

LOCATION

Hilton Crystal City
2399 Jefferson Davis Hwy.
Arlington, VA 23704
(703) 418-6800

ATTIRE

Appropriate dress for the Conference is business casual for civilians and Class B uniform or uniform of the day for military personnel.

ID BADGE

During Conference registration and check-in, each Attendee will be issued an identification badge. Please be prepared to present a valid picture ID. Badges must be worn at all Conference functions.

CONTACTS

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TUESDAY, FEBRUARY 4, 2014

7:00 AM – 6:30 PM

Registration

Virginia Foyer

7:00 AM – 8:00 AM

Continental Breakfast

Virginia Foyer

8:00 AM – 8:15 AM

Welcome and Introductory Remarks

Adams/Madison Ballroom

- ▶ Christopher Nemeth, PhD, Chair, NDIA Human Systems Division; Principal Scientist, Applied Research Associates
- ▶ Major General Barry D. Bates, USA (Ret), VP Operations, NDIA
- ▶ Jared Freeman, PhD, Conference Chair, NDIA Human Systems Division; Chief Scientist, Aptima
- ▶ Mr. Maris Vikmanis, Principal Human Systems Advisor; Chief Engineer, U.S. Air Force Research Laboratory (AFRL)

8:15 AM – 9:00 AM

Keynote Address

Adams/Madison Ballroom

- ▶ Dr. Patrick Mason, SES, Director, Human Performance, Training & BioSystems, Office of the Secretary of Defense

9:00 AM – 10:30 AM

Session 1: Systems Interface and Cognitive Processing (SICP)

Adams/Madison Ballroom

Session Chairs

- ▶ Todd Nelson, PhD, Chief, Strategic Planning and Transformation Division, U.S. Air Force Research Laboratory (AFRL)
- ▶ Mr. Gary Gomez, Independent Consultant, Taylor Connor Associates, LLC

The Systems Interfaces and Cognitive Processes session focuses on human system needs through the development of seamless human-machine interfaces that learn and maintain rich models of their users over the course of numerous interactions. The selections of papers for this session address science and technology that will enable war fighters to engage collaboratively with autonomous systems, decision-support technologies, and human teammates in the most natural means possible, leading to reduced cognitive burden and increased mission effectiveness.

Naturalistic Ecologically Designed Ontology for Human-System Interaction in Immersive Environments

- ▶ Kelly Hale, PhD, Senior Vice President, Technical Operations, Design Interactive, Inc.

Human-Robot Interaction (HRI): Achieving the Vision of Effective Soldier-Robot Teaming

- ▶ Susan Hill, PhD, HRI Technical Lead, U.S. Army Research Laboratory (ARL)

CaN CTA Enabling Technologies for Brain and Body State Assessment and Modeling for System Interfaces

- ▶ Mr. Timothy Lee, CaN CTA Program Director, DCS Corporation

Integrating Human Cognitive States with Intelligent Systems for Optimal Human-Machine Teaming

- ▶ Mr. Kevin Durkee, Senior Scientist, Aptima, Inc.

A Natural, Multi-Modal Interface for Unmanned Platforms

- ▶ Mr. Glenn Taylor, Senior Scientist, Soar Technology, Inc.

10:30 AM – 11:00 AM

Networking Break

Virginia Foyer

11:00 AM – 12:20 PM

Session 2: Protection, Sustainment and Physical Performance (PSPP)

Adams/Madison Ballroom

Session Chairs

- ▶ Mike LaFiandra, Sc.D, Chief, Dismounted Warrior Branch, U.S. Army Research Laboratory (ARL)
- ▶ Dylan Schmorow, PhD, Chief Scientist, Soar Technology, Inc.

Protection, Sustainment and Physical Performance (PS&PP) are central to the war fighter's survivability as well as being central to many non-defense applications. PS&PP supports war fighting and peacekeeping by addressing the full spectrum of personal protection, sustainment and physical performance requirements. It includes combat clothing and individual equipment; combat rations and field-feeding equipment; logistics readiness; physical aiding and enhancement; vehicle escape and crash safety; warrior survival and rescue; aerial delivery; and dismounted, mounted and aircrew warrior systems integration, including war fighter systems analysis.

Trade-offs between these areas will greatly influence mission success. History has demonstrated that war fighter overburden is a persistent problem and attributable to equipment for protection and sustainment. This session will discuss factors affecting war fighter protection, sustainment and physical performance and the trade-offs between them.

Could Non-Lethal Weapons Lessen the Load for Soldiers?

- ▶ Jennifer Preston, PhD, Senior Biomedical Research Analyst, American Systems

Lightening the Thermal Load

- ▶ Steve Eckels, PhD, Director, Institute for Environmental Research, Kansas State University

The Use of an Innovative Toolkit and Software Design Tool in the Development of Electro-Textile Garments

- ▶ Mr. Jeremiah Slade, Principal Engineer, Infoscitex Corporation

GHOST Vessel Reductions of Vessel Motion Related Injuries to Special Warfare Combatant-Craft Crewmen and Other Embarked Personnel

- ▶ Mr. George Root, Consultant, Juliet Marine Systems, Inc.

12:20 PM – 1:30 PM

Networking Lunch

Washington Ballroom

SPEAKER DONATION

In lieu of Speaker gifts, a donation will be made to the Fisher House Foundation. For additional information, please visit: <http://www.fisherhouse.org>

ADVERTISING

Advertise in *National Defense* magazine and increase your organization's exposure. *National Defense* will be distributed to Attendees of this Conference as well as other NDIA events. For more information, contact Mr. Dino Pignotti, VP Advertising, at (703) 247-2541 or dpignotti@ndia.org.

PROCEEDINGS

Proceedings will be available on the web through the Defense Technical Information Center (DTIC) two weeks after the Conference. All registered Attendees will receive an email notification once the proceedings are available.

SURVEY

A survey will be e-mailed to you after the Conference. We would appreciate your time in completing the survey to help make our event even more successful in the future.

NDIA EVENTS

Please visit the NDIA website for a complete listing of the events we offer.

NDIA website:
<http://www.ndia.org>

Select:
Meetings & Events
Schedule of Events

1:30 PM – 3:00 PM

Session 3: Personnel, Training and Leadership Development (PTLD)

Adams/Madison Ballroom

Session Chairs

- ▶ Winston (Wink) Bennett, PhD, Technical Advisor, Continuous Learning and Performance Assessment Research, U.S. Air Force Research Laboratory (AFRL)
- ▶ Scott Grigsby, PhD, Senior Scientist, Ball Aerospace

Today's warriors train for tomorrow's fight using yesterday's technology, methods and strategies. The Personnel, Training and Leader Development Group looks to strengthen unit readiness and reduce costs through advances in force management and modeling, selection and classification, training methods and technologies, and leader development. Discovering, developing and demonstrating innovative education strategies, media and advanced training performance measures, leads to timely and effective training reflecting dynamic operational insights and challenges. This session will discuss proposed directions for user-centric training design, metrics, and instruction within realistic, adaptive, and interactive scenario-based training.

Harnessing First-Hand Experience for Use in Training

- ▶ Kelly Hale, PhD, Senior Vice President, Technical Operations, Design Interactive, Inc.

Use of Operator-in-the-Loop Simulations to Substantiate Metrics for Human-Centric Systems

- ▶ CDR Justin Shoger, USN, Integrated LVC Architectures, NAVAIR Aviation Training Systems (PMA205)

In-Situ Training for Aircraft Carrier Sailors using Augmented Reality

- ▶ Mr. Patrick Ryan, Project Manager, Newport News Shipbuilding

Interoperable Performance Assessment to Support Adaptive Training

- ▶ Ms. Tiffany Poepelman, Industrial-Organizational Scientist, Aptima, Inc.

Using Human Behavior Modeling to Create More Effective, Scalable and Affordable Training Experiences

- ▶ Michael van Lent, PhD, President and CEO, Soar Technology, Inc.

The ROI of Instructor Development

- ▶ Sae Schatz, PhD, Chief Scientist, MESH Solutions, LCC (a DSCI Company)

3:00 PM – 3:30 PM

Networking Break

Virginia Foyer

3:30 PM – 5:00 PM

Session 4: Social, Cultural, Behavioral Understanding (SCBU)

Adams/Madison Ballroom

Session Chairs

- ▶ Jen Rochlis Zumbado, PhD, Element Manager, Space Human Factors and Habitability, NASA
- ▶ BG Pete Palmer, USA (Ret), Director, EDGE® Innovation Network, General Dynamics

The NDIA committee on Social & Cultural Understanding focuses on developing cultural situation awareness, understanding socio-cultural models and data in denied areas, performing social network analysis, building partnerships and defining metrics and measures of effectiveness for global project and program solutions. Within this session, we will hear presentations that span technical, experiential and analytical approaches to understanding and interpreting social and cultural data. Shortcomings and improvements related to predictive analytical methods will also be discussed. These methods include utilizing social media, crowd sourcing, cultural modeling and ethnography, to increase the efficiency and accuracy of information within the appropriate time to affect.

Embedded Ethnography: From Trenches to Understanding

- ▶ Ms. Tonia Bartz, Senior Human Sciences Designer, General Dynamics C4 Systems

Using Crowd-Sourcing Tools and Prediction Markets to Overcome Cognitive Bias in Military Decision Making and Intelligence Analysis

- ▶ Mr. Bob Carey, Executive Director, National Defense Committee

Predictive Analytics: Toward an Integrated Social Network and Socio-Cultural Model Framework

- ▶ Mr. Steven Esposito, Team Leader, Analytic Solutions, Infoscitex Corporation

Deriving Population Assessments through Opinion Polls, Text Analytics and Agent-Based Modeling

- ▶ Mr. Bruce Skarin, Simulation Scientist, Aptima, Inc.

Realizing the Vision of Social Radar: Trends, Opportunities and Analysis of Sociocultural Behavior S&T for the DoD

- ▶ Dylan Schmorow, PhD, Chief Scientist, Soar Technology, Inc.

Toward A More Faithful Representation of the Soldier in Modeling and Simulation

- ▶ Joseph McDonnell, PhD, Principal Scientist, Dynamic Animations Systems

5:00 PM – 6:30 PM

Poster Presentations and Reception (CASH BAR)

Virginia Foyer

WEDNESDAY, FEBRUARY 5, 2014

7:00 AM – 12:00 PM

Registration

Virginia Foyer

7:00 AM – 8:00 AM

Continental Breakfast

Virginia Foyer

8:00 AM – 8:15 AM

Welcome and Introductory Remarks

Adams/Madison Ballroom

- ▶ Christopher Nemeth, PhD, Chair, NDIA Human Systems Division; Principal Scientist, Applied Research Associates

8:15 AM – 9:00 AM

The Future of Human Systems: From S&T to Acquisition - Government Perspective

Adams/Madison Ballroom

- ▶ Moderator: Mr. Maris Vikmanis, Principal Human Systems Advisor; Chief Engineer, U.S. Air Force Research Laboratory (AFRL)
- ▶ Dr. Patrick Mason, SES, Director, Human Performance, Training & BioSystems, Office of the Secretary of Defense
- ▶ Dr. Morley Stone, Chief Scientist, 711 Human Performance Wing
- ▶ Col William Mueller, USAF, Director, 711 Human Performance Wing/Human Systems Integration Directorate
- ▶ COL Thomas Meyer, USA, Chief, Human Dimension Task Force Chief, ARCIC CDLD
- ▶ Dr. Thomas Killion, Director of Technology, Office of Naval Research

9:00 AM – 10:00 AM

The Future of Human Systems: From S&T to Acquisition - Industry Perspective: Going Lean with HSI

Adams/Madison Ballroom

- ▶ Moderator: Kay Stanney, PhD, C.H.F.P., President, Design Interactive, Inc.
- ▶ Mr. Scott Fouse, Director, LM Advanced Technology Labs
- ▶ Valerie E. Martindale, PhD, CAsP, Lead Associate, Booz Allen Hamilton
- ▶ BG Pete Palmer, USA (Ret), Director, EDGE® Innovation Network, General Dynamics
- ▶ Greg Zacharias, PhD, President, Charles River Analytics

10:00 AM – 10:30 AM

Networking Break

Virginia Foyer

10:30 AM – 11:45 AM

Roundtable Discussions

Washington Ballroom

Attendees will have approximately 20 minutes to visit (3) tables of their choice for a discussion on the subject matter listed below. We recommend you plan which tables you would like to visit ahead of the session.

- ▶ **Table 1: “Measuring ROI on Human Systems”** led by Joseph Cohen, PhD, Associate Director, Human Performance Training and BioSystems Directorate, Office of the Director of Assistant Secretary of Defense for Research and Engineering
- ▶ **Table 2: “Systems Interface and Cognitive Processing”** led by Todd Nelson, PhD, Chief, Strategic Planning and Transformation Division, U.S. Air Force Research Laboratory (AFRL) and Mr. Gary Gomez, Independent Consultant, Taylor Connor Associates, LLC
- ▶ **Table 3: “Advocacy: Growing Our Human Systems Community”** led by Kay Stanney, PhD, C.H.F.P., President, Design Interactive, Inc.
- ▶ **Table 4: “Human Social, Cultural Behavioral Understanding”** led by Jen Rochlis Zumbado, PhD, Element Manager, Space Human Factors and Habitability, NASA and BG Pete Palmer, USA (Ret), Director, EDGE® Innovation Network, General Dynamics
- ▶ **Table 5: “Personnel, Training and Leadership Development”** led by Scott Grigsby, PhD, Senior Scientist, Ball Aerospace
- ▶ **Table 6: “Assessing Performance”** led by Winston (Wink) Bennett, PhD, Technical Advisor, Continuous Learning and Performance Assessment Research, U.S. Air Force Research Laboratory (AFRL)
- ▶ **Table 7: “Protection, Sustainment and Physical Performance”** led by Mike LaFiandra, Sc.D, Chief, Dismounted Warrior Branch, U.S. Army Research Laboratory (ARL) and Dylan Schmorrow, PhD, Chief Scientist, Soar Technology, Inc.

11:45 AM – 12:00 PM

Conference Closing Remarks

Washington Ballroom

- ▶ Jared Freeman, PhD, Conference Chair, NDIA Human Systems Division; Chief Scientist, Aptima
- ▶ Mr. Maris Vikmanis, Principal Human Systems Advisor; Chief Engineer, U.S. Air Force Research Laboratory (AFRL)
- ▶ Christopher Nemeth, PhD, Chair, NDIA Human Systems Division; Principal Scientist, Applied Research Associates