

NAVAL AEROSPACE MEDICAL RESEARCH LABORATORY



SCIENCE UPDATE



NAMRL MISSION: TO CONDUCT RESEARCH, DEVELOPMENT, TEST, AND EVALUATION IN AEROSPACE MEDICINE AND RELATED SCIENCES TO ENHANCE THE HEALTH, SAFETY AND OPERATIONAL READINESS OF NAVY, MARINE CORPS, AND OTHER MILITARY PERSONNEL.

WINTER 2009

NAMRL RESEARCHERS WIN AWARD AT AMSUS CONFERENCE

Several NAMRL researchers attended the Association of Military Surgeons of the United States (AMSUS) Conference during the week of 16 to 20 November. The AMSUS Conference was held concurrently with the Association of Medical Service Corps Officers of the Navy (AMSCON) and the Uniformed Services Social Workers (USSW) Conferences.

The AMSCON Conference held its combined Annual Corps Chiefs' Reception and Annual Poster Session hosted by the former director of the Navy Medical Service Corp. NAMRL made a particularly strong showing at the AMSCON Poster Session, entering six sci-



entific posters. The exceptional quality of NAMRL's research was recognized when they received the "Best in Research" award for their submission "**The Efficacy of Low-Dose Intranasal Scopolamine for Motion Sickness.**" This study addressed the efficacy, medication

absorption, and side effect profile of intranasal scopolamine gel as a countermeasure for motion sickness, particularly for use in dynamic military environments. NAMRL also represented at the USSW Conference with a presentation addressing cognitive issues with pilots in flight and pilot psychological profiles. The theme of the conference reflected the need for social workers in our agencies to develop new models of practice and new skill-sets to provide quality social work services in non-traditional settings and within non-traditional organizational structures.

RDML TOURS NAMRL



RDML touring NAMRL's Hypoxia Lab

RDML of the Navy Medicine Support Command (NMSC) and Chief, Medical Service Corps, visited the Naval Aerospace Medical Research Laboratory (NAMRL) on 07 December. It was RDML's first opportunity to

visit one of NMRC's subordinate laboratories. NAMRL's OIC and senior staff presented a command overview which included briefings on NAMRL's mission, current research programs, product lines, technology transfer accomplishments, as well as BRAC plans and major milestones. RDML toured the facility and its laboratories and received a first-hand look at how NAMRL supports the fleet and warfighter mission. RDML emphasized the importance of the unique research conducted at NAMRL, and at all the Navy Medicine laboratories she has visited. She and her staff intend to market the operational medicine research enterprise and increase visibility at both BUMED and in the Fleet.

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NAMRL RESEARCHERS PRESENT AT HFES, HFETAG

The Human Factors and Engineering Society (HFES) held its 53rd annual meeting in October, where a principal investigator from NAMRL presented their most recent hypoxia research. The presentation brought to light novel findings regarding hypoxia and its effect on cognition and post-exposure recovery. The second meeting was the 62nd annual meeting of the Department of Defense Human Factors Technical Engineering Advisory group (HFETAG). Two of NAMRL's principal investigators represented work on the Comprehensive Assessment of Stress Toler-

ance (CAST) and Cross-Cultural Stress Physiology (CCSP) projects, respectively. First, a summarization was given of how the CAST project developed measures and scoring algorithms to aid the Naval Aerospace Medical Institute (NAMI) in their mission to predict and reduce student attrition during flight training. Next, was an outline of NAMRL's success in standing up the new Operational Stress and Resilience Program's (OSRP) Psychophysiology Lab. There was a description of how the Psychophysiology Lab

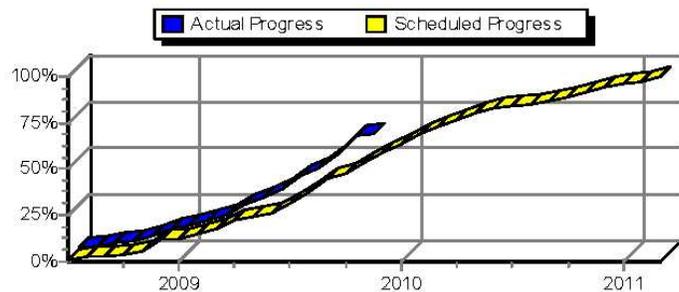
represents a new core capability for NAMRL, including the ability to monitor, record and analyze a variety of physiologic data in a controlled environment including, EGG, EKG, GSR, respiration, eye-tracking, and voice stress analysis. The presentation was concluded with a description of the immediate goals of the CCSP project which included comparing the differences in cross-cultural physiological reactions to stress.



BRAC UPDATE



NAMRU-DAYTON (NOV 2009)



| | 06 NOV | 30 NOV |
|------------------------------|--------|--------|
| Actual Progress: | 64% | 70% |
| Scheduled Progress: | 53% | 59% |
| 11% AHEAD OF SCHEDULE | | |

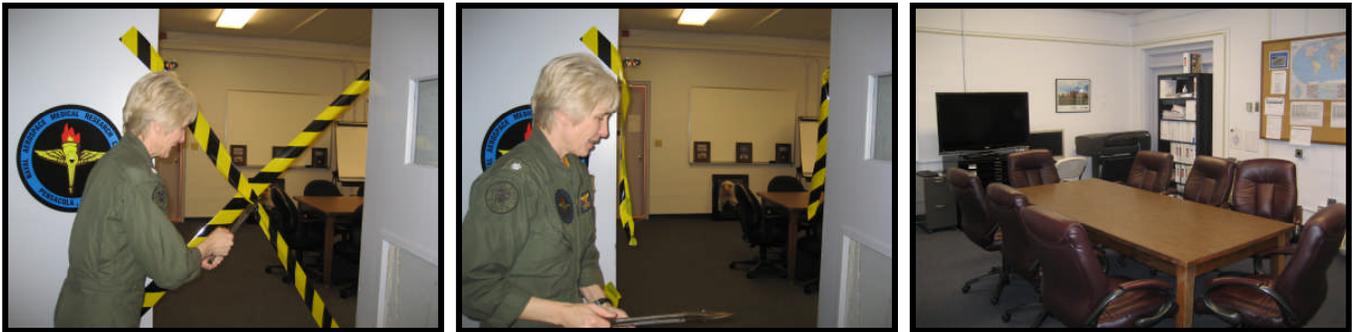
NAMRL update as of 06 November:

- The roof was being installed and the precast was nearing completion.
- Electric power was expected 15 Nov.
- The Disorientation Research Device had concrete placed for the footer system.

COMMANDER'S CORNER



The month of December always gives pause for reflection and as I consider the past year at NAMRL, the first words that come to mind are challenge, opportunity, change, and growth. While challenge came in various forms, the staff at NAMRL responded with effective and innovative solutions. We answered the call for expanded research capabilities by conceptualizing and outfitting two new laboratories within NAMRL; the Continuous Operations Performance Enhancement (COPE) Lab and Psychophysiology Lab. The new laboratories provide NAMRL researchers with state-of-the-art technologies to explore and solve the problems of operational communities, and specifically, the warfighter. To support the research of these laboratories, four new scientists have been added to the staff and several new research lines were funded, including the validation of two potential “readiness to fly” assessment tools for aircrew, and a cross-cultural comparison of the physiological markers of stress. The NAMRL staff has also been successfully meeting the challenge of product delivery and transition. In total, 18 products were published or transitioned this year. In the past six months, NAMRL researchers attended five conferences and made 16 research presentations, of which one was bestowed a “Best in Research” award at the AMSUS conference. Another area of challenge and growth that must be mentioned is the BRAC move to Dayton. This challenge has been embraced and is already paying dividends. NAMRL held a ribbon cutting ceremony for the opening of our new BRAC War Room, designed to be a think tank for all aspects of the BRAC transition. The science transition piece is no exception. NAMRL has established research collaborations and agreements with universities and laboratories such as Air Force Research Laboratory (AFRL), Air Force Institute of Technology (AFIT), USAF School of Aerospace Medicine (USAFSAM), Wright State University, University of Dayton (UD) and the University of Dayton Research Institute (UDRI), all of which are seen as essential to the success of NAMRU- Dayton during, and after, the transition. Lastly, to solidify our relevance and connection to the fleet, a charter was signed this year creating an NMR&D Fleet Liaison for Aviation with the Scientific Director of NAMRL being assigned as the liaison/representative for NMR&D to the Chief of Naval Air Forces. This direct link to our customer plays a vital role in keeping the laboratories’ work germane and consistent with fleet needs. The years’ challenges brought necessary changes, but also, excellent opportunities for growth and advancement. The NAMRL staff looks forward to the upcoming year and the unique challenges that we are certain will come our way.



Opening of the BRAC War Room



NAMRL's new Psychophysiology Lab