

At a Glance

Physical and Cognitive Optimization

- Near term
 - ◆ Ability to predict, monitor and mitigate effects of canine stress on operational performance
 - ◆ Canines that can maintain operational tempo in high- and low-heat-stress environments and at high altitudes
 - ◆ Understanding how dogs cognitively process complex odors such as those of homemade explosives
 - ◆ Better understanding of learning plasticity and stimulus generalization in dogs
- Mid term
 - ◆ Determine extent and effect of cognitive demand on response selection and inhibition
- Far term
 - ◆ An accurate characterization of the full capabilities of all expeditionary canines, including their mobility, intelligence and resilience
 - ◆ Ability to measure physical indicators of canine's untrained response to target odors

Points of Contact

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The Naval Expeditionary Dog Program (NEDP) is a holistic science and technology-based program investigating ways to optimize the utility of working dogs in current and future operating environments.

Better understanding of the complex relationships between nutrition, hydration, physical conditioning, olfaction, training and cognition will allow us to field a dog that can consistently function as trained even in the challenging environments encountered in war.



The objective of the Physical and Cognitive Optimization Technology Investment Area is to investigate underlying features of canine physiology and cognition to deliver knowledge products supporting targeted improvements to canine performance.

NEDP maintains the scientific expertise and relationships with universities that supports rapid, thoughtful answers to urgent questions from the warfighter and the opportunity to test new ideas in limited-objective experiments.

Research Challenges and Opportunities:

- Operational performance of thousands of working detector dogs in Operation Enduring Freedom and Operation Iraqi Freedom has provided robust anecdotal feedback on shortfalls but not much in the way of data
- Homemade explosives have more variability than military munitions and offer a significant, unmet training challenge
- The study of cognitive neuroscience, psychometrics and evolutionary anthropology for working dogs is an exciting new field
- Cross-discipline coordination of cognitive sciences, nutritional sciences and exercise physiology under a single program offers opportunity to answer questions in a holistic, synergistic way
- The NEDP program is needs-driven and provides excellent opportunity for the science to be tested and applied within the Department of Defense military working dog community; can directly impact strategic partner and Department of Homeland Security use of working dogs