



WARFIGHTER PERFORMANCE

Office of Naval Research, Code 34

Visit Our Booth

We will be offering live demos of some of our research, with take-away media available for interested parties.

Mission

The Warfighter Performance department's mission is to enhance warfighter effectiveness and efficiencies through bioengineered and biorobotic systems, medical and behavioral technologies, improved manpower, personnel, and training and systems design.

Vision

- Enhance individual and team decision-making, as well as combat effectiveness, by supplying the correct information to the right people with the required skills at the proper time in the right jobs
- Realize human-system efficiencies to enhance performance and reduce costs
- Create and deliver technologies inspired by biological systems
- Ensure the health and viability of our warfighters afloat and ashore



Department Contact Information

Dr. Patrick Mason, SES
Department Head
Warfighter Performance
patrick.a.mason2.civ@us.navy.mil

CDR Leedjia Svec, Ph.D.
Military Deputy
Warfighter Performance
leedjia.a.svec.mil@us.navy.mil

Dr. Michael LaFiandra
Division Director
Code 341/342
michael.e.lafiandra.civ@us.navy.mil

WARFIGHTER PERFORMANCE

Code 34 Divisions

Human & Bioengineered Systems (Code 341)

Goals

- Sustained and improved warfighter performance and enhanced decision making in all environments through training and biomedical technologies
- Create options for future (perhaps unanticipated) naval decisions, based upon fundamental understanding gained from cognitive and neurosciences
- Support integrated interdisciplinary research programs

Current Research Interests

ONR's Human and Bioengineered Systems Division seeks innovative proposals in basic research through applied research. Current research areas of interest include, but are not limited to:

- Cognitive Sciences
- Computational Neurosciences and Biorobotics
- Human Factors, Organizational Design and Decision Research
- Social, Cultural, and Behavioral Modeling
- Cyber-social Science and Social Cybersecurity
- Training, Education and Human Performance



Warfighter Protection and Applications (Code 342)

Goals

- Increase the survival of casualties through immediate, life-saving treatment and stabilization
- Improve understanding of what causes injury and how to prevent it
- Prevent stress-induced injury and performance degradation in naval occupations and operationally-relevant environments
- Mitigate health and performance risks in undersea operations
- Develop the technology needed to increase the ability of expeditionary forces to utilize unmanned systems

Areas of Interest

The Warfighter Protection and Applications Division seeks technology solutions from a wide range of scientific and engineering disciplines including, but not limited to, biology, physiology, pharmacology, computer and behavioral sciences, and systems engineering. The current S&T programs are:

- Basic Physiological Sciences
- Biotechnology for Naval Applications
- Expeditionary Robotics, Autonomic and Autonomy
- Marine Mammal Health
- Naval Force Health Protection
- Undersea Medicine and Performance



Research Protections (Code 343)

The mission of the Research Protections Division is to ensure that human subject research supported by DON complies with federal regulations, DoD directives, and SECNAVINST 3900.39E CH-1. This includes all research involving human subjects conducted at DON systems and training commands, in operations forces, and at extramural institutions sponsored by the Navy.



See us at I/ITSEC 2024

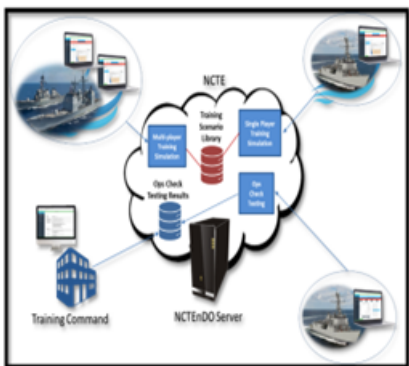
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Automating LVC Configuration

Mrs. Natalie Steinhauser (natalie.b.steinhauser.civ@us.navy.mil)

Dr. Peter Squire (peter.n.squire.civ@us.navy.mil)

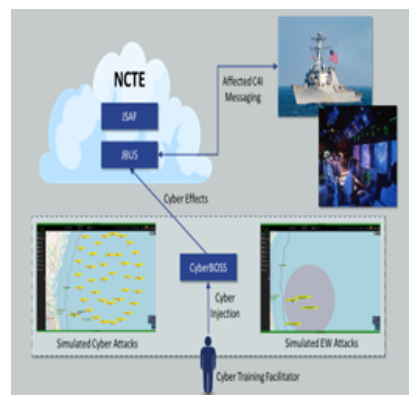
ONR Code 34 sponsors research and technology development centered on automating, simplifying and ultimately reducing the manpower intensive burden of conducting Live, Virtual, and Constructive (LVC) training. Two technologies will be on display to highlight some of the technologies being developed to automate LVC: Navy Continuous Training Environment on Demand, Online (NCTEnDO) and Future Integrated Training Environments Software (FITEware). Inspired by commercial online gaming, NCTEnDO is a web-based server software that enables Navy ships to "pull" Fleet Synthetic Training (FST), 24/7, in port or at sea, vice waiting for scheduled time for a shore-based training commands to "push" a scenario. NCTEnDO reduces the manpower overhead through self-directed automated LVC testing and enables "just in time" training through an On-Demand scenario library and a "free play" lobby system for multi-ship training. FITEware combines next generation interoperability approaches with easy to use interfaces and assistive aids to guide users through common simulation interoperability challenges that have traditionally been performed by Modeling & Simulation experts. Ongoing research is exploring broadening its scope to include interoperability between simulations and command and control systems.



Non-Kinetic Effects for Live, Virtual, Constructive Training

Mrs. Natalie Steinhauser (natalie.b.steinhauser.civ@us.navy.mil)

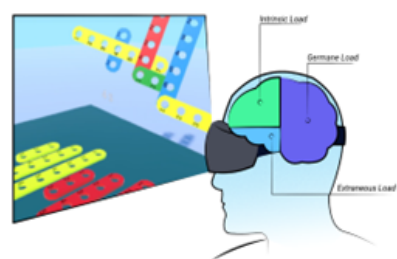
ONR Code 34 sponsors research and technology development centered on decreasing "white-carding" for cyber and Information warfare (IW) effects in Live, Virtual, Constructive (LVC) training, and increasing the fidelity of simulated cyber and IW effects during LVC training events. Two technologies are featured under this exhibit: Cyber Simulation TRaining for Impacts to Kinetic Environment (CyberSTRIKE) and Information Warfare Training Architecture (IWTA). CyberSTRIKE seeks to enable improved shipboard training for identification and mitigation of cyberspace domain activities on shipboard systems, and improve fleet readiness in the current warfighting environment. This technology injects cyber effects into shipboard training systems to support events such as Fleet Synthetic Training (FST) to impart awareness to Naval commanders of cyberspace and electronic warfare (EW) operations on their shipboard assets and supports Naval training on the use of the cyberspace domain in conjunction with traditional kinetic domain operations. IWTA is developing and testing a Navy Continuous Training Environment (NCTE)-compliant architecture for Information Warfare (IW) training that enables IW leaders and personnel to be active participants in Fleet Synthetic Training (FST) and improves Fleet IW readiness. Supports strategic DoD initiatives for Multi-Domain Operations (MDO) and Joint All-Domain Command and Control (JADC2).



Applying Cognitive Load Theory to Maximize Training Effectiveness and Efficiency

Ms. Natalie Steinhauser (natalie.b.steinhauser.civ@us.navy.mil)

ONR Code 34 sponsors research and technology development at Colorado State University demonstration will showcase several VR and AR-based research efforts. First, investigating how varying cognitive load—intrinsic, extraneous, and germane—affects learning efficiency and retention during a shape assembly task in virtual reality (VR). Second, investigations into how to design notifications, alarms, and timers in augmented reality (AR). We are researching visual cues for multiple target visual search scenarios for VR and AR. Lastly, we use VR to alleviate stress and increase attention using VR-based training.



Project OMEN

Dr. Rebecca L. Goolsby (rebecca.l.goolsby.civ@us.navy.mil)

Project OMEN combats disinformation propagation on digital media outlets by giving warfighters the information advantage to proactively thwart adversarial attempts. The developed wargaming technologies are geared to acquire capabilities to plan, orchestrate, and manage social media engagements in situations of high scale, aggressive information warfare. Visit our demonstration to view these sets of training technologies in action and enable military leadership to control mission narratives effectively.



WARFIGHTER PERFORMANCE

Funding, Current and Future Opportunities

ONR is constantly looking for innovative scientific and technological solutions to address current and future Navy and Marine Corps requirements. We want to do business with educational institutions, nonprofit and for-profit organizations with ground-breaking ideas, pioneering scientific research and novel technology developments. The Warfighter Performance Department seeks proposals that create research, development, and acquisition options of potentially extraordinary value and is willing to consider high-risk projects having commensurate value.



Open Funding
Opportunities

Apply Now

FY25 Long Range Broad Agency Announcement (BAA) for Navy and Marine Corps Science and Technology

Proposals Accepted until September 30, 2025 11:59 PM EST

Visit the Code 341 and 342 Science and Technology Program websites to access more information regarding the specific goals, aims, research concentration areas, along with program contact information for each of our areas of interest.



BAA
n00014-23-s-b001

Future Opportunities

ONR offers special funding opportunities to address scientific innovation and unmet needs. Keep an eye out for some of our common opportunities offered each year:

Defense University Research Instrumentation Program (DURIP)

This mechanism enables research related education in areas of interest and priority to the DoD by providing funding to US institutions of higher education for the purchase of equipment and instrumentation.

Historically Black Colleges and Universities/Minority Institutions

This program aims to increase the quantity and quality of minority professionals in science, technology, engineering, and mathematics (STEM) in the defense community via a targeted funding mechanism to conduct research of DoD interest at Minority-Serving Institutions.

Multidisciplinary University Research Instrument (MURI)

This high-risk basic research mechanism attempts to understand or achieve something never done before. Produce significant scientific breakthroughs with far reaching consequences to the fields of science, economic growth, and revolutionary military technologies.

Young Investigator Program (YIP)

The Young Investigator Program seeks to identify and support academic scientists and engineers who are early in their career and show exceptional promise, seeking to conduct research of interest to ONR while fostering the next-generation of outstanding leaders.