

NPS, CAMRE Dedicate New Advanced Manufacturing Center

MONTEREY, CALIFORNIA, USA, April 5, 2024 /EINPresswire.com/ -- The Naval Postgraduate School (NPS) has established itself as a driving force in additive manufacturing (AM) research and education for the U.S. Navy, U.S. Marine Corps and Department of Defense, especially for applications in operational environments. Now the institution is taking another major step forward in the realm of AM, establishing a new laboratory to pursue further breakthroughs in 3D printing and related technologies for defense applications.

Representatives from Commander, Naval Surface Forces (CNSF) and Naval Sea Systems Command (NAVSEA) joined senior NPS leaders and faculty on April 2 for a ribbon-cutting ceremony to dedicate the NPS Advanced Manufacturing Center, located at the school's annex adjacent to Monterey Regional Airport.

Operated by the NPS [Consortium for Advanced Manufacturing Research and Education \(CAMRE\)](#), the new facility – with multiple 3D printers and diagnostic machines – is the latest demonstration of the school's forward-leaning approach to researching and improving expeditionary logistics for the fleet, working in tandem with the Navy's type and systems commands.

"We at SURFPAC are fully committed to AM, and to what we think we can do with this as a tool," said Rear Adm. Ted LeClair, Deputy Commander of Naval Surface Force, U.S. Pacific Fleet. "And I couldn't think of a better place than NPS as being the organization that pulls all of this together."



Senior leaders from the Naval Postgraduate School (NPS), Commander, Naval Surface Forces (CNSF) and Naval Sea Systems Command (NAVSEA) participate in the dedication of the NPS Advanced Manufacturing Center at the school's annex near Monterey Regional Airport.

Both LeClair and Dr. Garth Hobson, director of CAMRE, referenced the long journey taken by NPS towards the realization of the Advanced Manufacturing Center – as well as the worthwhile result.

“Today is truly a momentous day for CAMRE, because of what you see around you,” said Hobson, who was joined at the ceremony by CAMRE co-directors Dr. Emre Gunduz and Dr. Amela Sadagic.

The dedication ceremony took place just prior to the start of an Additive Manufacturing Summit organized by CNSF and NAVSEA. NPS and CAMRE leaders met with representatives from CNSF, NAVSEA, Naval Air Systems Command (NAVAIR) and type commands to discuss the Navy’s current AM efforts and potential future requirements.

Other senior Navy representatives attending the ribbon-cutting and summit included Rear Adm. Jason Lloyd, NAVSEA Deputy Commander for Ship Design, Integration and Engineering, and Rear Adm. Robert Dodson, NAVSEA Director of Warfighting Readiness.

“The cooperative environment is absolutely critical between academia, all the services, our industrial partners, other researchers – that is how this is supposed to work,” said Dodson. “So I applaud you all for coming together in this forum to be able to do something like this, and I look forward to what you are going to do tomorrow – help us win.”

The Advanced Manufacturing Center features 3D metal printers from a variety of industry partners, utilizing different printing technologies (cold spray, fusion, wire, powder) and media (steel, aluminum, copper, nickel, cobalt, titanium) as well as a 5-axis computer numerically controlled (CNC) milling machine.

In addition to the 3D printers, an industrial cabinet X-ray imaging system was recently installed to provide NPS student and faculty researchers and their partners with new capabilities that will advance research efforts in several areas, including parts qualification, failure analysis, assembly verification, weld analysis, in situ monitoring and AM system qualification.

“I couldn’t be more excited for the establishment of our new AM center,” said U.S. Navy Lt. Zachary Vrtis, an engineering duty officer who is currently pursuing his Ph.D. in mechanical engineering, with a dissertation focused on metal additive manufacturing. “It will serve as a catalyst for my and future students’ research at NPS, better preparing us for our next jobs in the fleet.”

The past few years have witnessed an expansion of DOD and Navy efforts in the realm of additive manufacturing research, development and deployment. DOD published its first-ever Additive Manufacturing Strategy in January 2021, providing guidance and a framework for AM technology development, while the Navy launched its own Additive Manufacturing Center of

Excellence (AM CoE) in October 2022 at Danville, Va.

As for NPS, the institution is already well-established in the world of AM research and education, with NPS and CAMRE having worked with the Navy and Marine Corps on testing and evaluation of 3D printing technology in the field. Significant examples include operational testing of a Xerox ElemX liquid metal 3D printer aboard Navy amphibious ships, including USS Essex (LHD 2) and USS San Diego (LPD 22), and in-flight testing of a portable 3D printer aboard a Marine Corps MV-22 Osprey during the summer of 2023.

Now, with the addition of the NPS Advanced Manufacturing Center and the continued expansion of CAMRE's efforts in AM education, NPS is seeking to extend the boundaries of what is possible in advanced manufacturing and forward logistics.

"What we're talking about here is a transformative change to the way we conceptualize the supply chains," said NPS Provost Scott Gartner. "What we're talking about is the ship – and the fleets, who are nearby in a supporting capacity – provides the parts, as needed, to keep those ships operable, to keep our national defense secure. That's transformative.

"The way to make that transformation work is to get all of these stakeholders working together in a kind of pressurized box, thinking about it. And that's what we're doing here," Gartner added. "You've got the fleet, you've got industry, you've got academics, you've got other universities all working together – exactly the way that it's supposed to go to develop innovative outcomes."

Launched in 2022, CAMRE represents a unified effort at NPS dedicated to the enhancement of AM education for defense applications and integration of AM technologies across the Navy, Marine Corps and joint force. In addition to proliferating new AM capabilities, CAMRE delivers hands-on education to NPS students in order to develop talent and technologies through applied research with operational forces.

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