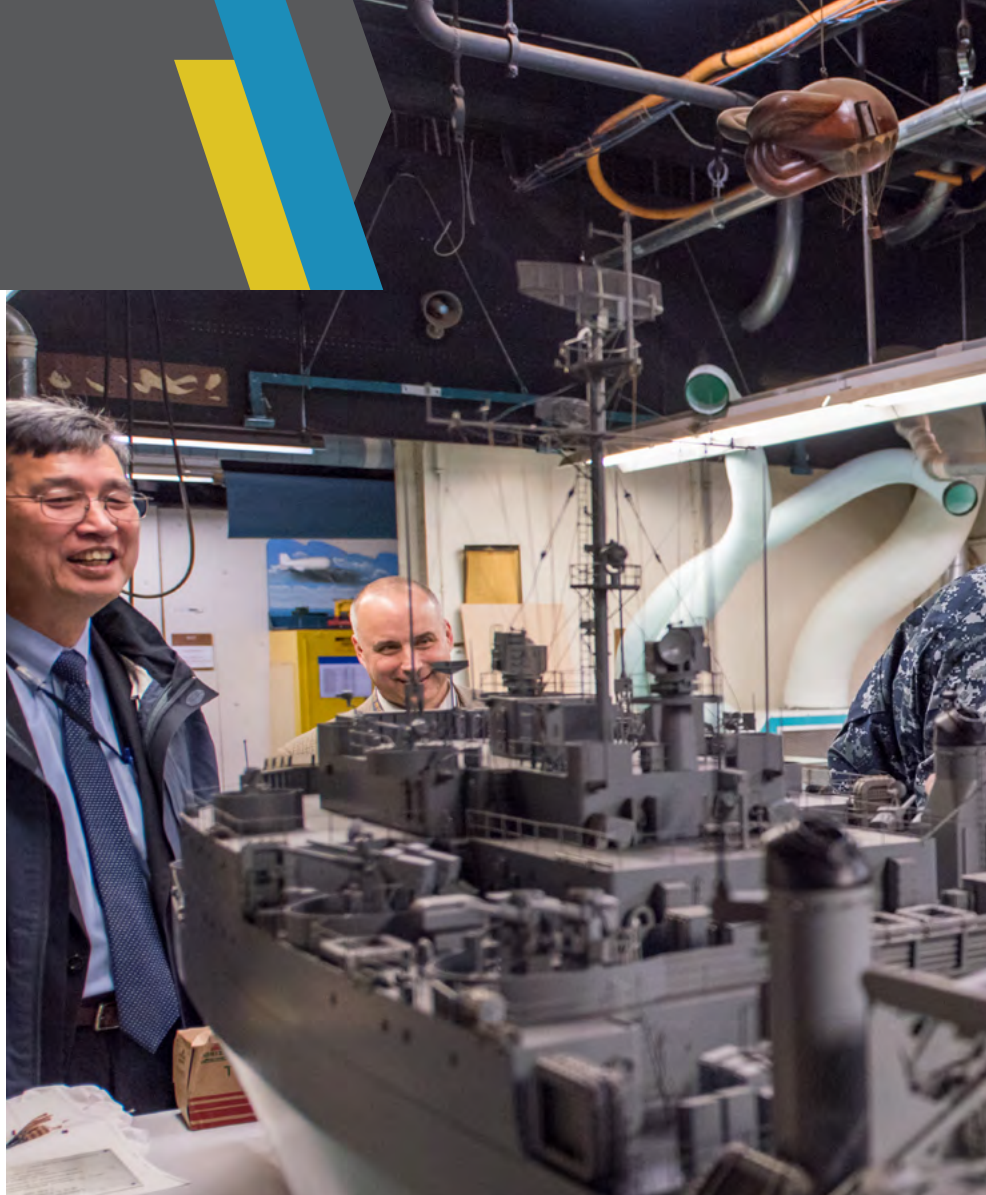


Notable Visits

Right: James Smerchansky (center), executive director for Naval Sea Systems Command (NAVSEA), listens as the Navy's curator of ship models, Dana Wagner (right), explains the models being worked on in his shop at NSWC Carderock Division in West Bethesda, Md., on Jan 17, 2018. From left: Dr. Paul Shang, acting technical director; Larry Tarasek, deputy technical director; Capt. Mark Vandroff, commanding officer; Smerchansky; and Wegner. (U.S. Navy photo by Jake Cirsena/Released)

Bottom, left: Rear Adm. Jesse Wilson, commander, Naval Surface Force Atlantic, listens to Bill Hertel, a mechanical engineer with the Solid Waste, Pollution Prevention and Hazardous Material Management Branch on Feb. 13, 2018, as he describes the Mobile Cleaning, Recovery and Recycling System that is used aboard ships for flight deck cleaning. During Wilson's visit to NSWC Carderock in West Bethesda, Md., he was a guest speaker for the Black History Month celebration. (U.S. Navy photo by Jake Cirsena/Released)

Bottom, right: Jim Smerchansky (center), executive director for NAVSEA, listens to engineer Paul Young during a visit to NSWC Carderock Division in West Bethesda, Md., Jan 17, 2018. From left: Commanding Officer Capt. Mark Vandroff, NAVSEA Command Master Chief Bob Crossno, Smerchansky and Young. Smerchansky toured base facilities and held an all-hands call for staff during his visit. In the background is the red deep-submergence pressure tank. (U.S. Navy photo by Jake Cirsena/Released)



WILSON TOURS CARDEROCK



SMERCHANSKY VISITS CARDEROCK

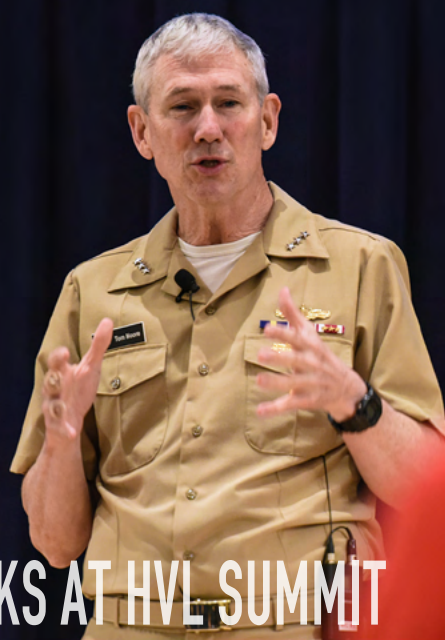


Notable Visits

Right: Rear Adm. Thomas J. Anderson (right), commander, NSWC listens to engineer Stephanie Ferrone as she describes equipment in the Electromagnetics Facility at NSWC Carderock Division during his visit, May 24, 2018, in West Bethesda, Md. (U.S. Navy photo by Devin Pisner/Released)

Bottom, left: Vice Adm. Thomas Moore, commander of NAVSEA, speaks during the high-velocity learning (HVL) summit at NSWC Carderock Division, May 15, 2018, in West Bethesda, Md. (U.S. Navy photo by Justin Hodgea/Released)

Bottom, right: Dennis Danko (right), program manager for the Stiletto Maritime Demonstration Program, talks to Rear Adm. Tom Anderson, commander, NSWC about the technology available aboard Stiletto during a visit to NSWC Carderock Division's Combatant Craft Division at Joint Expeditionary Base Little Creek-Fort Story, Virginia, on Nov. 8, 2018. (U.S. Navy photo by Roseller Lim/Released)



MOORE SPEAKS AT HVL SUMMIT



ANDERSON VISITS CARDEROCK



ANDERSON VISITS LITTLE CREEK

Notable Visits



FU SPEAKS AT ENGINEERS WEEK



Above: U.S. Rep. Debbie Wasserman Schultz (FL-23) visits NSWC Carderock Division's South Florida Ocean Measurement Facility (SFOMF) in Dania Beach, Fla., April 9, 2018, to talk about Navy work and partnership with Nova Southeastern University. From left, Prof. Alexander Soloviev; Brian Osgood, SFOMF project manager; Wasserman Schultz; Mike Farrar, SFOMF site director; and Prof. Richard Dodge. (Courtesy photo provided)

Left: Dr. Tom Fu, director for the Ship Systems and Engineering Research Division at the ONR, speaks about Navy Digital Twin during the National Engineers Week event, Feb. 21, 2018, at NSWC Carderock Division in West Bethesda, Md. (U.S. Navy photo by Jake Cirkseña/Released)

Right: Nathan Desloover (center), an engineer with the Additive Manufacturing Project Office at NSWC Carderock Division, describes the 3D printing of a small drone to Maj. Gen. David Coffman (right), deputy commanding general, I Marine Expeditionary Forces. Coffman was visiting the West Bethesda, Md., headquarters March 16, 2018, to learn more about Carderock's role in expeditionary improvements. (U.S. Navy photo by Monica McCoy/Released)



WASSERMAN SCHULTZ VISITS SOUTH FLORIDA OCEAN MEASUREMENT FACILITY



COFFMAN TOURS MAKE LAB

Notable Visits



SENATE STAFFERS TOUR CARDEROCK



Left: Jeff Mercier (center), Platform Integrity Department head, speaks to U.S. Senate staffers in Building 19's B-bay during their visit to NSWC Carderock Division in West Bethesda, Md., Oct. 26, 2018. (U.S. Navy photo by Martin Sheehan/Released)

Above: Steve Ouimette, deputy head for the Naval Architecture and Engineering Department at NSWC Carderock Division, gives a tour to Adm. James (Frank) Caldwell, director for the Naval Nuclear Propulsion Program, of the David Taylor Model Basin during his visit, June 5, 2018, to Carderock's West Bethesda, Md., headquarters. (U.S. Navy photo by Nicholas Brezzell/Released)

Right: Adm. James (Frank) Caldwell, director for the Naval Nuclear Propulsion Program, rocks the red during his all-hands call, June 5, 2018, at NSWC Carderock Division, in West Bethesda, Md. Caldwell gave the Washington Capitals towel to the person who asked the first question during the all-hands call two days before the hockey team won the Stanley Cup. (U.S. Navy photo by Nicholas Brezzell/Released)



CALDWELL VISITS CARDEROCK



CALDWELL HOLDS ALL-HANDS ALL CAPS

Notable Visits

Right: U.S. Rep. Bradley Byrne (center) from Alabama, a member of the House Armed Services Committee-Seapower Subcommittee, tours the Maneuvering and Seakeeping Basin as part of his visit to NSWC Carderock Division in West Bethesda, Md., Sept. 25, 2018, with Commanding Officer Capt. Mark Vandroff (right) and Technical Director Larry Tarasek. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, left: Alan Griffiths, site director for NSWC Carderock Division's Acoustic Research Detachment, talks to Idaho Public Television, Dec. 7, 2018, about ARD's mission for the Navy and its stewardship of the environment at Lake Pend Oreille in Bayview, Idaho. (U.S. Navy photo by Katie Ellis-Warfield/Released)

Bottom, right: Deputy Assistant Secretary of the Navy for Unmanned Systems Frank Kelley (right) listens to Garry Shields, director of the Disruptive Technologies Lab, April 20, 2018, as Shields explains the second version of the Optionally Manned Technology Demonstrator that is being readied for hydrodynamic testing at NSWC Carderock Division in West Bethesda, Md. (U.S. Navy photo by Kelley Stirling/Released)



IDAHO PUBLIC TELEVISION FEATURES BAYVIEW



BYRNE VISITS CARDEROCK



KELLEY VISITS LITTLE CREEK

Cultivating Our Workforce

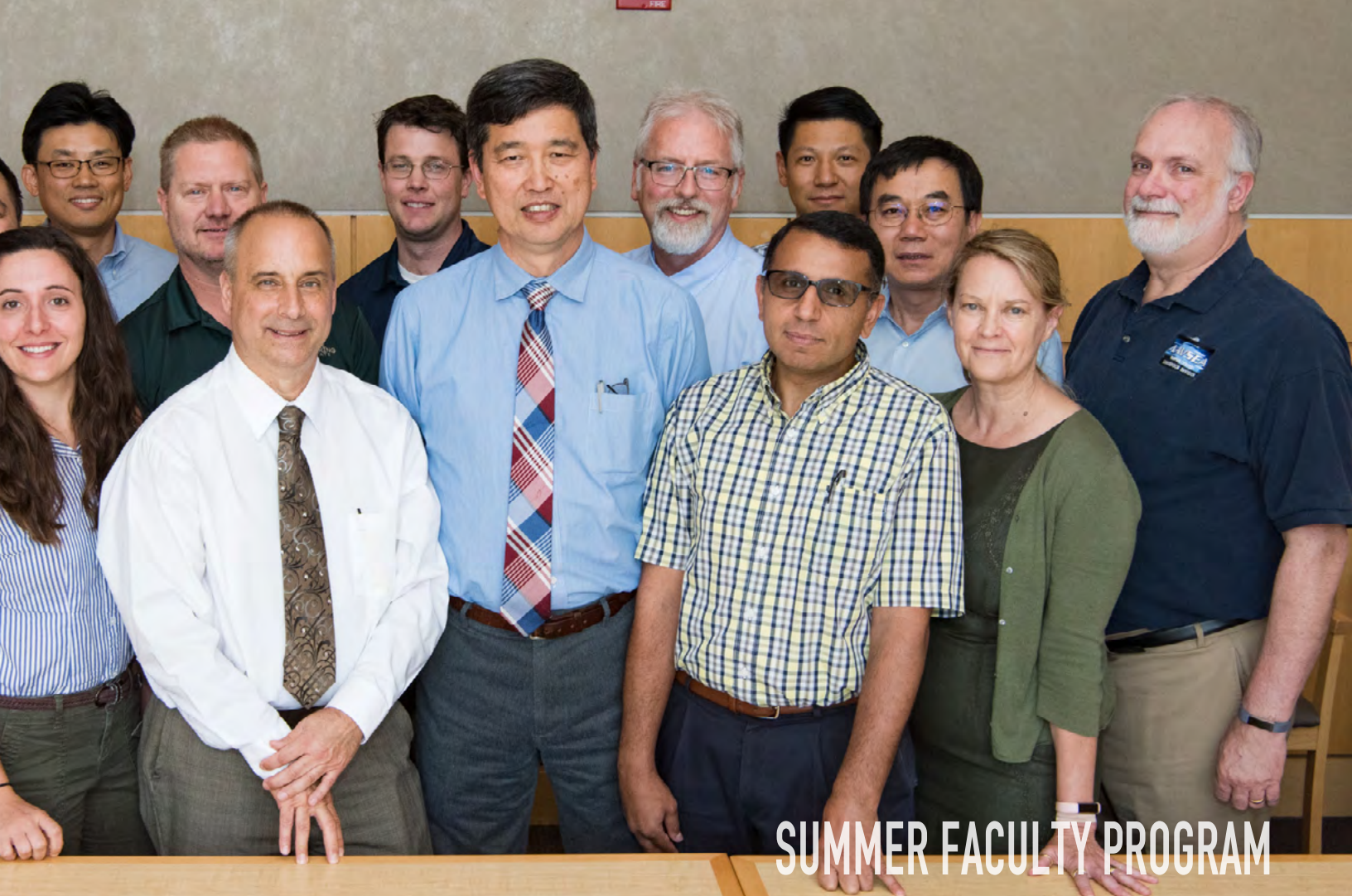
Right: Professors from the summer faculty program at NSWC Carderock Division meet with Carderock leadership on July 10, 2018. Pictured, from left, front row: Dr. Gabriela Petculescu from the University of Louisiana at Lafayette; Charlotte George, Carderock's summer intern coordinator; Larry Tarasek, Carderock's deputy technical director; Dr. Paul Shang, Carderock's acting technical director; Dr. George Youssef from San Diego State University; and Dr. Judy Conley from Carderock. Second row: Drazen Hadzalic from Carderock; Dr. Sang Lee from Carderock; Dr. Troy Topping from California State University, Sacramento; Jack Templeton, Carderock's chief technology officer; Dr. Xiaofeng Liu from San Diego State University; and Dr. Jack Price, Carderock's director of research. Back row: Dr. Woo Hyung Lee from the University of Central Florida; Dr. Jason Howison from The Citadel; and Dr. Jiajun Xu from the University of the District of Columbia. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, left: NSWC Carderock Division Commanding Officer Capt. Mark Vandroff

signs an Education Partnership Agreement with the University of Iowa, Feb. 26, 2018. Seated next to Vandroff is Dr. Paul Shang, acting technical director for Carderock. Back row, from left is Dave Ghatt, a patent attorney in Carderock's Office of Counsel; Dr. Thad Michael, a naval architect with Carderock's Propulsors Branch; and Dr. John Barkyoub, Carderock's director of strategic relations. (U.S. Navy photo by Monica McCoy/Released)

Bottom, right: Employees from NSWC Carderock Division attend the second Leadership in a Diverse Environment (LDE II) training event on Wednesday, Dec. 12, 2018, at the National Conference Center in Leesburg, Virginia. From left, Dorothy Bell, Mariejoy Waldron, Kathy Stanley, Cindy Chen, Emily Dress, Robert Evans, Erica Scates, Carderock Technical Director Larry Tarasek, Trisha Shields, Kirsten Green, Amanda Blumenthal, Ramone Pierce, Danielle Gerstner, Dianna Pleasants, Timothy Jackson and Tariq Al-Agba. (U.S. Navy photo by James Travassos/Released)





SUMMER FACULTY PROGRAM



LEADERSHIP IN A DIVERSE ENVIRONMENT

Cultivating Our Workforce

Right: Harvard Professor Dr. Mahzarin Banaji presents her leadership seminar, "Blindspot: Hidden Biases of Good People," to a crowd of employees at NSWC Carderock Division in West Bethesda, Md., Aug. 15, 2018. The seminar focused on identifying biases as normal and sometimes harmful, and allowed the attendees to self-reflect on how some biases may present themselves in the workplace, intentionally or otherwise. (U.S. Navy photo by Devin Pisner/Released)

Bottom, left: John Leadmon, director of submarine design and systems engineering for NAVSEA from 1995-2007, speaks about the history and the future of submarine design as part of the Rear Adm. David W. Taylor Naval Architecture Lecture Series at NSWC Carderock Division in West Bethesda, Md., March 8, 2018. (U.S. Navy photo by Jake Cirksema/Released)

Bottom, right: Bob Keane, former executive director for Surface Ship Design and Systems Engineering at the NAVSEA, speaks to engineers and naval architects, April 12, 2018, at NSWC Carderock Division, for the third in the series of Rear Adm. David W. Taylor naval architecture lectures. (U.S. Navy photo by Jake Cirksema/Released)



LEADMON SPEAKS AT CARDEROCK

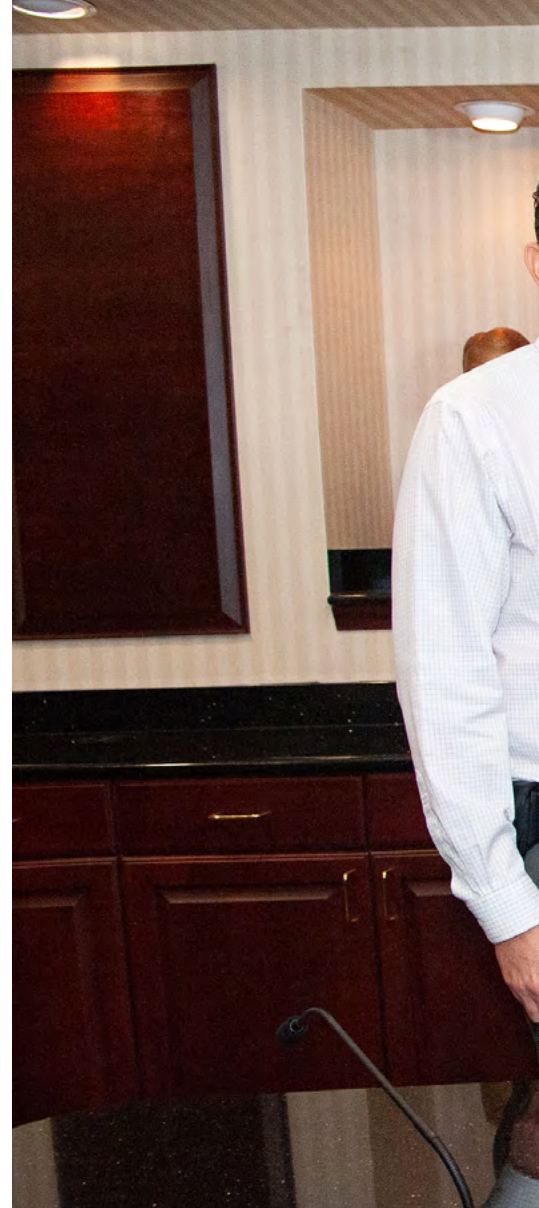


BANAJI PRESENTS AT CARDEROCK



KEANE SPEAKS AT CARDEROCK

Cultivating Our Workforce



Above: Larry Tarasek (seated), technical director for NSWC Carderock Division, signs the first technical excellence policy to better help Carderock employees and managers with project management, Oct. 12, 2018. With Tarasek are, from left, Dr. Chris Kent, chief engineer (CHENG) for the Naval Architecture and Engineering Department; Joan Shanahan, division quality director; and Lou Carl, Carderock's CHENG. (U.S. Navy photo by Nicholas Brezzell/Released)

Left: From left, Benjamin Testerman, Matthew Jeffries, Michael Britt-Crane, Manik Anand, Eric Silberg and Lauren Hanyok tour the Vehicle Assembly Building at Kennedy Space Center, June 11, 2018 in Cape Canaveral, Fla. (Courtesy photo provided)

Right: Retired Navy Capt. Paul Rinn speaks at NSWC Carderock Division, April 19, 2018, about his experience on USS Samuel B. Roberts (FFG 58) when the frigate hit an Iranian mine 30 years ago. (U.S. Navy photo by Justin Hodge/Released)



TECHNICAL EXCELLENCE POLICY



RINN SPEAKS AT CARDEROCK

Cultivating Our Workforce



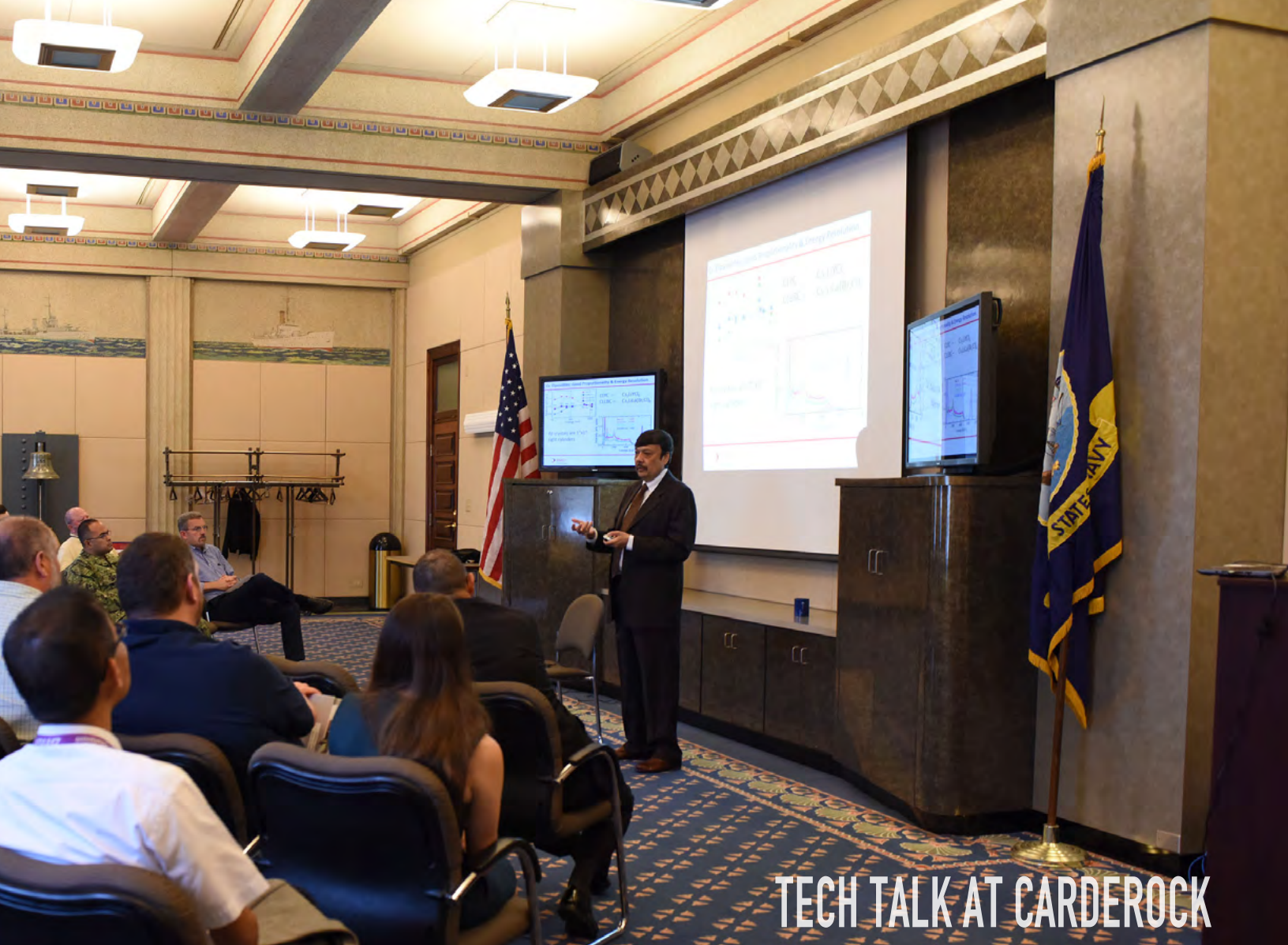
NR&DE COLLABORATION FORUM



Above: Dr. Kanai Shah, president of Radiation Monitoring Devices, Inc., speaks during a Tech Talk, June 4, 2018, at NSWC Carderock Division in West Bethesda, Md. (U.S. Navy photo by Kelley Stirling/Released)

Left: Jeff Hough, Carderock's distinguished engineer for ship design, leads a discussion on model-based systems engineering and set-based design during a Naval Research and Development Establishment collaboration forum, Aug. 1, 2018, at NSWC Carderock Division in West Bethesda, Md. (U.S. Navy photo by Kelley Stirling/Released)

Right: Employees look at posters during the 5th Naval Materials Community of Interest Materials Forum, April 24, 2018, at NSWC Carderock Division in West Bethesda, Md. The forum, held April 24-26, brought together representatives from NAVSEA (NAVSEA) Warfare Centers, NAVAIR, SPAWAR, NAVFAC, NRL and the USNA to discuss the current and future needs of naval systems and showcase important material technical contributions. (U.S. Navy photo by Jake Cirkseña/Released)



TECH TALK AT CARDEROCK



NAVAL MATERIALS COI FORUM

History and Heritage



NEW ELECTRONIC SIGN AT CARDEROCK



Above: NSWCC Carderock Division Commanding Officer Capt. Mark Vandroff signs a Voluntary Protection Programs (VPP) commitment letter pledging to continue to provide a safe work environment, free of recognized hazards, for all personnel at West Bethesda, Md., June 20, 2018. Front row, from left: Deputy Technical Director Larry Tarasek, Vandroff, Technical Director (acting) Dr. Paul Shang and Signature Measurement Technologies and Systems Division Head Mike Slater. Back row, from left: Corporate Operations Department Head Tamar Gallagher, Chief Technology Officer Jack Templeton, Carderock Division Counsel Neaclesa Anderson, Naval Architecture and Engineering Department Head Mike Brown, Materials and Manufacturing Technology Division Head Johnnie DeLoach, Chief of Staff Kathy Stanley, VPP Coordinator



VOLUNTARY PROTECTION PROGRAM

Wallace "Gator" Czapl, Human Resources Division Head Rita Terhaar, Environmental Branch Head Joe Barger and Comptroller Department Head Eric Stone. (U.S. Navy photo by Nicholas Brezzell/Released)

Left: The new electronic sign at the front gate of NSWC Carderock Division in West Bethesda, Md., Jan. 23, 2018. (U.S. Navy photo by James Contereras/Released)

Bottom, right: Robin Pole, Hero Dogs volunteer dog trainer with her dog Honor; Kathy Pellicci, Combined Federal Campaign lead and executive assistant to the technical director; Kelsey Garcia, Hero Dogs volunteer dog trainer pose at the CFC end-of-campaign charity fair Jan. 8, 2018, in West Bethesda, Md. (U.S. Navy photo by Jake Cirksema/Released)



COMBINED FEDERAL CAMPAIGN

History and Heritage

BLACK HISTORY MONTH

Top, left: Rear Adm. Jesse Wilson, commander, Naval Surface Force Atlantic, speaks during NSWC Carderock Division's Black History Month celebration, Feb. 13, 2018, in West Bethesda, Md. (U.S. Navy photo by Jake Cirksema/Released)

Bottom, left: Senior leaders within the Department of the Navy answer questions during the women in leadership panel discussion at the Leadership in a Diverse Environment training event, May 31, 2018, at NSWC Carderock Division in West Bethesda, Md. From left: Neaclesa Anderson, division counsel for Carderock; Susan Tomaiko, director for Undersea Systems Contracts Division at NAVSEA; Robin White, director for Surface Ship Design and Systems Engineering at NAVSEA; and Steffanie Easter, director, Navy Staff and senior chief of the naval operations. (U.S. Navy photo by Devin Pisner/Released)





WOMEN'S HISTORY MONTH

Top, right: Nicole Mason, a licensed attorney working for the Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), speaks about diversity, inclusion and women in the workforce to employees of NSWC Carderock Division, for the national Women's History Month event, March 14, 2018, in West Bethesda, Md. Mason serves as the equal employment opportunity officer and diversity program manager for NOAA's Office of Oceanic and Atmospheric Research. (U.S. Navy photo by Jake Cirkseña/Released)



WOMEN'S EQUALITY DAY

Bottom, right: NSWC Carderock Division hosts a Women's Equality Day in West Bethesda, Md., Aug. 21, 2018. Speaker Gaye Evans, deputy, Department of the Navy/Assistant for Administration, speaks to a group of Carderock employees about women in the workforce. New employee and Language Specialist Rebecca Knodel is pictured sitting in front of the podium. (U.S. Navy photo by Harry Friedman/Released)

History and Heritage

Right: Carderock employees plant trees and shrubs, April 19, 2018, at the west end of Building 4 in celebration of Earth Day at NSWC Carderock Division in West Bethesda, Md. From left, Joe Barger, Jennifer Pipe and Jim Kerr. (U.S. Navy photo by James Contreras/Released)

Bottom, left: Carderock employees eagerly await their turn to be served up a mountainous helping of ice cream outside the Maritime Technology Information Center during NSWC Carderock Division's first ice cream social of 2018 in West Bethesda, Maryland, June 14, 2018. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, right: Retired Army Master Sgt. Louis Celli Jr. (left) and Capt. Mark Vandroff, commanding officer of NSWC Carderock Division, carry a wreath, May 30, 2018, to lay in honor of the men and women who died in the line of service. Celli, who is currently the legislative director for the National Veterans Affairs and Rehabilitation Division, American Legion, was the guest speaker at the Memorial Day ceremony at Carderock's headquarters in West Bethesda, Md. (U.S. Navy photo by Devin Pisner/Released)



ICE CREAM SOCIAL



EARTH DAY



MEMORIAL DAY

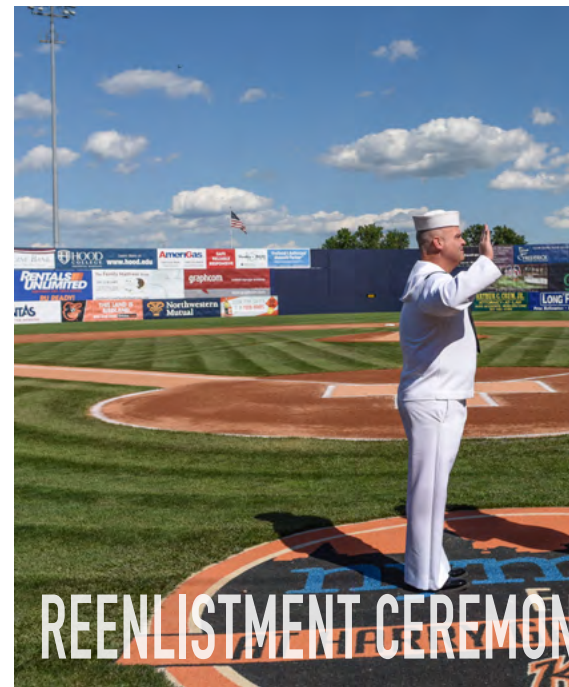
History and Heritage

Right: The Team Redundancy Team takes home the trophy for volleyball, Oct. 18, 2018. From left, bottom row: Brian LeCroy, Greg Gorman, Joey Ramsey (team co-captain), Carmen Morrow; top row: Eric Shields, Erica Scates, Amanda Blumenthal and Trisha Shields (team co-captain). (U.S. Navy photo by James Contreras/Released)

Bottom, left: Mike Phillips and Zelda Rappuhn participate in the first fun run of 2018, May 15. The fun runs are just one of several planned activities for the Carderock Fitness Challenge. (U.S. Navy photo by Jake Cirkseña/Released)

Bottom, center: Capt. Mark Vandroff, commanding officer, NSWC conducts a reenlistment ceremony for Master-at-Arms First Class Lynn Phillips before a Frederick Keys baseball game in Frederick, Md., June 15, 2018. The minor league team's name is tied to the nearby burial place of Francis Scott Key, composer of the Star Spangled Banner. (U.S. Navy photo by Monica McCoy/Released)

Bottom, right: Capt. Mark Vandroff (left), commanding officer of NSWC Carderock Division affirms Lt. Carlos Argueta's oath of office just before Argueta is promoted to lieutenant commander during a ceremony, June 1, 2018, at Carderock's West Bethesda, Md., headquarters. Argueta is Carderock's acting deputy security director. (U.S. Navy photo by Harry Friedman/Released)





VOLLEYBALL CHAMPIONS



PROMOTION CEREMONY

History and Heritage

Right: Commanding Officer Capt. Mark Vandroff and NSWC Carderock Division employees celebrate the Navy's 243rd birthday two days early on Oct. 11, 2018, with a traditional cake-cutting ceremony. Vandroff chose the civilians and Sailors at the ceremony that have been at Carderock Division and the shortest and longest amount of time to help him cut the cake. From left, Vandroff; Matt Caspero and Mitchell Poe, civilians who started the same day less than two months ago; Steve Tursky who has 34 years of service at Carderock Division; Petty Officer Nichole Wagner; and Chief Petty Officer Jason Neeley. (U.S. Navy photo by Devin Pisner/Released)

Bottom, left: NSWC Carderock Division leadership kicks off the collaborative risk assessment process with the CNO's Mission Assurance Assessment (CNO-MAA) team, May 21, 2018. The team was at Carderock, May 21-25, for the first phase of a two-phase visit designed to identify mission-essential tasks and functions, critical facilities, critical assets and mission-critical dependencies. The CNO-MAA is intended to support commands in validating risk to mission concerns and providing advocacy, as appropriate, for priority risk management efforts and improvement of the command's overall risk posture. (U.S. Navy photo by Monica McCoy/Released)

Bottom, right: Enlisted military members from Walter Reed Military Medical Center in Bethesda, Md., visited NSWC Carderock Division, May 10, 2018, as part of the Sailor's 360 Heritage Tour to learn about the different capabilities of the Navy. (U.S. Navy photo by James Contreras/Released)



CNO'S MISSION ASSURANCE ASSESSMENT



NAVY'S 243RD BIRTHDAY



SAILOR'S 360 HERITAGE TOUR

History and Heritage

Right: Fred Flatow shows the audience a Torah Scroll he found as a child in a burned-down synagogue. Flatow gave a detailed account of his memories as a Jewish boy growing up in East Prussia at the time of the Nazi regime during the NSWC Carderock Division Holocaust Remembrance event in West Bethesda, Md., April, 24, 2018. Flatow was joined by his wife, Ursel. (U.S. Navy photo by Jake Cirksema/Released)

Bottom, left: Joe Aukward, a retired disability program manager for NAVSEA, discusses the importance of disabilities awareness at the National Disability Employment Awareness month celebration, Oct. 11, 2018. (U.S. Navy photo by Harry Friedman/Released)

Bottom, right: Ana Valentin, National Oceanic and Atmospheric Administration (NOAA) enterprise service program manager, shares her journey to the United States through education with Carderock employees at the Hispanic Heritage month celebration, Oct. 11, 2018. (U.S. Navy photo by Harry Friedman/Released)



NATIONAL DISABILITY EMPLOYMENT AWARENES MONTH



HOLOCAUST REMEMBRANCE



HISPANIC HERITAGE MONTH

History and Heritage



COMBINED FEDERAL CAMPAIGN

Above, right: NSWC Carderock Division Commanding Officer Capt. Mark Vandroff poses with the division's Combined Federal Campaign (CFC) co-coordinator Kathy Pellicci and CFC loaned executive Bob Jones (left) and NAVSEA campaign manager Ernesto Jopanda (right) during the CFC tailgate event to raise awareness for the campaign Oct. 25, 2018, in West Bethesda, Md. (U.S. Navy photo by Harry Friedman/Released)

Above: (from left) Ray Sutton, Department of the Navy charitable campaign manager; Bob Jones, Combined Federal Campaign (CFC) loaned executive; Kathy Stanley, Carderock Division chief of staff; Amanda Ewen, Carderock Division CFC co-coordinator; Kathy Pellicci, Carderock Division CFC co-coordinator; and Ernesto Jopanda; NAVSEA campaign manager, pose

at the photo booth during the CFC tailgate event in West Bethesda, Md., Oct. 25, 2018. (U.S. Navy photo by Harry Friedman/Released)

Bottom, left: NSWC Carderock Division employees enjoy the potluck-style tailgate event raising awareness for the Combined Federal Campaign, Oct. 25, 2018, in West Bethesda, Md. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, right: Andy Loh, left, and Michael Hall attend the Combined Federal Campaign tailgate event at NSWC Carderock Division in West Bethesda, Md., Oct. 25, 2018, wearing their favorite sports team jerseys. (U.S. Navy photo by Nicholas Brezzell/Released)





Cultivating Our Future Workforce



Left: Boy Scouts and leaders from Troop No. 1003 of the Alaska Totem District from Ketchikan, Alaska, tour Carderock Division's Southeast Alaska Acoustic Measurement Facility, Feb. 16, 2018. (Courtesy photo provided)

Above: Chief of Naval Research Rear Adm. David Hahn (right) speaks with student researchers from Virginia Tech during the meeting of the Naval Engineering Education Consortium for the mid-Atlantic region, April 11, 2018, at NSWC Carderock Division in West Bethesda, Md. (U.S. Navy photo by Jake Cirksema/Released)

Bottom, right: Employees and Interns from NSWC Carderock Division tour the USS George H.W. Bush during a "Meet the Fleet" trip to Norfolk, June 19, 2018. Meet the Fleet is a daylong trip organized for new employees and interns to gain firsthand knowledge of naval ships and submarines, and to meet the active-duty service members who utilize the ships' capabilities for the overall national security mission. (U.S. Navy photo by Nicholas Brezzell/Released)



NAVAL ENGINEERING EDUCATION CONSORTIUM



MEET THE FLEET

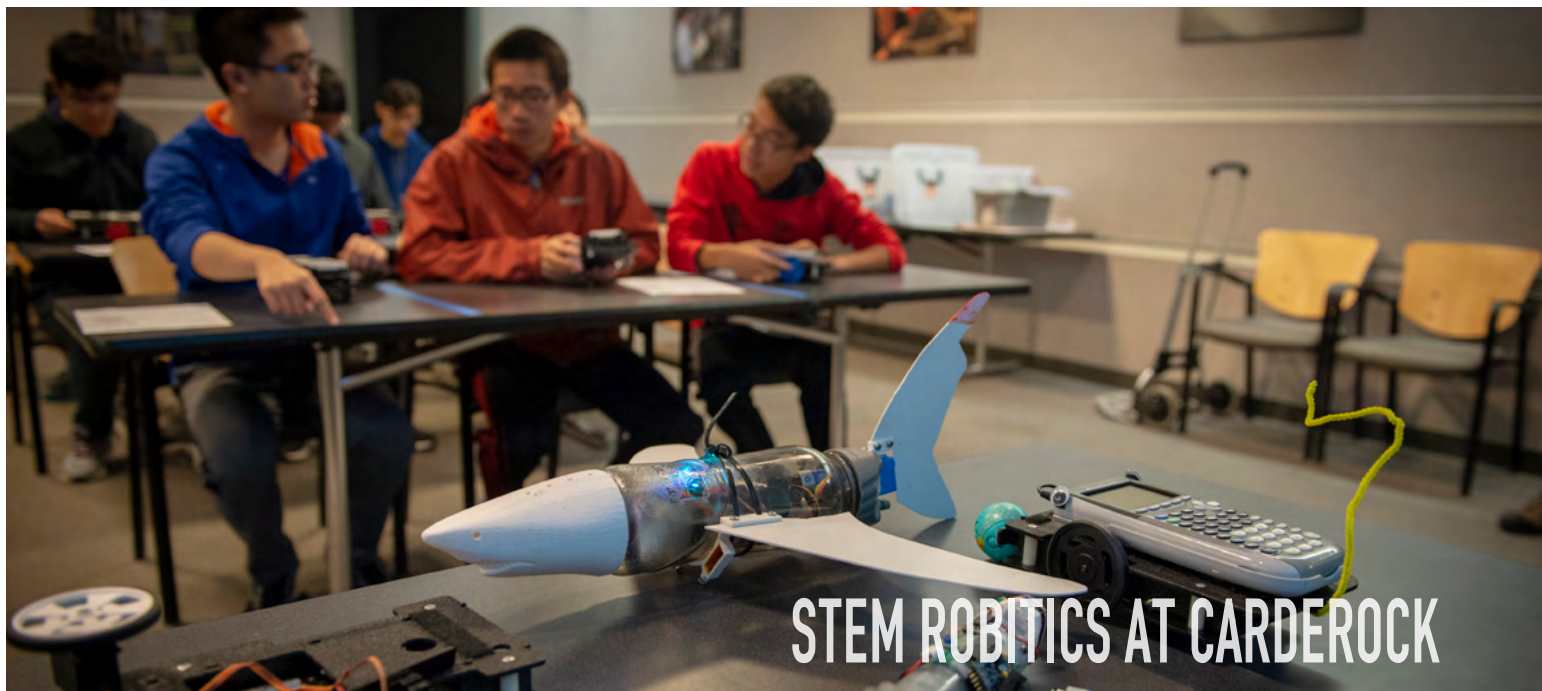
Cultivating Our Future Workforce

Right: Students work to solve timed math problems during the countdown round portion of the Carderock Math Contest, April 13, 2018, at NSWC Carderock Division in West Bethesda, Md. (U.S. Navy photo by Jake Cirksema/Released)

Bottom, left: Nelson Dellis, USA Memory champion and guest speaker for the Carderock Math Contest, memorizes the 30 numbers a student gives before reciting them forward and backward during his presentation at NSWC Carderock Division in West Bethesda, Md. (U.S. Navy photo by Monica McCoy/Released)

Bottom, right: Middle school students participate in science, technology, engineering and math (STEM) programs learning how to program and operate different robotics at NSWC Carderock Division in West Bethesda, Md., Nov. 9, 2018. (U.S. Navy photo by Monica McCoy/Released)





STEM ROBOTICS AT CARDEROCK

Cultivating Our Future Workforce



NEEC STUDENTS VISIT OAK RIDGE



HUMAN-CENTERED D

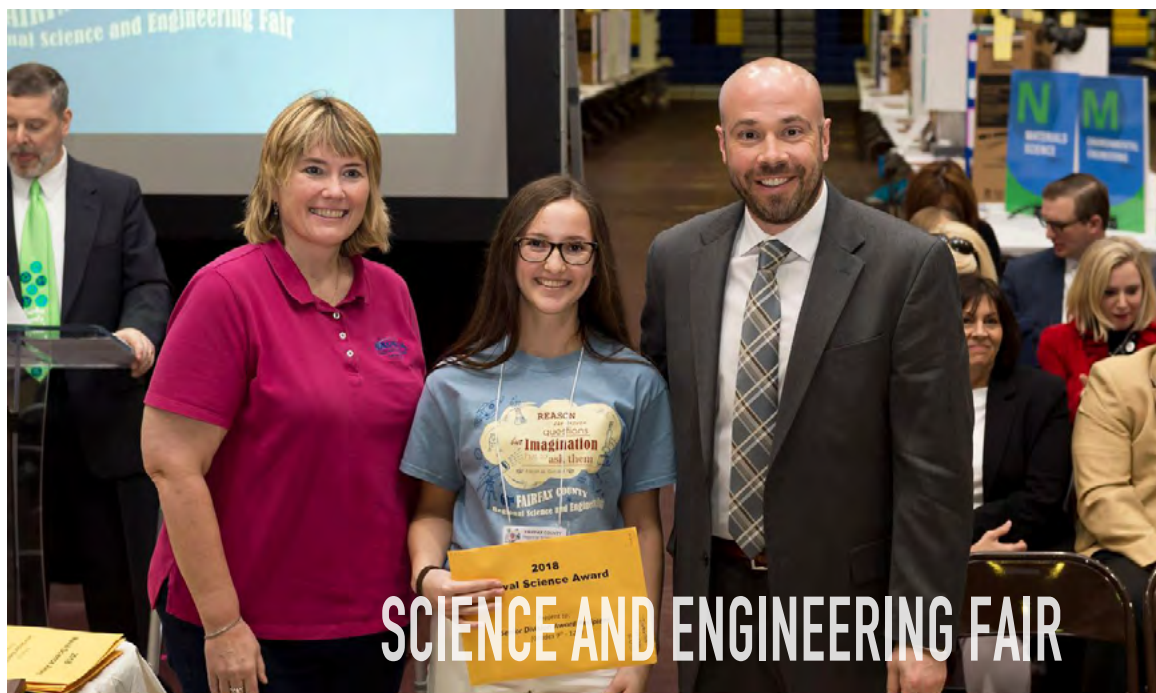
Left: Dr. Maureen Foley (right) and Brendon Arnold (center), both from the Integrated Manufacturing and Project Management Office at NSWC Carderock Division, stand with William Ferrell, a Ph.D. candidate from the University of Tennessee, Knoxville (UTK), in front of Big-Area Additive Manufacturing technology at Oak Ridge National Laboratory, in Oak Ridge, Tenn., during a visit, Sept. 13, 2018. UTK's NEEC students collaborate with Oak Ridge National Laboratory to manufacture test articles and further develop their knowledge of additive manufacturing. (Courtesy photo provided)

Above: Children from Hawassa, Ethiopia, participate in a human-centered design process, March 10, 2018, to determine the ultimate soccer academy they hope to build. Yared Amanuel, originally from Ethiopia and an engineer at



NSWC Carderock Division, taught the children how to use human-centered design to help them solve problems while he was there on personal travel in March. (Courtesy photo provided)

Right: Dr. Maureen Foley (left), a materials engineer at NSWC Carderock Division, issues a prize on behalf of the ONR Naval Science Awards Program during the awards ceremony for the 63rd Annual Fairfax County Regional Science and Engineering Fair held, March 18, 2018, at Robinson Secondary School in Fairfax, Va. The recipient is Isabella Salinas (middle), a high-schools student from Robinson, for her project, "Modeling the Effect of an Artificial Pancreas on Blood Sugar Control." With Salinas is Travis Hess, an assistant principal at Robinson. (Courtesy photo provided)



Cultivating Our Future Workforce

Right: Johnny Ruffa (left), from the Ship Structures Branch at NSWC Carderock Division; Will Ferrell (center), a doctoral student at University of Tennessee, Knoxville; and Dan Hart (right), an aerospace engineer from Carderock's Advanced Materials and Structures Branch discuss the vacuum-assisted resin transfer molding process for additive manufacturing in the Composites Lab, March 15, 2018, at Carderock's West Bethesda, Md., headquarters. (U.S. Navy photo by Devin Pisner/Released)

Bottom, left: Midshipmen from the United States Naval Academy listen as Capt. Mark Vandroff, commanding officer of NSWC Carderock Division and a 1989 USNA graduate, explains the operation of Carderock's Maneuvering and Seakeeping Basin, Nov. 6, 2018. (U.S. Navy photo by Nicholas Brezzell/Released)

Bottom, right: NSWC Carderock Division Commanding Officer Capt. Mark Vandroff (center) and Technical Director (acting) Dr. Paul Shang (left) sign an education partnership agreement with Dr. J. Scott Cameron (right) president of the National Intelligence University, in West Bethesda, Md., June 11, 2018. (Seated from left) Shang, Vandroff and Cameron. (Standing from left) Carderock Marine and Aviation Division Head Steve Ebner, Carderock Patent Attorney Dave Ghatt, Carderock Director of Strategic Relations Dr. John Barkyoub, NIU Professor Dr. Peter Leitner, NIU Dean of the School of Science and Technology Intelligence Dr. Brian Holmes, NIU faculty member MSG Angel Morales, Carderock Electrical Engineer Dr. Peter Cho, Naval Architecture and Engineering Department Head Mike Brown and Carderock Director of Technology Transfer Dr. Joseph Teter. (U.S. Navy photo by Nicholas Brezzell/Released)



MIDSHIPMEN VISIT CARDEROCK



UNIVERSITY OF TENNESSEE AT CARDEROCK



EDUCATION PARTNERSHIP AGREEMENT

Cultivating Our Future Workforce



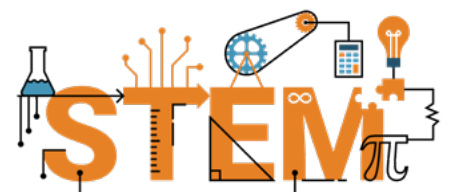
CARDEROCK AT FLEET WEEK



Left: NSWC Carderock Division oceanographer Jeff Campana (right), and U.S. Navy Sailors demonstrate STEM educational tools SeaPerch and SeaGlide to children attending this year's Maryland Fleet Week festival, Oct. 5, 2018, in the Baltimore Inner Harbor. (U.S. Navy photo by Charlotte George/Released)

Above: NSWC Carderock Division oceanographer Jeff Campana explains calculator-controlled robots to Navy Junior Reserve Officers Training Corps students at Baltimore's Mergenthaler Vocational Technical Senior High School, Oct. 4, 2018, during Maryland Fleet Week. (U.S. Navy photo by Martin Sheehan/Released)

Right: Students from local schools participate in the LEGO Robotics challenge, April 27, 2018, at NSWC Carderock Division in West Bethesda, Md. Carderock hosts the LEGO Robotics challenge for the region each year as a science, technology, engineering and math (STEM) outreach event. (U.S. Navy photo by Jake Cirkseña/Released)

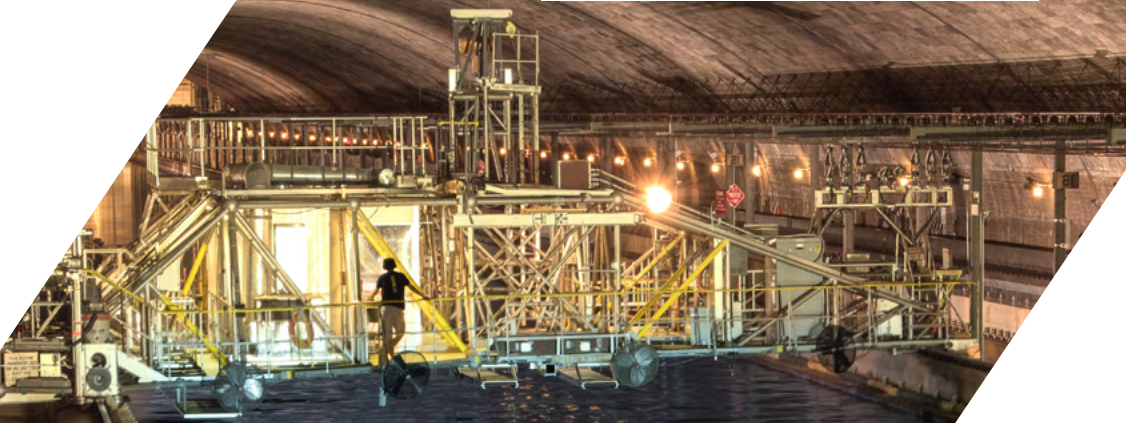




CALCULATOR-CONTROLLED ROBOTS



LEGO ROBOTICS CHALLENGE



Naval Surface Warfare Center,
Carderock Division
9500 MacArthur Blvd.
West Bethesda, MD 20817-5700
www.navsea.navy.mil/Home/WarfareCenters/NSWCCarderock