



NDIA

AT THE HEART
OF THE MISSION

2020 HUMAN SYSTEMS CONFERENCE

Human Systems within Multi-Domain Operations

March 3 – 4 | Arlington, VA | [NDIA.org/HumanSystems20](https://ndia.org/HumanSystems20)

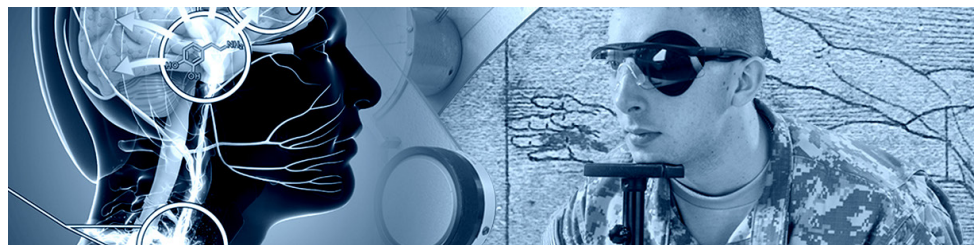
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NDIA

WHO WE ARE

The National Defense Industrial Association is the trusted leader in defense and national security associations. As a 501(c)(3) corporate and individual membership association, NDIA engages thoughtful and innovative leaders to exchange ideas, information, and capabilities that lead to the development of the best policies, practices, products, and technologies to ensure the safety and security of our nation. NDIA's membership embodies the full spectrum of corporate, government, academic, and individual stakeholders who form a vigorous, responsive, and collaborative community in support of defense and national security. For more than 100 years, NDIA and its predecessor organizations have been at the heart of the mission by dedicating their time, expertise, and energy to ensuring our warfighters have the best training, equipment, and support. For more information, visit **NDIA.org**



HUMAN SYSTEMS

WHO WE ARE

The Human Systems Division promotes the exchange of technical information and discussions among government, industry, and academia. The Division supports the expansion of research and development in areas related to the human as a system whose performance must be integrated into any military system of systems. To this end, the Division provides a variety of ways for government, industry, and academia to collaborate and advance human performance in air, land, sea, space, and cyberspace through research, education, and consultation.

LEADERSHIP AND COMMITTEES

Jim McCarthy, PhD
Division Chair

Peter Palmer
Vice Chair

Kelly Hale, PhD
Deputy Chair

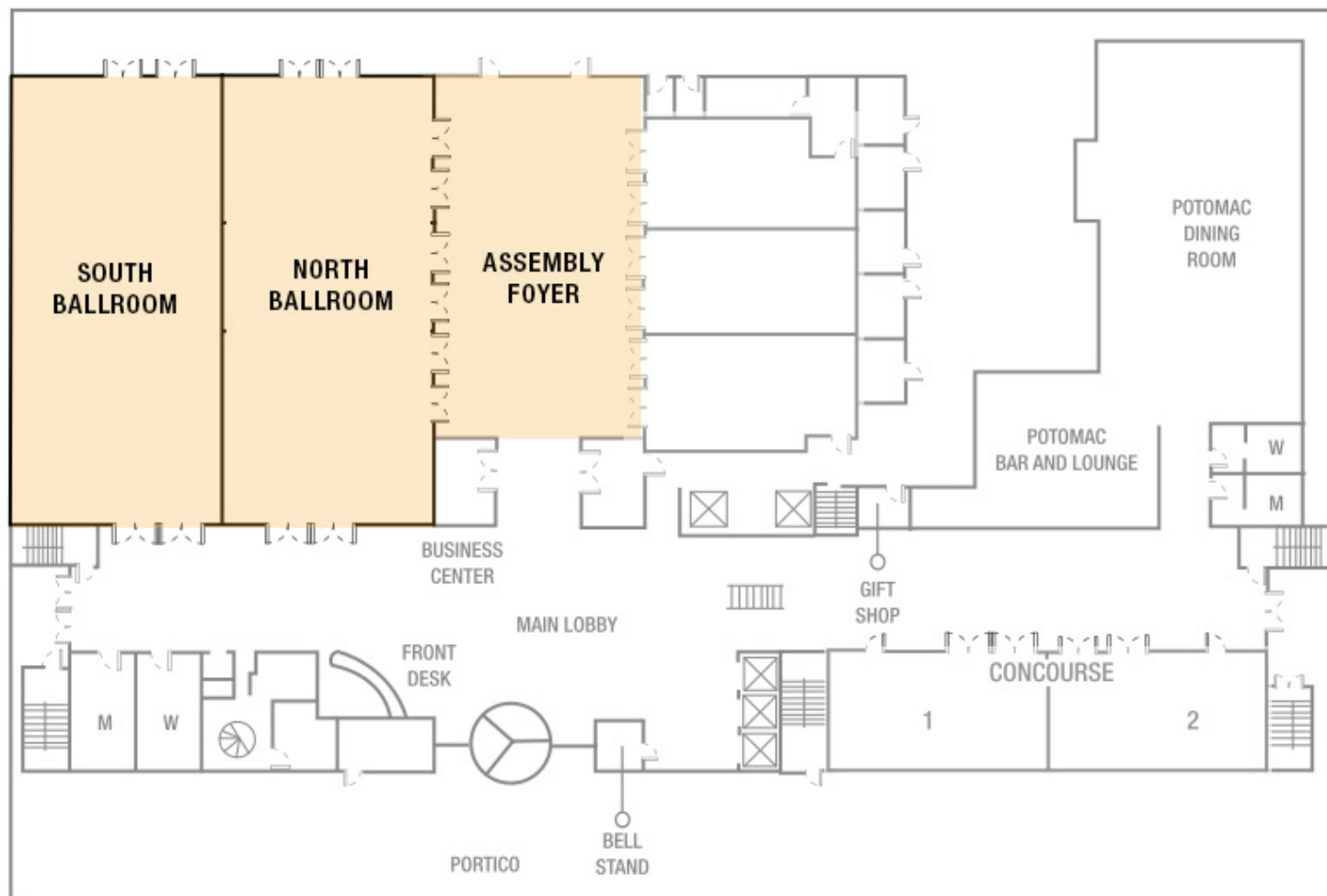
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VENUE MAP



SCHEDULE AT A GLANCE

TUESDAY, MARCH 3

General Session

South Ballroom
8:00 am – 5:00 pm

Networking Lunch & Poster and Demonstration Session

North Ballroom
1:05 – 2:35 pm

Networking Reception

Assembly Foyer
4:50 – 5:50 pm

WEDNESDAY, MARCH 4

General Session

South Ballroom
8:00 am – 3:00 pm

Networking Lunch & Poster and Demonstration Session

North Ballroom
12:10 – 1:10 pm

Roundtable Discussions

South Ballroom
3:00 – 4:30 pm

EVENT INFORMATION

LOCATION

Sheraton Pentagon City Hotel
900 S Orme Street
Arlington, VA 22204

EVENT WEBSITE

[NDIA.org/HumanSystems20](https://ndia.org/HumanSystems20)

EVENT THEME

Human Systems within Multi-Domain Operations

WIFI

Network: Sheraton Meetings
Password: NDIA2020

ATTIRE

Civilian: Business
Military: Uniform of the Day

SURVEY AND PARTICIPANT LIST

You will receive via email a survey and list of participants (name and organization) after the conference. Please complete the survey to make our event even more successful in the future.

EVENT CONTACT

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PLANNING COMMITTEE

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SPEAKER GIFTS

In lieu of speaker gifts, a donation is being made to the Fisher House Foundation.

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AGENDA

TUESDAY, MARCH 3

7:00 am – 5:00 pm

REGISTRATION

ASSEMBLY FOYER

7:00 – 8:00 am

NETWORKING BREAKFAST

ASSEMBLY FOYER

8:00 – 8:15 am

WELCOME AND INTRODUCTORY REMARKS

SOUTH BALLROOM

Jim McCarthy, PhD

Vice President, Instructional Systems, Sonalysts, Inc.

Chair, Human Systems Division, National Defense Industrial Association (NDIA)

8:15 – 9:00 am

FEATURED SPEAKER

SOUTH BALLROOM

BG Stephen L.A. Michael, USA

Deputy Commanding General, U.S. Army Combined Arms Center – Training

9:00 – 9:45 am

FEATURED SPEAKER

SOUTH BALLROOM

Holly Handley, PhD, PE

Associate Professor, Engineering Management & Systems Engineering, Old Dominion University

9:45 – 10:15 am

NETWORKING BREAK

ASSEMBLY FOYER

10:15 – 11:15 am

PANEL: HUMAN SYSTEMS COMMUNITY OF INTEREST (COI)

SOUTH BALLROOM

Michelle Zbylut, PhD

Director, Army Research Institute

Moderator

Mark Draper

Lead, Adaptive Warfighter Interfaces Core Technical Competency, Air Force Research Laboratory
SI&CP Government Co-Chair, Human Systems Division, NDIA

Michael LaFiandra, PhD

Branch Chief, Dismounted Warrior Branch

PS&WP Government Co-Chair, Human Systems Division, NDIA

Kendy Vierling, PhD

Deputy Assistant Chief of Staff, Training and Education Command, U.S. Marine Corps

PAE&T Government Co-Chair, Human Systems Division, NDIA

11:15 – 11:20 am

INTRODUCTION TO TECHNICAL SESSIONS

SOUTH BALLROOM

Jim McCarthy, PhD

Vice President, Instructional Systems, Sonalysts, Inc.

Chair, Human Systems Division, NDIA

SESSION 1: PERSONALIZED ASSESSMENT, EDUCATION, & TRAINING

11:20 – 11:25 am	INTRODUCTION TO SESSION SOUTH BALLROOM Kendy Vierling, PhD Deputy Assistant Chief of Staff, Training and Education Command, U.S. Marine Corps PAE&T Government Co-Chair, Human Systems Division, NDIA
11:25 – 11:45 am	DATASIM: The Data and Training Analytics Simulated Input Modeler Shelly Blake-Plock Chief Executive Officer, Yet Analytics, Inc.
11:45 am – 12:05 pm	Achieving & Sustaining Optimal Human Performance in High-Risk Environments Michael Hirsch President, Assessment Technologies
12:05 – 12:25 pm	Holistic Human Performance Training Combined with Neurotechnology Enhances Performance Potential in AETC and U.S. Army “Training Next” Programs Frances MacInnes Manager, Research & Innovation, Faubert Applied Research Centre Secondary Author: Tyler Masters, PhD
12:25 – 12:45 pm	Getting the Right Data: Implementing Squad Level Shooting and Communication Measures without Overburdening the Soldier Eric Sikorski, PhD Director, Programs & Research, Quantum Improvements Consulting Secondary Authors: Amanda van Lamsweerde, PhD, and Kati Anglin
12:45 – 1:05 pm	AI-Based Performance Assessment and Precision Learning for Aegis Janet Spruill Vice President, Aptima, Inc.
1:05 – 2:35 pm	NETWORKING LUNCH & POSTER AND DEMO SESSION NORTH BALLROOM
2:35 – 3:20 pm	FEATURED SPEAKER SOUTH BALLROOM Joe Parson, Jr. Highly Qualified Expert and Senior Technical Advisor, Synthetic Training Environment Cross Functional Team (STE CFT)
3:20 – 3:40 pm	NETWORKING BREAK ASSEMBLY FOYER

SESSION 2: PROTECTION, SUSTAINMENT, & WARFIGHTER PERFORMANCE

3:40 – 3:45 pm	INTRODUCTION TO SESSION SOUTH BALLROOM Michael LaFiandra, PhD Branch Chief, Dismounted Warrior Branch
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- 3:45 – 4:05 pm **Developing High Performance Indicators (HPI) for Close Combat Forces Study**
Rory O’Brien
 Chief, Program Evaluation Office, MCoE, Maneuver Center of Excellence, U.S. Army
- 4:05 – 4:25 pm **In-Flight Physiological Monitoring**
Lloyd Tripp, Jr., PhD, FAsMA, FAsHFA
 Lead, Acceleration & Altitude Research
- 4:25 – 4:50 pm **CLOSING REMARKS**
 SOUTH BALLROOM
Nic Adams
 National Security Advisor to U.S. Senator Joni Ernst (R-IA)
- 4:50 – 5:50 pm **NETWORKING RECEPTION**
 ASSEMBLY FOYER

WEDNESDAY, MARCH 4

- 7:00 am – 4:30 pm **REGISTRATION**
 ASSEMBLY FOYER
- 7:00 – 8:00 am **NETWORKING BREAKFAST**
 ASSEMBLY FOYER
- 8:00 – 8:15 am **WELCOME AND INTRODUCTORY REMARKS**
 SOUTH BALLROOM
MG James Boozer, USA (Ret)
 Executive Vice President, NDIA
- 8:15 – 9:00 am **FEATURED SPEAKER**
 SOUTH BALLROOM
COL Michael McGurk, USA
 Director, Research and Analysis, Directorate CIMT
- 9:00 – 10:30 am **PANEL: HUMAN BEHAVIOR REPRESENTATION DEFINITIONS, STANDARDS, AND REQUIREMENTS**
 SOUTH BALLROOM
LTC Glenn Hodges, USA
 Assistant Professor and Deputy Director, Naval Postgraduate School
Karim Malek, PhD
 Director and Professor, Technology Institute, University of Iowa
Joe Parson, Jr.
 Highly Qualified Expert and Senior Technical Advisor, Synthetic Training Environment Cross Functional Team (STE CFT)
Jeffrey Thomas
 Program Analyst, HSI, U.S. Army Headquarters Combat Capabilities Development Command (CCDC) G-5
 Co-Chair, Human Systems Division, NDIA

10:30 – 11:00 am **NETWORKING BREAK**
ASSEMBLY FOYER

11:00 – 11:05 am **INTRODUCTION TO TECHNICAL SESSIONS**
SOUTH BALLROOM

Jim McCarthy, PhD
Vice President, Instructional Systems, Sonalysts, Inc.
Chair, Human Systems Division, NDIA

SESSION 3: SYSTEMS INTERFACE AND COGNITIVE PROCESSING

11:05 – 11:10 am **INTRODUCTION TO SESSION**
SOUTH BALLROOM

Mark Draper
Lead, Adaptive Warfighter Interfaces Core Technical Competency, Air Force Research Laboratory
SI&CP Government Chair, Human Systems Division, NDIA

11:10 – 11:30 am **Prioritizing Events with Headline Visualization**
John Ianni
Senior Computer Scientist, Air Force Research Laboratory

11:30 – 11:50 am **Fusing Macrocognition, Commander's Critical Information Requirements (CCIR), and System Interfaces to Facilitate Effective Decision-Making in Multi-Domain Operations**
BG Jeffery Marshall, USA (Ret)
President, Morgan Works

11:50 am – 12:10 pm **Decision Support for Multi-Domain Tactical Combat Casualty Care**
Christopher Nemeth, PhD
Principal Scientist, Applied Research Associates, Inc.

12:10 – 1:10 pm **NETWORKING LUNCH & POSTER AND DEMO SESSION**
NORTH BALLROOM

SESSION 4: HUMAN SYSTEMS METRICS

1:10 – 1:15 pm **INTRODUCTION TO SESSION**
SOUTH BALLROOM

George Salazar
Discipline Lead, Human Computer Interface Tech, Lyndon B. Johnson Space Center, NASA
A&M Government Chair, Human Systems Division, NDIA

1:15 – 1:45 pm **Assessing Cognitive Load for Quantifying Swarming Wave Glider System Usability**
Andre Douglas
Section Supervisor, The John Hopkins University Applied Physics Laboratory

1:45 – 2:05 pm **Defining Realistic Human Behavior Representation in Modeling & Simulation: Leveraging Mature Technology to Inform Standards, Requirements, and Measurement Criteria**
Karim Malek, PhD
Director and Professor, University of Iowa Technology Institute

2:05 – 2:35 pm	Driving Intuitive System Design with Usability Metrics Pamela Savage-Knepshield, PhD Research Psychologist, Combat Capabilities Development Command, Data Analysis Center
2:35 – 3:00 pm	NETWORKING BREAK ASSEMBLY FOYER
3:00 – 4:00 pm	ROUNDTABLE/WORKING GROUP DISCUSSIONS SOUTH BALLROOM
4:00 – 4:30 pm	ROUNDTABLE OUTBRIEF SOUTH BALLROOM
4:30 pm	CLOSING REMARKS SOUTH BALLROOM Kelly Hale, PhD Principal Member, Technical Staff, The Charles Stark Draper Laboratory, Inc. Deputy Chair, Human Systems Division, NDIA

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POSTER AND DEMONSTRATION SESSION

TUESDAY, MARCH 3

Open all day with added viewing time from 1:05 – 2:35 pm

A Measurement Pyramid for Assessing Performance in Uncontrolled Task Environments

Lillian Asiala
Sonalysts, Inc.

James McCarthy, PhD
Sonalysts, Inc.

Demo: A Measurement Pyramid for Assessing Performance in Uncontrolled Task Environments

Lisa Bolin
SimVentions

Matt Wilson
Technology Solutions Group

Adaptive Training in the Future Army Environment

Dennis Boykin
DB4 Consulting, LLC

CSM Jeffery Stitzel, USA (Ret)
DB4 Consulting, LLC

WEDNESDAY, MARCH 4

7:00 am – 1:00 pm

Quantifying Physiologic Response to Cognitive Stress for Training Down Regulation Techniques

David Holmes, PhD
Mayo Clinic

Physiological Sensing in Action: A Step Towards Dynamic Human Performance Assessment in Multi-Domain Operations

Zachary Kiehl
Aptima

Cyber DCO Cultural Patterns and Operational Behavior

Marc Kolenko
MTSI

Developing a Cognitive Readiness Assessment, Education, and Training Framework to Enable Soldier and Leader Effectiveness in Multi-Domain Operations

Jeffery Marshall
Morgan Works

Demo: Impairment Sciences

Tim Stephens
DRUID App

Human Factors for Operational Cyber

Rachel Yang
The John Hopkins University
Applied Physics Laboratory

Dynamic Information Needs Analysis in Subterranean Environments

Farakh Zaman
University of Iowa

BIOGRAPHIES



BG STEPHEN L.A. MICHAEL, USA

Deputy Commanding General

U.S. Army Combined Arms Center – Training

BG Steve Michael was born in Guyana, South America, in 1964, immigrated to the United States in 1979, and commissioned into the Infantry in 1988. His military education includes the Infantry Officer Basic and Advanced courses, the Combined Arms and Services Staff School, and the U.S. Army Command and General Staff College. He holds a B.S. in Civil Engineering from the United States Military Academy and completed the Operations Research Systems Analysis Military Applications Course at Fort Lee, VA. He was the Senior Service College Fellow to Columbia University for FY11. Prior to serving as the Columbia Fellow, he was the Regimental Tactical Officer for 4th Regiment in the United States Corps of Cadets at West Point.

BG Michael began his career at Fort Drum as a Rifle Platoon Leader, Mortar Platoon Leader, Company Executive Officer, and then as the Battalion S4 in 2nd Battalion 87th Infantry, 2nd Brigade, 10th Mountain Division. Immediately after the Career Course, he served as the Battalion S3 for the Columbus Recruiting Battalion in Columbus, OH. Next, he served as the Battalion S4 and Charlie Company Commander for 2nd Battalion 325th Airborne Infantry Regiment, 82nd Airborne Division. He then served as the S3 for 2nd Battalion, 503rd Infantry (Airborne), 173rd Airborne Brigade. Later, he commanded 2nd Battalion, 12th Infantry Regiment at Fort Carson and 1st Brigade Combat Team, 10th Mountain Division (Light) at Fort Drum. Afterwards, BG Michael served as the Deputy Director for the Pakistan Afghanistan and Transregional

Threats Coordination Cell on the Joint Staff, J5. BG Michael then served as the Deputy Commanding General for Operations, 25th Infantry Division at Schofield Barracks, Hawaii and as the G-3/5/7 for U.S. Army Pacific. Most recently, BG Michael served as the Deputy Director for Strategic Planning and Policy (J5), U.S. Indo-Pacific Command at Camp Smith, HI.

BG Michael has a diverse operational background; from Fort Drum, he took part in Operation Restore Hope in Somalia as the Battalion Logistics Officer for 2-87 Infantry. As the Commander of Charlie Company, 2nd Battalion, 325th Airborne Infantry Regiment, 82nd Airborne Division, he deployed as part of Operation Desert Focus to Dhahran, Saudi Arabia, to secure American citizens and forward deployed units in response to the Khobar Towers Bombing. As Operations Officer for 2nd Battalion, 503rd Infantry (Airborne), 173rd Airborne Brigade, in Vicenza, Italy, he deployed on two back-to-back operational missions: Operation Rapid Guardian in Kosovo and Operation Iraqi Freedom I, where the Battalion conducted a night combat parachute assault onto Bashur Drop Zone in Northern Iraq and helped secure the city of Kirkuk.

Next, as ground planner in the Southern European Task Force's Joint Planning Group with the responsibility for Sub-Saharan Africa, BG Michael deployed to Ghana and Nigeria as part of Joint Task Force Liberia to help the Economic Community of West African States stabilize Liberia as President Charles Taylor was exiled to Nigeria. He then served as Aide de Camp to Lieutenant General Kip Ward, then the Deputy

Commander for United States Army Europe and 7th Army; with Lieutenant General Ward, BG Michael deployed to Israel for 10 months as part of the inaugural Israeli-Palestinian Security Coordinator Mission to help prepare the Palestinian Authority take control of Gaza.

As the Commander of 2-12 Infantry, BG Michael deployed for 15 months to Al Doura, Baghdad, as part of the surge. In 2013, BG Michael deployed as the 1st Brigade Combat Team Commander to Regional Command - East on the Security Force's Advise and Assist mission in order to enable the Afghan National Security Forces to stand up, fight, and win in Ghazni, Afghanistan. As Deputy Director for the Pakistan-Afghanistan and Transregional Threats Coordination Cells, BG Michael enabled the Chairman of the Joint Chiefs of Staff best military advice on plans and policy for Afghanistan - Pakistan and Transregional Threats. As Deputy Commander for Operations, 25th ID, BG Michael enabled the Commander, 25th ID and his subordinate Commanders to get their formations ready for the crucible of Ground Combat and Operations, Activities, and Investments throughout the Indo-Pacific. As the G-3/5n for U.S. Army Pacific, was responsible for driving and synchronizing all Army Operations, Activities and Investments and connecting the "The Network" - the operations, plans, intelligence, Component, Combined and Inter-Agency enterprise to deliver results. Similarly, he did likewise as the Deputy J5 for the Indo-Pacific Command in the areas of Strategy, Plans, & Policy.



COL MICHAEL MCGURK, USA (RET)

Director, Research and Analysis Directorate

Center for Initial Military Training, Training, and Doctrine Command, U.S. Army

Michael McGurk enlisted in 1979 in the Infantry as member of the Army

National Guard, which became the start of his over 30 years of uniformed service to the nation. Michael attended and graduated from the United States Military Academy at West Point and, in 1985, commissioned Infantry. 2nd Lieutenant McGurk attended the Infantry Officers Basic Course at Fort Benning, Airborne School, Pathfinder School,

in addition to U.S. Army Ranger School and other trainings. His first duty assignment was 25th Infantry, Schofield Barracks, HI.

In over 26 years as an officer, Michael served as a platoon leader, company commander, battalion adjutant, battalion executive officer, Director of Operations, Instructor, and military attaché (in Paris). During the summer of 2004, LTC McGurk deployed to Baghdad, Iraq, where he was awarded the Bronze Star for meritorious service, returning from combat in January 2005.

Colonel McGurk retired from active military service in 2011 to pursue a civilian career with the Department of Defense. Michael currently works for the Department of the Army as a the Director of Research for the U.S. Army Center for Initial Military Training at TRADOC in Fort Eustis, VA. In his current role, he is the lead for the U.S. Army for the development and fielding of the new Army Combat Fitness Test (ACFT). He directs the test implementation and standards for the entire Active Army, Army National Guard, and Army Reserve, across the globe.



JOE PARSON, JR

Highly Qualified Expert and Senior Technical Advisor

Synthetic Training Environment Cross Functional Team

Joe Parson is a Highly Qualified Expert (HQE) assigned to the U.S. Army Futures

Command Synthetic Training Environment Cross Functional Team (STE CFT) as a Senior Technical Advisor to the Director. He provides critical input in direct support of the Director's vision of enhancing realistic training to ensure readiness for units in the conduct of multi-domain operations in diverse complex operational environments. Parson is dedicated to creating an organizational climate that values each member of the team while fostering a culture of collaboration, communication, and innovation.

Parson served with distinction in the U.S. Army beginning with his enlistment in 1989 and rising to the rank of Command Sergeant Major prior to retirement in 2016. Parson served as the Command Sergeant Major and senior enlisted advisor for Leader Development & Education at the U.S. Army Combined Arms Center in Fort Leavenworth, KS. The U.S. Army Combined Arms Center, organized under the U.S. Army Training and Doctrine Command, is the Army's lead organization for doctrine, training, education, leader development, and lessons learned.

His awards and honors include the Army Civilian Commendation Medal, the Legion of Merit, two Bronze Star Medals and three Meritorious Service Medals. Parson also earned the U.S. Army Combat Action Badge and Parachutist Badge ("Jump Wings"). In addition to his numerous military awards and decorations, Parson has earned several academic degrees and industry certifications. He has earned a BS and MA in Business and Organizational Management, completed advanced leadership and training programs, and received various industry certifications.



HOLLY HANDLEY, PHD, PE

Associate Professor, Engineering Management & Systems Engineering

Old Dominion University

Dr. Holly Handley is an Associate Professor in the Engineering Management and

System Engineering Department at Old Dominion University (ODU). Dr. Handley applies engineering principles and experience in computational modeling

to support projects in human systems engineering research and development. She develops models and methodologies to better represent the human component of socio-technical systems. She is currently part of the committee developing HSI industry-wide standards and was also a member of the original NATO panel to

develop the Human Viewpoint for system architecture development. Currently, her Human System Engineering Laboratory at ODU is investigating questions on the balance of human roles and automation and the implications for personnel capabilities and manpower requirements across systems and organizations.



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- Stay up to date on NDIA upcoming events, whitepapers, policies, and much more
- Network with colleagues in your field and any other
- Collaborate on projects and documents of all kinds
- Plan meetings, seminars, webinars, conferences, or any NDIA-related event
- Foster discussion, promote innovation, and grow your network

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