

## WHO

**SYSCOM:** ONR

**Sponsoring Program:** Performance Shaping Functions for Environmental Stressors

**Transition Target:** Combat Casualty Care/Military Operational Medicine

**TPOC:**

Dr. Amy Bolton  
[amy.bolton@navy.mil](mailto:amy.bolton@navy.mil)

**Other transition opportunities:**

Navy Corpsmen, Medical Officers and other Clinicians  
US Army Medical Materiel Agency  
Commercial transition opportunities in:

- Pharmaceutical Research - To Indicate change in cognitive performance during drug trials
- Health and Wellness - Tool for self-tracking and annual health visits to track changes in cognitive performance over time
- Industrial/Commercial: Tool to determine if employees are qualified for duty



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## WHAT

**Operational Need and Improvement:** Sailors and Marines may experience performance degradation, including motion sickness, fatigue and stress, due to shipboard environmental conditions.

PASS MUSTER is a Smart Phone-based modular system (i.e. applications) for assessing a variety of cognitive and physical health indicators in operational environments.

**Specifications Required:** Portable/deployable

Assess cognitive performance over time

Detect changes in cognitive performance due to any cause

**Technology Developed:** PASS MUSTER utilizes DANA™, a Neurocognitive Assessment Tool (NCAT), running as an application on Android and iOS mobile devices. Employs both cognitive and psychological test batteries.

Serves as a "Brain Thermometer" that can be used to assist in making critical "Fit-for-Duty" and "Return-to-Duty" decisions for Warfighters experiencing operational performance issues.

PASS MUSTER is compatible with COTS sensors and subjective measures to assess operational readiness symptomatology.

**Warfighter Value:** Assists in early detection of cognitive processing issues due to any cause, including motion sickness, Sopsite syndrome, stress, deployment-related exhaustion, and concussion. Easily deployed in operational settings, since it runs as a mobile application on a smart phone. Supports personalized assessment. Results based on an individual's cognitive performance and can be compared to baseline results.

## WHEN

**Contract Number:** N00014-14-C-0308 **Ending on:** March 31, 2016

Milestone	Risk Level	Measure of Success	Ending TRL	Date
System component (DANA) used in fatigue study with NSW-PC aboard USS Independence	N/A	Performance on Simple Reaction Time test better on mission days than non-mission days	Component: TRL-7 System: TRL-5	May 2015
Additional system components (EEG/ECG) used in medical motion study at NSW-PC	N/A	Higher EEG-based workload for surgeons versus techs in simulated motion conditions	Component: TRL-6 System: TRL-5	November 2015
Full system testing and validation in relevant environment	Low	Reliable data collected across all system component measures	System: TRL-6	August 2016
Full system testing and validation in operational	Med	Reliable data collected across all	System: TRL-7	May 2017

## HOW

**Projected Business Model:** The DANA component of PASS MUSTER is TRL-7, and can be transitioned near-term, providing a transition path for additional components of PASS MUSTER. AnthroTronix can provide DANA to the Department of Navy pre-loaded on a dedicated Android or iOS Mobile device, or as a mobile application only, to be downloaded onto mobile devices already deployed in the fleet. AnthroTronix would also provide on-going technical support and software updates for DANA, as well as other components of PASS MUSTER.

**Company Objectives:** AnthroTronix focuses on working with the Department of Defense to research and develop innovative technologies in the areas of: neuroscience and applied physiological monitoring, advanced human machine interfaces, simulation, and training.

**Potential Commercial Applications:** AnthroTronix is actively pursuing commercial applications in:

- Pharmaceutical Research - To Indicate change in cognitive performance during drug trials
- Health and Wellness - Tool for self-tracking and annual health visits to track changes in cognitive performance over time
- Industrial/Commercial: Tool to determine if employees are qualified for duty

**Contact:** Jonathan Brown, Business Development  
[jbrown@atinc.com](mailto:jbrown@atinc.com) 440-463-5269