

2016 HUMAN SYSTEMS CONFERENCE

*“VALUING HUMAN SYSTEMS R&D:
ENHANCING CAPABILITIES, REDUCING COST”*

Systems Interfaces and Cognitive Processing (SI&CP)

Protection, Sustainment and Warfighter Performance (PS&WP)

Human Systems Integration (HSI) Metrics

Human Aspects of Operations in Military Environments (HAOME)

Personalized Assessment, Education, and Training (PAE&T)

FEBRUARY 9-10, 2016

Waterford at Springfield
SPRINGFIELD, VA

EVENT #6350

WWW.NDIA.ORG/MEETINGS/6350

LOCATION

Waterford at Springfield
6715 Commerce St
Springfield, VA 22150
(703) 719-5700

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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BG Pete Palmer, USA (Ret)

Vice Chair; Director, EDGE Innovation
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Ms. Christy J. Mason

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TUESDAY, FEBRUARY 9, 2016

7:00 AM – 6:30 PM

Registration

Foyer

7:00 AM – 8:00 AM

Continental Breakfast

Foyer

8:00 AM – 8:15 AM

Welcome and Introductory Remarks

Singleton Combo Ballroom

- ▶ Christopher Nemeth, PhD, Chair, NDIA Human Systems Division; Principal Scientist, Applied Research Associates
- ▶ MG Barry Bates, USA (Ret), Vice President, Operations, NDIA

8:15 AM – 9:00 AM

Keynote Address

Singleton Combo Ballroom

- ▶ Greg Zacharias, PhD, Chief Scientist, USAF

9:00 AM – 10:15 AM

Panel: Science and Technology Roadmap: Government Perspective

Singleton Combo Ballroom

Session Chair

Maris Vikmanis, Principal Advisor to Director of Human Effectiveness, AFRL

- ▶ John Tangney, PhD, Director, Human and Bioengineered Systems Division, ONR
- ▶ Mike LaFiandra, Sc.D, Chief Dismounted Warrior Branch, ARL
- ▶ Ray Perez, PhD, Program Officer, Human and Bioengineered Systems, ONR
- ▶ Elizabeth Bowman, PhD, Operations Research Analyst, ARL
- ▶ Todd Nelson, PhD, Chief, Strategic Planning and Transformation Division, AFRL

10:15 AM – 10:30 AM

Networking Break

Hazel Combo Ballroom

10:30 AM – 11:00 AM

Conference Gateway Address

Singleton Combo Ballroom

- ▶ COL Benjamin Solomon, USA, MD, Brain Health Program Manager, OTSG, DHA

11:00 AM – 12:15 PM

Panel: HSI R&D Challenges to Optimize Readiness and Reduce Costs at Strategic, Operational and Tactical Levels: Industry Perspective

Singleton Combo Ballroom

Session Chair

Jared Freeman, PhD, Chief Scientist, Aptima

- ▶ Kay Stanney, PhD, C.H.F.P, President and Founder, Design Interactive, Inc.
- ▶ Dylan Schmorow, PhD, Chief Scientist, Soar Technology, Inc.
- ▶ Marty Voshell, PhD, Scientist, Charles River Analytics

12:15 PM – 1:15 PM

Networking Lunch

Hazel Combo Ballroom

1:15 PM – 3:00 PM

Networking Poster and Demonstration Session

Hazel Combo Ballroom

- ▶ **GUITAR: Managing, Measuring, and Promoting the Remediation of Usability Problems of Systems Through the Simplification and Synchronization of Usability Testing**
Marc Abrams, PhD, CTO, Harmonia Holdings Group, LLC
- ▶ **Improving Learner Retention by Identifying and Reducing Cognitive Overload**
Christopher Bowers, Human Performance Technologist, Goal-Oriented Human Performance Technologies, LLC
- *▶ **Measuring and Improving Situational Awareness Through Cognitive Stressors**
Jean Castonguay, Executive Director, CogniSens Applied Research Centre
- ▶ **Predicting the Significance of Injuries Potentially Caused by Non-Lethal Weapons**
Shelley Cazares, PhD, Research Staff Member, IDA
- ▶ **The Role of Perceptual-Cognitive Baselines for HSI Metrics**
Jocelyn Faubert, PhD, Director, Science, CogniSens Applied Research Centre
- ▶ **Meeting Cross-Service Challenges: Exploring Verification and Validation Using the Experience API**
Gregory Goodwin, PhD, Senior Research Scientist, Army Research Laboratory-HRED, STTC
- ▶ **System of Systems for Autonomous Mission Decisions**
Paul Hershey, PhD, Sr. Engineering Fellow, Raytheon
- ▶ **Identifying Innate Capabilities for Predicting Performance**
Linda McIsaac, PhD, President, Xyte, Inc.
- ▶ **Designing Future Processing, Exploitation, and Dissemination Support Systems Using Simulation**
Corey Lofdahl, PhD, Senior Scientist, Charles River Analytics
- ▶ **Human Augmentation: Understanding the Fundamental Principles of Exoskeleton Actuation for Optimal Human Performance**
Meghan O'Donovan, Research Biochemist, NSRDEC
- *▶ **Command Operations Dashboard: Assessment and Feedback Tool for Collective Training**
Kara Orvis, PhD, Division Director, Aptima, Inc.
- *▶ **Identifying Psychophysiological Measurement of Cognitive Resiliency**
Debbie Patton, Research Psychologist, ARL-HRED
- *▶ **Effect of High Deck Accelerations on Surgical Tasks**
Eric Pierce, Human Factors Engineer, NSWG - PCD
- *▶ **CultureMap**
Thomas Santarelli, Director, CHI Systems, Inc.
- ▶ **Quick Sketch Concepts – a Collaborative, Visual and Strategic Bridge**
Steve Tanaka, Concept Artist, SSTanakaArt
- ▶ **Metrics and Measures of Operational Fit for Cyber Mission Forces**
LTC Stoney Trent, PhD, Cognitive Engineer, NSA; Chief, Experimentation Division (J93), USCYBERCOM

(* denotes demo presentation)

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>

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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

3:00 PM – 4:00 PM

Session #1: Protection, Sustainment and Warfighter Performance (PS&WP)

Singleton Combo Ballroom

Session Chairs

Mike LaFiandra, Sc.D, Chief, Dismounted Warrior Branch, ARL

Jean Castonguay, President and CEO, CogniSens, Inc.

- ▶ **A Unifying Framework for Defining and Measuring Physical and Cognitive Load**
Eric Jones, Human Factors Engineer, Draper
- ▶ **Physical Augmentation Concept for Improved Soldier Lethality**
Frank Morelli, Research Psychologist, ARL
- ▶ **Effects of Self-Regulation on Executive Function & Resilience for Soldier Health, Wellbeing and Warfighter Performance**
Pierre Beaucamp, PhD, President, Mindroom PSP

4:00 PM – 5:00 PM

Session #2: Human System Integration Metrics (HSI)

Singleton Combo Ballroom

Session Chairs

George Salazar, PE, CSEP, Human Computing Interface Technical Discipline Lead, NASA

Kay Stanney, PhD, C.H.F.P., President and Founder, Design Interactive, Inc.

- ▶ **Measures and Metrics: The Need for Consistency in HSI Measurement Terminology**
LTC Stoney Trent, PhD, Cognitive Engineer, NSA, Chief, Experimentation Division (J93), USCYBERCOM
- ▶ **Human Systems Integration Progress and Risk Specification Tool**
Eric Stohr, Sr. Human Factors Engineer, Basic Commerce & Industries (BCI) Inc.
- ▶ **Toward a Framework for Assessing Human Systems Integration Efficacy**
CDR Michael O'Neil, USCG, HSI Division, USCG HQ
- ▶ **Embedding Human System Integration Metrics in Agile Software Evaluation Environments: The Value of Opportunistic Behavioral Data Collection**
Joshua Poore, PhD, Senior Member of Technical Staff, Draper

5:00 PM – 5:15 PM

Adjourn and Closing Remarks

Singleton Combo Ballroom

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

5:15 PM – 6:30 PM

Networking Reception (CASH BAR)

Hazel Combo Ballroom

WEDNESDAY, FEBRUARY 10, 2016

- 7:00 AM – 4:00 PM** **Registration**
Foyer
- 7:00 AM – 8:00 AM** **Continental Breakfast**
Foyer
- 8:00 AM – 8:05 AM** **Welcome and Introductory Remarks**
Singleton Combo Ballroom
▶ Christopher Nemeth, PhD, Chair, NDIA Human Systems Division; Principal Scientist, Applied Research Associates
- 8:05 AM – 8:35 AM** **Keynote Address**
Singleton Combo Ballroom
▶ Sae Schatz, PhD, Director, Advanced Distributed Learning (ADL) Initiative
- 8:35 AM – 9:35 AM** **Panel: Government HSI Initiatives**
Singleton Combo Ballroom
Session Chair
Gary Gomez, Deputy Chair, Human Systems Division; President, Taylor Connor Associates
- ▶ Maureen Sullivan, Deputy Assistant Secretary of Defense for Environment Safety and Occupational Health, OUSD (AT&L)
 - ▶ Robert Gold, Director, Engineering Enterprise, OASD (SE)
 - ▶ Patrick Mason, PhD, SES, Director, Human Performance, Training and Biosystems Directorate, OASD (R)
 - ▶ Beverly Knapp, PhD, Deputy Director, Army Human Systems Integration, HQ Dept Army, G-1
 - ▶ Owen Seely, Senior Human Systems Integration Engineer, USMC
- 9:35 AM – 9:50 AM** **Networking Break**
Hazel Combo Ballroom
- 9:50 AM – 10:50 AM** **Session 3: Personalized Assessment, Education & Training (PAE&T)**
Singleton Combo Ballroom
Session Chairs
Glenn Gunzelmann, PhD, S&T Advisor, Cognitive Models & Agenda Branch, AFRL
Scott Grigsby, PhD, Senior Scientist, Ball Aerospace
- ▶ **Using Neuroscience to Enhance PTLD**
Jocelyn Faubert, PhD, Director, Science, CogniSens Applied Research Centre
 - ▶ **Beyond Competency Based Training: A New Paradigm for Training Department of Defense Employees**
Craig Arndt, PhD, P.E., D.Eng., USN(R), Department Chair, Engineering And Technology; Professor of Systems Engineering, Defense Acquisition University
 - ▶ **Science, Technology, and U.S. National Security Strategy: The Role of the War Colleges**
Raymond DuBois, Senior Advisor, Center for Strategic and International Studies
 - ▶ **Better Preparing Units for Gray Zone Operations**
M. Shands Pickett, Director, Applied Research and Technology, VATC, Inc.

10:50 AM – 11:50 AM

Session 4: Systems Interface & Cognitive Processing (SI&CP)

Singleton Combo Ballroom

Session Chairs

Todd Nelson, PhD, Chief, Strategic Planning and Transformation
Division, AFRL

Ryan Kilgore, PhD, Vice President, Human Effectiveness, Charles River Analytics

▶ **Text Analytic Techniques Enhancing Analysts' Performance**

Glory Avina, PhD, Cognitive Psychologist, Sandia National Laboratory

▶ **Creating Cognitively-inspired Context Models to Facilitate Human-Systems Interaction**

Andrew Rosoff, CEO, CHI Systems, Inc.

▶ **Enhancing Capabilities and Reducing Workload in UAV Operations**

Zahar Prasov, PhD, Research Engineer, Draper

11:50 AM – 12:20 PM

HSI and the Engineering Enterprise

Robert Gold, Director, Engineering Enterprise, DASD (SE)

12:20 PM – 12:35 PM

Presentation - FFRDC HSI Initiatives

Phil Bennett, Manager, Cognitive Systems, Sandia National Laboratories

12:35 PM – 1:30 PM

Networking Lunch

Hazel Combo Ballroom

1:30 PM – 2:30 PM

Joint Panel: NDIA Health Affairs and Government Representatives

Singleton Combo Ballroom

▶ CDR Joseph Cohn, USN, PhD, Research Division Chief, Defense Health Agency/RDA
Directorate

▶ Kelly Laurel, MBA, Director, Federal Healthcare, Siemens Government Technologies; Chair,
Health Affairs Division, NDIA

▶ Keith Prusaczyk, PhD, U.S. Navy Medical Research Center

▶ Suzanne Sincavage, PhD, IDIQ, Inc.

2:30 PM – 3:45 PM

Roundtable Discussions

Hazel Combo Ballroom

▶ **Table 1:** Systems Interface and Cognitive Processing (SI&CP)

▶ **Table 2:** Protection, Sustainment and Warfighter Performance (PS&WP)

▶ **Table 3:** Personalized Assessment, Education, and Training (PAE&T)

▶ **Table 4:** Human Aspects of Operations in Military Environments (HAOME)

▶ **Table 5:** Human Systems Integration (HSI) Metrics

3:45 PM – 4:00 PM

Conference Closing Remarks

Singleton Combo Ballroom

▶ Christopher Nemeth, PhD, Chair, NDIA Human Systems Division;

4:00 PM

Conference Adjourns