Xerox and Naval Postgraduate School Collaborate on 3-D Printing Research



At the cutting-edge of additive manufacturing technology, this new Xerox ElemX 3-D Liquid Metal Printer is now operational in NPS' Large Experiment Annex on campus. Naval Postgraduate School

NORWALK, Conn. & MONTEREY, Calif. – Xerox and the Naval Postgraduate School (NPS) have formed a strategic collaboration focused on advancing additive manufacturing research, specifically 3-D printing, which has the potential to dramatically transform the way the military supplies its forward-deployed forces, Xerox and NPS said in a joint release.

As part of a Collaborative Research and Development Agreement (CRADA), NPS was the first to receive an installation of the Xerox ElemX Liquid Metal Printer on the university campus in December. The Xerox system will provide NPS faculty and

students with hands-on exploration of new ways the technology can deliver on-demand 3-D printing of metal parts and equipment.

“The military supply chain is among the most complex in the world, and NPS understands first-hand the challenges manufacturers must address,” said Xerox Chief Technology Officer Naresh Shanker. “This collaboration will aid NPS in pushing adoption of 3-D printing throughout the U.S. Navy, and will provide Xerox valuable information to help deliver supply chain flexibility and resiliency to future customers.”

With access to the latest additive manufacturing equipment, NPS faculty and students will use the ElemX printer to conduct thesis research to develop new capabilities for the Navy and Marine Corps.

“As the Department of the Navy’s applied research university, NPS combines student operational experience with education and research to deliver innovative capabilities and develop innovative leaders with the knowhow to use them,” said NPS President Ann Rondeau, a retired vice admiral. “This collaborative research effort with Xerox and the use of their 3-D printing innovations is a great example of how NPS uniquely prepares our military students to examine novel approaches to create, make, prototype and manufacture capability wherever they are.”

“From the age of sail to the nuclear era, Sailors have been fixing things at sea so they can complete the mission,” Rondeau continued. “This partnership is about the strategic ability of the Navy to have Sailors on ships with the capability through creativity and technology to advance their operations at sea. Through collaboration, NPS and Xerox are helping build a Navy for the 21st Century.”

The Xerox ElemX printer uses cost-effective aluminum wire to fabricate end-use parts that can withstand the rigors of

operational demands. This ability to produce reliable replacement parts on-demand reduces the dependency on complex global supply chains for deployed forces and also addresses the hidden costs of traditional manufacturing.

“The NPS Alumni Association and Foundation supported bringing the ElemX liquid metal printer to NPS because it will enable soldiers, sailors, airmen, and marines to solve their problems where they are, when problems occur,” noted retired U.S. Marine Corps Col. Todd Lyons, vice president of the NPS Alumni Association and Foundation. “By providing the right digital tools and the liquid metal printer, all of a sudden we’ve helped transform not just the supply chain, but how the Department of Defense (DoD) thinks operationally about supplying war.”

“This is one way to bend the cost curve so that the DoD is not spending a thousand dollars for every dollar that a peer competitor spends,” he added.

“Global supply chains leave industries like aerospace, automotive, heavy equipment, and oil and gas vulnerable to external risks,” said Tali Rosman, vice president and general manager, 3D Printing, Xerox. “Our goal is to integrate localized 3D printing into their operations, and the real-time feedback from NPS gives us actionable data to continuously improve the ElemX.”