

**UNITED STATES NAVAL ACADEMY
STEM CENTER FOR EDUCATION AND OUTREACH**



www.usna.edu/stem
usnastem@usna.edu



Fall 2023



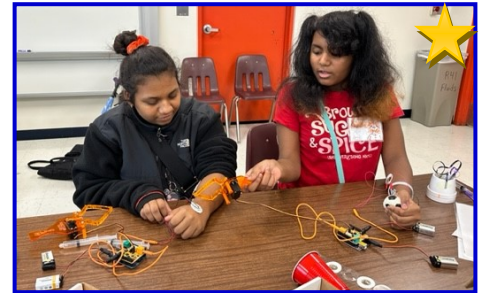
SET SAIL STEM Educator Training

USNA Faculty and Midshipmen provided in-person professional development to 100 K-12 educators in topic areas including Health Tech, Computer Science, Optics, Engineering Design, and more. Educators received training, curriculum, and supplies to implement hands-on lessons in the classroom. This twice-yearly program is sponsored by the Office of Naval Research (ONR), DoD STEM, and the Naval Academy Foundation, with generous support from Northrop Grumman, and Dr. Ernst Volgenau.



STEM On Deck

Three STEM On Deck events held at USNA reached over 100 high school students from Trinity High in Chicago, 100 Black Men/Project Success in Atlanta, and Wayne State Upward Bound in Detroit. Students visited USNA and got hands-on experience with Robotics, Aerospace, and Bioterrorism modules. In coordination with USNA Admissions, students were taught in state-of-the-art facilities, took a campus tour, and had an information brief. Many thanks to LCDR Diallo Wallace and Professor Scott Davids.



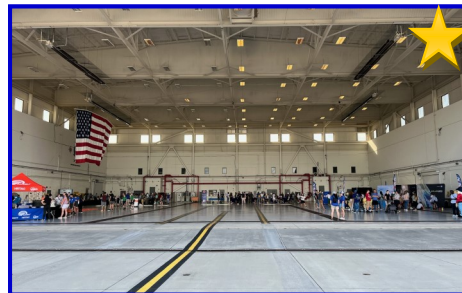
Middle School Girls STEM Day

Over 200 Middle School girls attended this day-long "Robotics & Coding" event to foster interest in STEM through hands-on activities. USNA midshipmen led modules in topic areas including Webpage Design, Sphero, Ozobot and EV3 Robotics, Arduino, Machine Learning, Bionic Hand, Soldering, and more. This program is offered each semester through sponsorship from ONR, Naval Academy Foundation, DoD STEM, Northrop Grumman, and Dr. Ernst Volgenau.



Baltimore County Professional Development Day

High School teachers from Baltimore County Public Schools attended modules run by the USNA STEM Center as part of the Baltimore County Public Schools Professional Development Day at Parkville High School. Topic areas included Logic, Structures, Simple Machines and Engineering Design, and Circuits. Curriculum and strategies were provided to enhance project-based learning in the classroom. This training event by the school district is provided for high school teachers to prepare them at the start of the academic year.



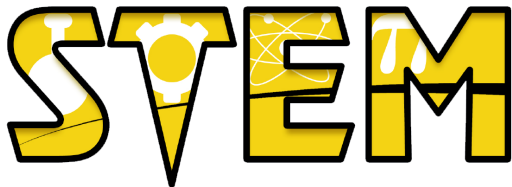
Oceana Air Show Outdoor STEM Laboratory

The USNA STEM Center presented a booth at the 2023 NAS Oceana Air Show in Virginia Beach, VA, an event sponsored by NAS Oceana, providing hands-on activities to engage and inspire students to pursue STEM careers. The Student Day brought over 6,000 fifth grade students from Virginia Beach and Chesapeake Public Schools to the event, while the public day drew nearly 150,000. STEM Center staff Kris Endy, Antje Hlavaty, ENS John Trombetta, six Midshipman, and several U.S. Naval Reservists made this multi-day event possible.



High School Flight Day

USNA faculty and staff, Navy Reservists, and Midshipmen provided hands-on flight-related activities for the 2nd annual USNA Flight Day. High school students from across the U.S. attended the day-long event with topics including Rockets, Gliders, and Rotorcraft. Many thanks to the Aero Lab for use of their spaces, and to LCDR Diallo Wallace, Professor Scott Davids, and Professor Greg Eggleston for making the day possible. This program was offered through sponsorship from ONR, Naval Academy Foundation, DoD STEM, Northrop Grumman, and Dr. Ernst Volgenau.



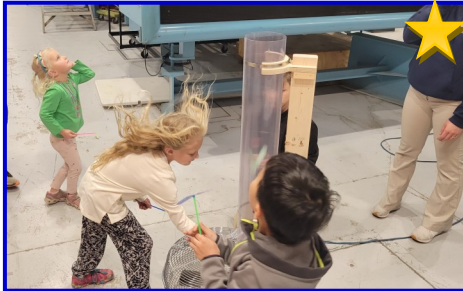
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USNA Family STEM Night

150 people attended the annual USNA Faculty and Staff Family STEM night, with learning stations led by 23 Midshipmen. A great evening was had by all, as attendees had the opportunity to explore STEM concepts with hands-on projects in the areas of Robotics, Materials, Buoyancy, and Flight. Children of all ages participated in engaging activities while visiting the Engineering lab spaces. Many thanks to the Hydrodynamics and Aerospace Labs for use of their spaces.



San Diego Fleet Week

STEM Center Instructor Antje Hlavaty led a team of six Midshipmen, along with Reservists and Blue & Gold Officers at Fleet Week in San Diego. This interactive booth was presented by the USNA STEM Center and the Office of Admissions. Nearly 20,000 people attended the five-day event held at Broadway Pier in San Diego which included Student STEM Days and Innovation Days. This yearly public education event was first held in San Diego in 1935.



Maryland MESA STEM Days

USNA faculty, staff, and midshipmen provided hands-on activities in conjunction with the Maryland Mathematics, Engineering, Science Achievement (MESA) program at the Kossiakoff Center at Johns Hopkins University Applied Physics Laboratory in Laurel, MD. Over 300 elementary students from Maryland Public Schools attended over two days, exploring topics including Flight, Cryptography, and Robotics. This program occurs every Fall, and all modules are taught entirely by USNA Midshipmen.



Best Practices in STEM Outreach DoD Workshop

Over fifty DoD and non-DoD personnel from commands and affiliated organizations across the U.S. attended this day-long training which included topics in Biofuels, Motors & Turbines, Robotics & Coding, Machine Learning, and a Sea-Air-Space Fair. Sponsored by DoD STEM, ONR, and the Naval Academy Foundation, this event is designed for newcomers to STEM Outreach, and for those who wish to enhance current programs at their commands. Organizations included Navy and Army commands, Sea Cadets, the U.S. Patent & Trademark Office, and more.



National Council of Teachers of Mathematics Annual Conference

USNA STEM Center members Director CAPT Joseph McGettigan (RET), Associate Director Dr. Sarah Durkin, Instructors LCDR Ray Guethler (RET) and Kristine Endy presented an Exhibitor booth at the NCTM Annual Conference at the Convention Center in Washington D.C. Teachers from across the country had the opportunity to learn about Navy-relevant hands-on activities in math and science. Participation was made possible by support from the ONR and DoD STEM.



STEM Underway

In collaboration with the USNA Office of Admissions, Midshipmen traveled to cities across the U.S. to promote interest in and awareness of STEM subjects and opportunities at the U.S. Naval Academy. Midshipmen led instruction for middle and high school student groups in hands-on activities developed by the STEM Center. Naval-relevant topics included Robotics, Cryptography, Buoyancy, Electrochemistry, and Flight. Midshipmen reached nearly 500 students in the Fall semester when they traveled to Pascagoula, MS, Dallas, TX, San Diego, CA, and Detroit, MI.

THANK YOU for your generous support and ongoing acknowledgement of the positive impact these programs have on our nation's students and educators.



Volgenau Chair for Education and Outreach



UPCOMING EVENTS: Spring 2024

Jan	<ul style="list-style-type: none"> • NAPS STEM Days, USNA, Jan 18 & 23 • STEM Underway, Memphis, TN, Jan 25-27 • FIRST Robotics at JHU-APL, Laurel, MD, Jan 27 • High School Biotech Day, USNA, Jan 27
Feb	<ul style="list-style-type: none"> • Army Navy STEM Day, USNA, Feb 10 • STEM on Deck Vertex Academies NYC, USNA, Feb 13 • STEM on Deck Building STEPS Baltimore, USNA, Feb 20 • SET Sail STEM Educator Training, USNA, Feb 24 • Astronaut Convocation & High School Girls Space Day, USNA, Feb 29
Mar	<ul style="list-style-type: none"> • Middle School Girls Only STEM Day, USNA, Mar 2 • San Diego Science & Engineering Festival Expo, San Diego, CA, Mar 2 • STEM Underway, St. Louis, MO, Mar 12-16
Apr	<ul style="list-style-type: none"> • Maryland Regional SeaPerch Challenge, USNA, Apr 6 • Navy League Sea Air Space Expo, National Harbor, MD, Apr 7 • Best Practices in STEM Outreach DoD Workshop, San Diego, CA, Apr 16-17 • National Eagle Scouts Association (NESA) STEM Jamboree, USNA, Apr 20 • Sea Air & Land (SeAL) Challenge, PA, Apr 25
May	<ul style="list-style-type: none"> • Junior Science & Humanities Symposium (JSHS), Albuquerque, NM, May 1-4 • STEM on Deck, Men of Honor, USNA, May 4 • NYC Fleet Week, New York, NY, May 25-27

* Schedule subject to change