

Staying a Step Ahead: NPS' Warfare Innovation Continuum Delivers Fleet-Focused Solutions

The final report of the year-long Warfare Innovation Continuum (WIC) at Naval Postgraduate School (NPS) focused on "Non-Permissive Global Sea Control."

MONTEREY, CA, UNITED STATES, August 29, 2025 /EINPresswire.com/ -- The [Naval Warfare Studies Institute](#) (NWSI) at the [Naval Postgraduate School](#) (NPS) has been turning innovative ideas into operational impact for more than 15 years through its annual Warfare Innovation Continuum (WIC), drawing attention from senior Navy leaders and directly shaping fleet concepts.

Each WIC cycle at NPS consists of a 12- to 18-month interdisciplinary exploration of a central theme of naval interest, using classroom projects, student theses, and detailed research to advance naval concepts, assess technologies, and develop tactics while enhancing students' education, research, and combat skills.

The title of the recently completed 2025 WIC theme, "Non-Permissive Global Sea Control," was requested by Rear Adm. Anthony Carullo, director of Warfare Development, Chief of Naval Operations (OPNAV N72). The 2026 WIC cycle, set to kick-off in September, is entitled "The Future Fleet," and was specifically provided by the Warfighter



The Warfare Innovation Continuum (WIC) Workshop is the cornerstone of the year-long concepts process at Naval Postgraduate School, which enables research solutions to real-world U.S. Navy needs.



U.S. Navy Rear Adm. Anthony Carullo, Director of Warfare Development (OPNAV N72), delivers keynote remarks during the Naval Postgraduate School's Warfare Innovation Continuum workshop on Non-Permissive Global Sea Control.

Development Directorate (OPNAV N7).

“We’re getting increasing attention from OPNAV staff looking to be involved with the activities associated with WIC,” said retired U.S. Navy Capt. Jeff Kline, NWSI’s WIC director and NPS Department of Operations Research professor of the practice. “In close to 26 years at NPS, I believe our university-wide analysis, research, and experimentation have never been taken more seriously by fleet leadership, fleet staff officers, OPNAV staff and OPNAV senior leadership.”

The cornerstone of the WIC process is its annual workshop. The four-day event brings together early career professionals from the fleet, Navy labs, industry, and academia, all with diverse experience levels and perspectives, to engage in rapid concept generation. WIC organizers provide innovative tools to the WIC teams, such as Warfighter Centered Design, empowering them to tackle a complex scenario driven by the WIC theme.

“We give them a toolkit, connect them with experts, and create networks they carry into the fleet,” said Lyla Englehorn, NWSI Concepts Branch lead. “We introduce them to the concept of a complex problem – and how it differs from a complicated problem – before they get out to the fleet and are faced with complex military challenges. Most operational challenges are truly complex, dynamic and changing by the moment.”

The Non-Permissive Global Sea Control workshop, held Sept. 23-26, 2024, tasked participants to consider emerging technologies and how they might shape the way we fight. Within a fictional scenario involving near future global conflict, titled “Global Great Power Disruption,” concept generation teams were tasked to address the design challenge, “How might emerging



Naval Postgraduate School (NPS) students listen to keynote presentations during the Warfare Innovation Continuum workshop on Non-Permissive Global Sea Control.



U.S. and international officers studying at the Naval Postgraduate School (NPS) brief their “Gotland Candidate System” concept during the Warfare Innovation Continuum (WIC) Workshop at NPS.

technologies, existing capabilities, and new operational force employment create opportunities to enhance the Navy's ability to deny adversaries, or ensure use of the maritime domain in non-permissive environments?"

To take this on, participants broke into small teams to develop concepts along eight lines of effort: autonomy, awareness, denial, information, integration, logistics, unconventional, and undersea. The ideas and concepts the teams developed were then vetted by government, military, industry and academic subject matter experts, and disseminated back to Navy leadership.

The exhaustive work done at the WIC workshop is just the beginning, serving as the basis of events that occur across the NPS campus throughout the remainder of the WIC cycle.

Working together with NPS' Office of Research and Innovation (OR&I), the annual WIC is the first step in the [Naval Innovation Center](#) operating concept, which NWSI leverages in the workshop to cultivate a vibrant innovation ecosystem at NPS. The concepts generated in the workshop inform research through the Naval Innovation Exchange (NIX), a networked organization under OR&I that coordinates teams of faculty, students and partners working in research "sprints." Emerging tech solutions are further evaluated through multiple NPS Joint Interagency Field Experimentation (JIFX) events.

A notable example of this came when the sponsor, Surface Warfare Directorate, Office of the Chief of Naval Operations (OPNAV N96) specifically tasked NPS to develop ways to arm civilian merchant ships in the Red Sea to defend against various Unmanned Autonomous Vehicles (UAVs).

The NPS community didn't miss a beat and coalesced around the request to provide a thorough response. Systems Engineering Analysis students — all of whom participated in the WIC workshop — led an interdisciplinary effort involving faculty and officer-students from across campus, including students attending NPS via Singapore's Temasek Defence Systems Institute (TDSI), to generate and analyze alternatives.

"The team of military officers applied the systems engineering process they learned at NPS to the challenges facing the Navy in the Red Sea," said systems engineering professor Ron Giachetti. "The Navy sponsors were looking for innovative thinking supported with analysis of alternatives to how the Navy was dealing with attacks in the Red Sea."

The team investigated both kinetic and non-kinetic weapons as well as a myriad of approaches involving different technologies and configurations. They modeled and simulated multiple scenarios to compare the effectiveness of these approaches. Finally, their analysis and recommendations for a layered defense involving multiple manned and unmanned systems were briefed to the sponsor, and received high marks.

"It is paramount that the U.S. Navy think differently as we look at solution sets to the modern-day maritime threat environment," said U.S. Navy Cmdr. Jamie Powers, an OPNAV N96 Branch Head. "The professionals at NPS continue to provide that 'outside' perspective that furthers our warfighting advantage and enables our team to be more lethal at every turn."

Further exploration of the WIC concepts occurred throughout the Fall semester, largely in the classified space. Students researched, designed, and executed a series of wargames addressing topics such as U.S., allied and partner integration into local sea control efforts; modifications to nuclear-powered aircraft carriers to increase survivability and/or provide alternative mission capabilities (classified); local reconnaissance strike networks made up of multi-domain unmanned systems for forward presence, deterrence, sea denial, and other missions (classified); as well as an assessment of emerging technologies for at-sea employment (classified).

Also stemming from the WIC are follow-on workshops, campaign analyses, modeling and simulation, and NPS student thesis work addressing a range of related topics, including modifying USCG cutters to fulfill wartime roles; employing unmanned systems (UxS) in sea denial operations in various critical ocean areas; utilizing grey zone activities to deter adversary grey zone activities; developing tactical formations for UxS flotillas; performing cost-benefit analysis of UxS over traditional combatants; and, utilizing alternative logistic carriers to decrease vulnerability to maritime logistic sea lines of communication.

In addition to the wealth of analyses and innovative concepts and ideas that are born from the process, the WIC's real value remains in its investment in NPS' warrior scholar students, who then bring this experience with them when they return to the fleet and force.

Deep immersion into the WIC's problem sets, and contacts made across the naval enterprise — from industry, systems commands and warfare development commands — means long-term engagement with the issues long after they've left NPS.

"The most effective WIC product we obtain is to have our junior officers think hard and learn about the complex problems they're going to face in their careers and to explore possible solutions," Kline said.

Registration is now open for this next year's WIC workshop, to be held Sept. 22-25, 2025, which will explore The Future Fleet. On tap this year is the challenge, "How might emerging technologies such as decentralized, swarming, heterogeneous minimally crewed and uncrewed systems across multiple domains; decoupling capabilities from large, integrated platforms; or leveraging new fabrication techniques that enable warfighters to design and field systems in an expeditionary environment at the speed of need, provide significant new competitive advantages for a Future Fleet?"

Topics of interest within this year's challenge include allies and partners, artificial intelligence, C-C5ISRT, future hybrid fleet, Intermediate Force Capabilities, joint command and control, long-

range targeting and fires, maritime industrial base, maritime space, MOC ops, sea control, seabed warfare, and sustainment.

“We hope to continue to be challenged by the fleet and OPNAV with complex issues then share our research, analysis, and experimentation to provide insight into bettering our Navy’s and Marine Corp’s warfighting capabilities” Kline said.

Concurrent with the NPS WIC Workshop, the ’25 WIC cycle also includes the Coalition Writers Room. This effort is led by professionals from the Fleet Writers Room (FWR) at the University of Southern California Institute for Creative Technologies. The interactive “writers room” concept is a hands-on creative endeavor that applies Hollywood storytelling techniques to defense problems. It brings together warfighters, scientists, engineers, analysts, and creatives to explore the “dominant designs” of emerging capabilities such as AI, robotics, next-generation command and control, and hypersonics.

The NPS/FWR Coalition Writers Room will tackle complex questions. What are the success and failure modes of modern coalitions? How does a coalition get its mojo? By working through these and other questions, the writers room will generate storylines that test and explore new capabilities. These storylines will later be developed in future FWR events with coalition partners, producing a range of outputs — from vignettes and concept art to, ultimately, a high-impact film on the scale of “Sea Strike 2043.”

“Instead of writing a white paper or an order of battle, they’re going to communicate that complex future military challenge by conveying our scenario through a short film,” Englehorn said. “They’re going to do it Hollywood style, so production values are going to be higher.”

NWSI will also select three or four NPS students for its inaugural cohort of Ford Fellows, a similar effort. Named after John Ford, whose film “The Battle of Midway” led to his first Academy Award, the Ford Fellows will work with the Coalition Writers Room to understand storytelling tools and how to build a world, learning directly from Hollywood’s entertainment professionals as mentors. This will include several trips to Los Angeles, and a few international trips to work with partners.

- For more information on the NPS WIC and upcoming cycle check out the website:
<https://nps.edu/web/nwsi/warfare-innovation-workshops>

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