

MISSION IMPACT REPORT

TAKEAWAYS

MARCH 2021

- Immediate Impact: 276 March graduates returned prepared for the contemporary challenges ahead.
- Future Advantage: NPS student Capstone Projects focused, enhanced and accelerated capability.
- Enduring Leadership: The intellectual capital of defense-focused faculty enhanced student solutions.

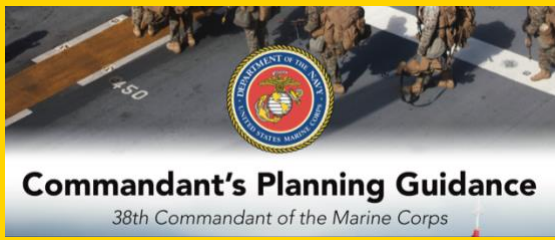


Objective: Readiness (R5)

Two student Capstone Project teams in [Systems Engineering](#) will address:

- 1) Viability of alternative launch methods for hypersonic missiles for existing surface ships.
- 2) Increased demands on the Fleet associated with at sea maintenance, re-arm, and re-supply of unmanned systems in support of Distributed Maritime Operations.

IMPACT: Each supports [NPS Naval Research Program](#) efforts and will deliver in Sept.



Priority: Education & Training

Major Larry Wigington, USMC is using AI/ML to glean information through observation of IAS systems supporting manned operations. Using positional data and movement of a networked system of UAVs, Wigington's research was able to position the covert ground forces they were supporting with 95% confidence.

IMPACT: Red teaming our own IAS, we learn how to introduce randomness purposely to enhance operational security. Major Wigington will present at the [May NPS BIX](#).



CAPABILITY CATALYST: NPS delivered 276 graduates and their applied research/solutions in the Winter Quarter class March graduation: 108 U.S. Navy graduates, 35 U.S. Marine Corps, 12 U.S. Army, 20 U.S. Air Force, 91 DOD civilian, 1 U.S. Space Force, 1 U.S. Navy Reservist and 8 international graduates representing 6 countries.

Graduate's Capstone Project Lauded by DESRON 40

WHO: CDS-40, Captain Thomas E. Meyers sent a letter of appreciation to NPS citing LCDR Jermaine Armstrong and fellow Master of Systems Analysis students LCDR Joshua Meyers, and LT David Mann for their innovative work.

WHAT: The students solved a 4th Fleet logistics problem predicting and tracking PPE usage for Enhanced Counternarcotic (ECN) missions during COVID-19. Their capstone project was recognized at [the March graduation](#) as the winner of the JHU-APL Award for Excellence in Systems Analysis.

HOW: Working with data collected from over 30 ships deployed into the ECN AOR since the start of the global COVID-19 pandemic, this project team developed an analysis tool for assessing PPE consumption rates, planning pre-deployment PPE supply levels, and monitoring adequacy of remaining supply levels to sustain ECN operations. In addition, the project team developed a new data collection tool with built-in consistency and error-checking features to improve data collection accuracy for ongoing PPE stock level monitoring and forecasting, and was implemented in all ships deployed for ECN operations.

IMPACT: Allows 4th Fleet Command-and-Control Element to be forward looking and anticipate future demand--thus keeping forces on station longer without any gap in capacity and capability.



MISSION UPDATES:



DEFENSE EDUCATION

- **Wargaming:** In collaboration with the Australian Defense Force (ADF), and NPS' [Naval Warfare Studies Institute](#), students in the [NPS resident wargaming](#) course are evaluating ADF interoperability with the U.S. Marine Corps, Marine Littoral Regiment in future Great Power Competition scenarios. **IMPACT:** Supports Force Design solutions and outcomes.
- **Manpower:** Students in the [Manpower Systems Analysis](#) curriculum presented their thesis to CNP VADM Nowell, BGen Woodworth, SES Dr Mike Strobl, SES Dave Menzen and RADM Browne. CNP requested follow-ups, additional theses and more time with students next event. **IMPACT:** CNP staff scheduled findings/policy follow-on discussions and new studies.
- **Accreditation:** [NPS reaccredited 10 years](#), the maximum achievable. [WSCUC](#) conducted the assessment (also accredits Stanford and Cal Tech). NPS was selected as one of eight institutions to pioneer the Thematic Pathway for Reaffirmation. **IMPACT:** Strong certification indicates high-quality education/research outcomes, attracts talented faculty and partners.



APPLIED RESEARCH

- **Counter Swarm:** Electronic Systems Engineering graduate ENS Zachary Johnson's studies/research was selected for publishing in the peer-reviewed IEEE journal Access: "[Adaptive Beamsteering Cognitive Radar with Integrated Search-and-Track of Swarm Targets](#)" March 29, 2021: Z. W. Johnson and R. Romero. **IMPACT:** DoN needs Counter Unmanned Aircraft Systems (C-UAS) capability and this research will increase efficiency/effectiveness to locate/track target swarms.
- **COVID-19:** Major Dan Finkenstadt, alumnus and Assistant Professor in the Graduate School of Defense Management, has worked extensively on COVID-19 [supply chain research](#), published in [Milbank Quarterly](#) and [Harvard Business Review](#), contributed to the Joint Acquisition Task Force, FEMA, DHS, the Strategic National Stockpile and legislative proposals. **IMPACT:** Enhanced defense and national COVID-19 recovery efforts and future prevention measures.
- **MURI:** NPS will lead one of 25 [FY21 DoD Multi University Research Initiatives](#) (MURI). Professor Jamie MacMahan Associate Professor in the Oceanography Department is lead investigator for the topic "[Littoral Ocean Dynamics off Rocky Coasts and Shorelines](#)" with six other universities. **IMPACT:** Results from the \$7.5M five-year grant will enable greater predication capability thereby expanding operational maneuver space for Naval forces in the littorals.



ENABLING ENGAGEMENTS

- **MOU:** NPS and Lawrence Livermore National Laboratory (LLNL) [established a cooperative agreement](#) to advance the academic and scientific capabilities of the two institutions. **IMPACT:** Provides a framework for NPS faculty and student research collaboration with LLNL and reciprocal involvement of LLNL staff in NPS research and academic activities.
- **Tech Bridge:** Talent Education and Assessment Marketplace (TEAM) pilot sponsored by the [National Artificial Intelligence Institute](#) with NavalX will develop a digital federal talent marketplace and training certification program focused initially on AI/ML. [NPS' C2 Tech Bridge](#) will lead the interagency approach (VA, ODNI, GSA, DoE, HHS) and the productization of CHUNK Learning with NPS, partner universities and industry. **IMPACT:** Improved management/retention of critical technology talent.
- **CRADA:** A new Cooperative Research and Development Agreement ([CRADA](#)) [between NPS with BNNano](#) provides access to revolutionary Boron Nitride Nanotubes with high thermal conductivity, electrical resistivity and high thermal stability, strength and stiffness. **IMPACT:** Applications include electric insulation, fire retardants, radiation shielding, metal lightening, and corrosion resistance to increase capability and readiness of naval systems.



SUPPORTING UPDATES:



GRADUATES IN ACTION

- [VADM Samuel J. Paparo will promote to Admiral](#), and takeover as commander, U.S. Pacific Fleet, Pearl Harbor, Hawaii, earned a Master of Science in Systems Analysis from NPS.
- [Michael López-Alegría](#) is currently the Vice President of Business Development for Axiom Space, was selected to command the crew of [Ax-1, the first fully private orbital space mission](#) in human history. López-Alegría completed his Masters in Aeronautical Engineering and designation as test pilot after a year of study at NPS and [Naval Test Pilot School](#).
- Admiral Almier Garnier Santos, 1993 NPS graduate and NPS Distinguished Alumnus since 2014, was [promoted to be Chief of Naval Operations of the Brazilian Navy](#)
- MGEN Ariel R Caculitan, '05 NPS graduate was appointed the new [Commandant of the Philippine Marine Corps](#)



NPS IN THE NEWS ([More News](#))

- [“Xerox and NPS Announce Collaboration to Advance Solutions with 3D Printing Research”](#)
- [“Navy Unveils Updated Plan to Help Ship Watchstanders Get Better Sleep”](#)
- [“Naval Postgraduate School To Study Surprise Climate Issues In \\$2.4M Award”](#)
- [“A Unique Take on NPS: Important Then, Critical Today”](#)
- [“Panetta Offers Beltway Perspective on Budget Policy During Guest Lecture”](#)



IMPACTFUL EVENTS ([More Events](#))

- **HELD:**
 - SECNAV Guest Lectures: 1) NPS distinguished alumnus retired U.S. Navy Adm. Cecil D. Haney, former Commander, U.S. Strategic Command, spoke virtually in January and engaged in student-led Q&A on the topic of [“Great Power Competition in the Cognitive Age”](#) followed by; 2) Nobel Prize recipient Dr. William Phillips, a pioneer of atomic timekeeping used by the Navy, spoke in February on [“Quantum Reform of the Metric System”](#) and how the frontiers of metrology are important to the Navy (see also [“Seapower Conversations on Quantum”](#))
 - Visit: [Sgt. Maj. of the U.S. Marine Corps Troy E. Black](#) explored options and possibilities with faculty and students on 9 March seeking ways to provide more educational opportunities for senior enlisted.
- **UPCOMING:**
 - 7-8 April: Visit by Navy CIO Aaron Wies and Chris Cleary, Principal Cyber Advisor
 - 12 April: Visit by Chief of Naval Research, RADM Lorin Selby
 - 13 April: SECNAV Guest Lecture -- VADM Jon A. Hill, 11th Director of the [Missile Defense Agency](#) will speak on the topic of “Missile Defense and Technology Warriors.” Students from the [Meyer Scholar program](#) will lead Q&A.
 - 20-22 April: The [Naval Research Program](#) (NRP) will host a virtual Naval Research Working Group April 20-22, 2021. This activity is an essential to the success of the NPS NRP by aligning [research sponsors](#) requests from the Fleet and proposals to DoN priorities. Funding is limited, requests are often 4x more than what is selected.
 - 03-05 May: Visit by OPNAV N3/N5 VADM Phillip Sawyer
 - 11-12 May: 18th [Annual Acquisition Research Symposium](#).