



**DEPARTMENT OF DEFENSE
HUMAN FACTORS ENGINEERING
TECHNICAL ADVISORY GROUP
Meeting #74**



DOD HFE TAG Program

Holistic Human Factors Engineering

In person 16-20 May 2022

**FAA Mike Monroney Aeronautical Center,
Oklahoma City, OK**

DOD HFE TAG Explained

Origin

The Department of Defense Human Factors Engineering Technical Advisory Group (DOD HFE TAG) was implemented by a Memorandum of Understanding signed by the Assistant Secretaries of the Services in November 1976 for the purpose of coordinating and communicating research and development at the working level among the services and other Government agencies involved in Human Factors Engineering (HFE). The first DOD HFE TAG (TAG) meeting convened on August 9–10, 1977, in Fort Washington, Pennsylvania.

Goals

The major goal of TAG is to provide a mechanism for the timely exchange of technical information in the development and application of HFE by enhancing the coordination among Government agencies involved in HFE technology research, development, and application. TAG also assists in the preparation and coordination of tri-service documents and advisements and sponsors in-depth technical interaction, which aids in identifying HFE technical issues and technology gaps.

Scope

Due to the diversity of the subject matter covered by the HFE discipline, the scope of the technical areas addressed by TAG is broad. TAG defines HFE as dealing with the concepts, data, methodologies and procedures which are relevant to the development, operation and maintenance of hardware and software systems. The subject matter subsumes all technologies aimed at understanding and defining the capabilities of human operators and maintainers. TAG is comprised of technical sessions focused on specific topic areas. Referred to as SubTAGs, they are led by dedicated SubTAG Chairs, see Appendix B.

Composition

TAG is composed of technical representatives from the Department of Defense (DoD) Services, National Aeronautics and Space Administration (NASA), Federal Aviation Administration (FAA), Department of Homeland Security (DHS), and the Veterans Administration (VA), with technical responsibilities in human factors and related disciplines.

Representatives from organizations and activities with allied interests, technical experts in special topical areas, and official representatives of technical societies or industry associations are also invited to attend specific meetings. These representatives must be credentialed by the TAG before attending.

Dr. James “Ben” Petro, Director of the Labs, FFRDCS, & UARCs Directorate, Office of the Under Secretary of Defense for Research and Engineering / Director of Defense Research and Engineering (Research and Technologies) (OUSD(R&E) / DDRE(RT)) serves as OUSD TAG proponent.

More information about the TAG: <https://rt.cto.mil/ddre-rt/dd-rtl/hfetag/>

THEME

Holistic Human Factors Engineering

In the human factors, human performance, and Human Systems Integration (HSI) fields, there is recognition that factors combine and interact to influence efficiency, effectiveness, safety, and satisfaction related to human performance, sometimes in unpredictable ways. It is important to investigate and account for these interactions in order to reach and sustain the capability levels and operational tempo required of modern technology and warfare.

TAG 74 will highlight Holistic Human Factors Engineering (HHFE) and explore the impacts that innovative technologies, ubiquitous threats, and novel approaches have on human mental and physical health, wellness, and capabilities. A myriad of human factors techniques and technologies are relevant to this space, such as wearables for situation awareness; mental imagery for mastery; big-data analytics to target interventions; and mixed reality, artificial intelligence, and machine learning application to selection, training, and system maintenance.

Developments and achievements in HHFE may have broad application and implication across DoD and beyond. Thus, we invite HFE government, industry, and academic communities of interest to work together to share ideas, findings, and advances in this area.

In addition to our community of practice technical briefs, our theme will be addressed by Dr. Melchor Antuñano, Aviation Safety Director, Civil Aerospace Medical Institute (CAMI), Federal Aviation Administration (FAA) through a keynote address on Research Trends at the Civil Aerospace Medical Institute: New Challenges & Opportunities.

Our Plenary Session will provide further insight from LT Col Matthew Taranto, PhD, USAF, and Dr. Anthony Tvaryanas, FAA, who will present Model-Based Human Systems Integration, and Dr. Larry Shattuck and Dr. Nita Shattuck, Naval Postgraduate School (NPS), who will present Lessons Learned from Eight Decades of Teaching and Research in HSI, HFE, and Human Performance.

LEADERSHIP 2022

Chair: Ms. Marianne Paulsen, Navy, TAG Member since 2002

Ms. Paulsen is the Senior Engineering Psychologist at the Naval Information Forces Command within the Force Surgeon's Office. She has a passion for lifelong learning and positive impact through human centric design and outcome based continuous improvement that enhances overall system performance through human optimization and well-being. She synchronizes holistic requirements through alignment of enterprise goals to organizational initiatives and leads multi-disciplinary, collaborative teams to identify root cause and influence viable recommendations for effective resource and risk management within a trade space. She advises organizational maturity, mission readiness, and operational safety through human centric considerations and strategic technology innovation. As a nearly 20-year public servant dedicated to strengthening the Navy Fleet, she applies holistic perspective, specialized knowledge, and data driven decision making to align initiatives, policies, and priorities which enable expanded, persistent global presence of an expert, technically agile IW Force. Ms. Paulsen holds a BS in Psychology from University of Central Florida, an MS in Human Factors and Systems Engineering from Embry Riddle Aeronautical University, and an HSI Certification from Naval Post Graduate School.



Vice Chair: Dr. Helen Fuller, VA, TAG Member since 2017

Dr. Fuller is a Systems Safety Engineer with the Department of Veterans Affairs (VA) Veterans Health Administration (VHA) Office of Health Informatics (OHI) Clinical Informatics and Data Management Office (CIDMO) Human Factors Engineering (HFE) team. Her responsibilities include analyzing, designing, and testing VHA healthcare systems, including processes, workflows, and the optimization of and risk management for system performance. She provides expert advice and counsel on human performance risks and issues and supports the implementation of the human-centered design (HCD) approach across VHA. Dr. Fuller completed her PhD in Biomedical Engineering at the University of Michigan, with a focus on human factors and ergonomics, including cognitive and physical modeling of driver distraction.



Outgoing Chair: Dr. Tom Alicia, Army, TAG Member since 2009

Dr. Alicia is an Engineering Research Psychologist in the HSI Technical Area of the U.S. Army Technology Development Directorate in Moffett Field, CA, who has established a portfolio of basic and applied research focused on unmanned aerial system (UAS) automation and interfaces. He has investigated multimodal sensation and perception applications, led usability testing for operator stations, and explored decision making cues for novice and expert UAS sensor operators to inform future designs. His current focus is on autonomy and interface design principles applied to multi-vehicle manned-unmanned teaming to increase operator capability and situation awareness. Dr. Alicia holds a PhD in Applied and Experimental Human Factors Psychology from University of Central Florida and a Graduate Certificate in Design for Usability.



SCHEDULE

Monday, 16 May

- 1100 – 1630 Meeting Check-in at Visitor Center: pick-up badge and conference material; sign-up for Tour and Social Event
- 1200 – 1400 **Training:** Accessing HSI Body of Knowledge and Community of Practice Online Resources
- 1400 - 1430 Networking Break
- 1430 – 1630 **Workshop:** Review of the HSI Tools Catalog for the Joint HSI Working Group

1630 Close Day One

TAG Leadership Meetings – Invitation Only

- 1645 – 1745 Committee (EXCOMM) / Operating Board (OPBOARD)

Tuesday, 17 May

- 0730 - 1630 Meeting Check-in at Visitor Center: pick-up badge and conference material; sign-up for Tour and Social Event
- 0830 - 0840 **Welcome**
Dr. Ben Petro, Director, Labs, FFRDCS, & UARCs Directorate, OUSD(R&E)
- 0840 - 0900 **Opening Remarks**
Ms. Marianne Paulsen, DOD HFE TAG Chair
- 0900 - 1000 **Plenary Topic: Model-Based Human Systems Integration**
Lt Col Matthew Taranto, PhD, USAF and Dr. Anthony Tvaryanas, FAA
- 1000 – 1100 **Plenary Topic: Lessons Learned from Eight Decades of Teaching and Research in HSI, HFE, and Human Performance**
Dr. Larry Shattuck and Dr. Nita Shattuck, NPS
- 1100 – 1200 **Keynote Address: Research Trends at the Civil Aerospace Medical Institute: New Challenges & Opportunities**
Melchor J. Antuñano, Aviation Safety Director, CAMI, FAA
- 1200 – 1330 Lunch (no-host)
- 1330 – 1400 **New Member Orientation**
- Poster Sneak Peek:** Browse topics and mingle with TAG OPBOARD, see Appendix A for topic list.
- 1400 – 1630 **SubTAGs**
- Trust in Autonomy, Extended Reality, Tech Society/Industry

1630 Close Day Two

Wednesday, 18 May

- 0730 – 1300 Meeting Check-in at Visitor Center: pick-up badge and conference material; sign-up for Tour and Social Event
- 0830 – 1130 **SubTAGs**
- Training, Healthcare Human Factors, Human Performance Measurement I
- 1130 – 1300 Lunch
- 1300 – 1500 **SubTAGs**
- Personnel, Human Performance Measurement II
 - Other: SAE International G-45 HSI Committee Spring Meeting
- 1500 Close Day Three
- 1700 – 2000 Social (No-host)

Thursday, 19 May

- 0830 - 1130 **Tour of Civil Aerospace Medical Institute (CAMI)**
- 1130 - 1300 Lunch (No-host)
- 1300 - 1530 **SubTAGs**
- Modeling & Simulation, Test & Evaluation
 - Poster Session: Q&A with the Authors, see Appendix A for topic list
- 1530 - 1630 **Service Caucuses**

Friday, 20 May

- 0830 – 1000 **SubTAG**
- Cognitive Readiness
- 0830 – 1200 **SubTAGs**
- Standardization, HFE/HSI Application and Management
- 1200 **End of Technical Program**
- TAG Leadership Meetings – Invitation Only**
- 1230 – 1400 Operating Board Post TAG Meeting: Working Lunch
- 1400 – 1530 Warrior Toughness Training Pilot
- 1530 **Close of TAG 74, see you next year!**

PROFESSIONAL DEVELOPMENT

Training: Access the HSI Body of Knowledge and Community of Practice (BOK/COP) Online Resources

Facilitator: R Christopher DeLuca, OUSD(R&E) Advanced Capabilities, EP&S

Co-facilitators: Mitch Woods, OUSD(R&E) Advanced Capabilities, EP&S and Michael O'Neil, Naval Postgraduate School

In 2021, the Joint HSI Working Group deployed the HSI BOK and COP in two digital venues: All Partners Access Network (APAN) and Defense Acquisition University (DAU). This delivery closed the Capabilities-Based Assessment gap analysis for an HSI BOK and providing digital access to HSI resources to practitioners as part of an outreach initiative. This event will provide: 1) an overview of the HSI BOK and COP vision architecture; 2) training for individuals to become registered as community members in the digital venue; 3) opportunity for question and answers to lead owners/moderators; 4) discussion of future functionality improvements from community feedback.

This exercise is intended for attendees that: 1) do not know the HSI BOK exists; 2) do not know how to become a member or access HSI resources such as training, education, tools and methods, or how to reach other HSI practitioners; 3) have an interest in becoming a registered HSI community member in one or both digital venues to stay connected on key HSI topics.

Workshop: Review of the Tools Catalog for the Joint HSI Working Group

Facilitator: Mr. Napoleon Gaither, U.S. Army Futures Command (AFC) / DEVCOM

Co-facilitators: Dr. Liana Algarín, Office of the Under Secretary of Defense for Research & Engineering; Mr. Eric Engel, U.S. Air Force SAF/AQRE; Dr. Christopher Garneau, U.S. Army DEVCOM Analysis Center (DAC)

The Joint Human Systems Integration (HSI) Working Group (JHSIWG) maintains an HSI tools catalog. Comprised of tools employed by HSI practitioners across government and industry, the HSI tools catalog requires periodic revisions by the JHSIWG. The Human Factors Engineering (HFE) Technical Advisory Group (TAG) can help the JHSIWG to ensure that the planned CY22 HSI tools catalog revision is as comprehensive and useful as possible.

This workshop will provide an overview of the HSI tools catalog in its current state and solicit feedback from members of the HFE TAG.

The product from this workshop will yield a set of comments and recommendations for an improved HSI tools catalog, which will allow HFE TAG members and colleagues to discover tools that can augment their ability to optimize Warfighter and human performance. The improved HSI tools catalog will be publicly available on the Defense Acquisition University HSI Community of Practice website.

INVITED SPEAKERS

TAG Welcome

Dr. Ben Petro, SES

Director, Labs, FFRDCS, & UARCs Directorate

Office of the Under Secretary of Defense for Research and Engineering

As the Director of the Labs, FFRDCS, & UARCs Directorate, Dr. Petro supervises and leads a team of senior experts to guide and oversee the Department's ~\$3B annual investment in human systems, medical, biological, and environmental research and regulatory compliance. He ensures portfolio alignment with National and DoD policies, strategies, and guidance and coordinates, integrates, and synchronizes Military Service and Component investments. He is the Senior Human Systems sciences advisor to the Office of the Under Secretary of Defense for Research and Engineering and the lead DoD representative to the White House Office of Science and Technology Policy and Interagency on related topics.

Dr. Petro obtained a Ph.D. in Microbiology and Immunology from Vanderbilt University (2001), M.S.S.I. in Strategic Intelligence from the Defense Intelligence College (2004), and B.S. in Biotechnology from WPI (1997). In 2020, he completed the Senior Executive Fellow program at the Harvard Kennedy School. In addition to supporting the Office of the Secretary of Defense, Dr. Petro has supported the White House National Security Council, the Department of Homeland Security S&T Directorate, and the Defense Intelligence Agency.

Keynote Address

Dr. Melchor J. Antuñano, M.D., M.S.

Aviation Safety Director, Civil Aerospace Medical Institute (CAMI), SES-0602, Federal Aviation Administration (FAA)



Dr. Antuñano was born in Mexico City and is a graduate of the National Autonomous University of Mexico School of Medicine. He completed the Residency Program in Aerospace Medicine at Wright State University in Dayton, Ohio. He was a post-doctoral research associate with the U.S. National Research Council of the National Academy of Sciences at the USAF School of Aerospace Medicine in San Antonio, Texas. He is the Director of the FAA Civil Aerospace Medical Institute (CAMI) in Oklahoma City. He is credited with 940 professional presentations and invited lectures at national and international conferences in aerospace medicine in 42 countries, and with 65 scientific publications covering a variety of aerospace medicine topics.

He is Past-President of the International Academy of Aviation and Space Medicine, the U.S. Aerospace Medical Association, the U.S. Space Medicine Association, and the Iberoamerican Association of Aerospace Medicine. He is a Fellow of the Aerospace Medical Association and the Aerospace Human Factors Association. He is a member of the International Academy of Astronautics. He is Honorary Member of the Austrian, Brazilian, Colombian, Greek, Mexican, Peruvian, Slovenian and Turkish Societies of Aviation/Aerospace Medicine. He is a faculty member at the University of Texas Medical Branch in Galveston and the National University of Colombia School of Medicine. He is a former faculty member at Wright State University School of Medicine. He has received 85 awards and recognitions for his academic, administrative, and research achievements. He has experience as private pilot, parachutist and scuba diver.

Plenary Session

Model Based Systems Engineering

Dr. Anthony Tvaryanas

Federal Aviation Administration (FAA)

Dr. Tvaryanas received a Medical Degree from the Uniformed Services University of the Health Sciences, a Master's Degree in Public Health from Tulane University, and a Ph.D. in modeling, virtual environments, and simulation from the Naval Postgraduate School. Dr. Tvaryanas has nearly 30 years of experience in aerospace and occupational medicine serving in clinical, research, and management positions. He served 24 years in the U.S. Air Force, starting his career as an operational flight surgeon. He transitioned to research at the Air Force Research Laboratory, where he led multiple projects addressing human systems integration challenges related to the adoption of unmanned aircraft systems. Later research explored the application of big data analytics and techniques to very large, combined operational and healthcare datasets to inform operational risk-based decision making. In 2017, he left the government and worked in the commercial sector as a senior scientist and program manager for an operationally focused life sciences research program. Dr. Tvaryanas returned to the government in 2019, when he joined the FAA at the Civil Aerospace Medical Institute as the division manager for the Aerospace Medical Research Division.



Lt Col Matthew T. Taranto, PhD, CAsP

U.S. Air Force

Lt Col Taranto is an Aerospace Medical Association Board Certified Senior Air Force Aerospace Physiologist currently serving as an Assistant Professor of Flight Test Engineering and the resident Physiologist at the Air Force Test Pilot School. Matt was commissioned in the Air Force in 2003 after graduating from Northern Arizona University. He has held a variety of assignments spanning five Air Force Commands and numerous Physiology missions, including serving as the U.S. Air Force Thunderbirds and Weapons School Aerospace Physiologist, and an HSI Division Chief at AFRL. Matt holds graduate degrees in Aeronautical Science/Human Factors, Military Operational Art and Science, and Human Systems Integration. He completed his PhD at the Naval Postgraduate School where he developed Model-Based Human Systems Integration. Lt Col Taranto is a Defense Acquisition University Certified Acquisition Level II Science/Technology Management and Engineering Professional, and a distinguished graduate of the United States Naval Postgraduate School.



Lessons Learned from Eight Decades of Teaching and Research in HSI, HFE, and Human Performance

Dr. Larry Shattuck

Director, Human Systems Integration Program, Chair,
Institutional Review Board at the Naval Postgraduate School



Colonel (retired, U.S. Army) Lawrence G. Shattuck, Ph.D. is a native of Lindenhurst, NY. He is a Senior Lecturer and Director of the Human Systems Integration Program at the Naval Postgraduate School (NPS) in Monterey, California. Dr. Shattuck holds faculty appointments in the Operations Research Department and the Systems Engineering Department where he teaches HSI and HFE. He also serves as the Chair of the NPS Institutional Review Board.

Dr. Shattuck graduated from the United States Military Academy in 1976. He holds an M.S. from Rensselaer Polytechnic Institute in Human Factors Psychology and a Ph.D. from the Ohio State University in Cognitive Systems Engineering. He is also a graduate of the U.S. Army War College. In 1995, he was appointed as an Academy Professor at the United States Military Academy, where he directed the Engineering Psychology Program until his retirement in 2005.

He has been an active researcher in the domain of military command and control for nearly forty years. Dr. Shattuck is a past recipient of the Roland Calori Award for Best Paper in the journal of Organizational Studies; the Gary F. Wheatley Award for Best Paper at the International Command and Control Research and Technology Symposium; and the Best Paper Award in the Journal of Cognitive Engineering and Decision Making. He can be reached at lgshattu@nps.edu.

Nita Lewis Shattuck, Ph.D.

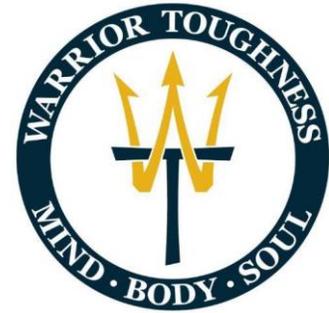
Operations Research Department, Naval Postgraduate School

Dr. Nita Shattuck is a Professor in the Operations Research Department at NPS in Monterey, California. She received her Ph.D. in Behavioral Sciences from the University of Texas, School of Public Health. Dr. Shattuck teaches courses in human factors engineering and human systems integration, directs thesis research, and pursues her research interests in human fatigue in operational settings, individual and team performance, and decision-making.



As the leader of the NPS Crew Endurance Team, she studies ways to improve the lives of military personnel. Dr. Shattuck's work has resulted in sweeping changes to US Navy policy that now mandates the use of circadian-based watchbills and emphasizes benefits of crew rest practices. She is the recipient of multiple awards including the Department of the Navy Distinguished Civilian Service Award, the highest Navy award given to civilians. Dr. Shattuck received her Ph.D. in Behavioral Sciences from the University of Texas, School of Public Health. She can be reached at nlshattu@nps.edu and her faculty website is <http://faculty.nps.edu/nlshattuck>.

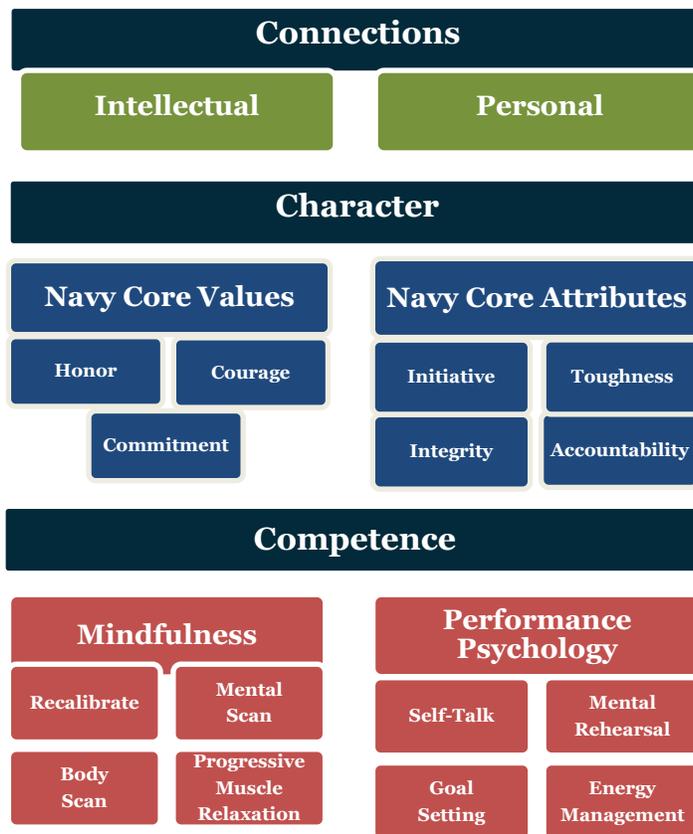
Warrior Toughness Training Pilot



The Warrior Toughness Initiative was presented in the “TAG the Deckplate” session of the 2021 Virtual TAG by FORCM David Twiford, Naval Information Forces (NAVIFOR) Command Master Chief.

CNO’s guidance in The Design for Maintaining our Maritime Superiority identified Warrior Toughness (WT) core attributes as toughness, integrity, initiative, and accountability. Commanders Intent directed focus on the basics with a sharpened focus on warfighting skills integrating WT into everything the Navy does. Everything in WT is tied to the Navy mission at every level of our chain of command. WT supports a cultural shift from compliance or “have to” to internalized motivation or “will and want to.”

WT develops character by strengthening our soul, our identity, who we are. Our professional and personal connections breathe life into who we are and give us that “fighting spirit” for what we do. Connections such as family, faith, and mission unite us to a cause, giving a common purpose. A person with strong connections will have strong commitments, foundational to the warrior mindset.



Our character is a manifestation of our soul. It is knowing who we are, what we believe, and why we do what we do. Strong character results in Sailors who pursue that which is right and do everything that they do with excellence. It provides an anchor, a fighting spirit, which gives Sailors the conviction and commitment to do what is right, to never quit, to win. They are spiritually tough, they know who and what they are fighting for.

In addition to fighting spirit, understanding the connection between the body and brain is crucial to managing the stress response and optimizing performance. Competency in WT is the ability to understand the mind/body connection and execute performance psychology techniques such as self-talk, performance statements, mental rehearsal, goal setting, and energy management to enhance performance.

Competence gives confidence that a person can perform and knows how to do their job.

Character gives trust that a person will get the job done and do it the right way. A Sailor that is competent, has character, and strong connections will be able to take a hit and keep going, perform under pressure, and excel in the day-in and day-out grind. They will be Warrior Tough.

NAVIFOR is expanding the program to address the civilian workforce. Marianne Paulsen, TAG 74 Chair and NAVIFOR Senior Engineering Psychologist is piloting the approach with the TAG Operating Board in order to garner expert, cross service HFE practitioner feedback and input for ensuring efficacy in addressing civilian workforce challenges.

DETAILED AGENDA

PROFESSIONAL DEVELOPMENT: Monday

16 May 2022 | 1200 – 1630 | Room 234

1200 - 1400 **Training:** Accessing HSI Body of Knowledge and Community of Practice Online Resources
R Christopher DeLuca and Mitch Woods, OUSD(R&E) Advanced Capabilities, EP&S Michael O'Neil, Naval Postgraduate School

1400 - 1430 Networking Break

1430 - 1630 **Workshop:** Review of the HSI Tools Catalog for the Joint HSI Working Group
Mr. Eric Engel, Air Force, Mr. Napoleon Gaither, Army, Dr. Christopher Garneau, Army, Dr. Liana Algarín, Office of the Under Secretary of Defense for Research & Engineering

OPENING EVENTS: Tuesday

17 May 2022 | 0830 – 1630 | MMAC HQ Auditorium

0830 - 0840 **Welcome**
Dr. Ben Petro, Director, Labs, FFRDCS, & UARCs Directorate, OUSD(R&E)

0840 - 0900 **Opening Remarks**
Ms. Marianne Paulsen, DOD HFE TAG Chair

0900 - 1000 **Plenary Topic: Model-Based Human Systems Integration**
Lt Col Matthew Taranto, PhD, USAF and Dr. Anthony Tvaryanas, FAA

1000 – 1100 **Plenary Topic: Lessons Learned from Eight Decades of Teaching and Research in HSI, HFE, and Human Performance**
Dr. Larry Shattuck and Dr. Nita Shattuck, Naval Post Graduate School (NPS)

1100 – 1200 **Keynote Address: Research Trends at the Civil Aerospace Medical Institute: New Challenges & Opportunities**
Melchor J. Antuñano, Aviation Safety Director, Civil Aerospace Medical Institute (CAMI), Federal Aviation Administration (FAA)

TECHNICAL SESSIONS: Tuesday

Poster Sneak Peek: Browse Topics and Mingle with OPBOARD

17 May 2022 | 1330 – 1400 | Basement Hallway

New Member Orientation: Learn about TAG with TAG 74 Vice Chair

17 May 2022 | 1330 – 1400 | Room 234

SubTAG: Trust in Autonomy

Chairs: Vicki Ahlstrom, Chelsey Lawson
17 May 2022 | 1400 – 1630 | CAMI Auditorium

1400 - 1415	SubTAG Business and Opening Remarks (Chairs)
1415 - 1445	Human Systems Considerations for Autonomy and Information Fusion <i>Bob Copeland, US ARMY DEVCOM Aviation and Missile Center</i>
1445 - 1515	A Bayesian Inference Method for Estimating Operator Cognitive States in Real Time <i>Spencer Kohn, Perceptronics Solutions</i>
1515 - 1530	Networking Break
1530 - 1600	Measuring Cohesion in Human-Autonomy Teams <i>Samantha Berg, ORAU/Army Research Laboratory</i>
1600 - 1630	Characteristics of a Good Teammate <i>Beth Hartzler, CAE</i>

SubTAG: Extended Reality

Chairs: Marianne Paulsen, Jamie Lukos, Amelia Kracinovich
17 May 2022 | 1400 – 1630 | Room B27/31

1400 - 1415	SubTAG Business and Opening Remarks (Chairs)
1415 - 1445	Scientometric Analysis of Extended Reality Research in Aviation <i>Jeff Dressel, FAA</i>
1445 - 1515	Pre-development Ergonomic Evaluation in Virtual Reality: Assessment Tools and Future Research Opportunities <i>Kirsten Miskovich, NUWC Keyport</i>
1515 - 1530	Networking Break
1530 - 1600	Automated Content Creation for Immersive Maintenance Training <i>Jason Wong, NIWC PAC</i>
1600 - 1630	Augmented Ship Transits for Improved Decision-making Using (ASTRID) <i>Amelia Kracinovich, NIWC PAC</i>

SubTAG: Technical Society/Industry

Chairs: Frank Lacson, Barbara Palmer, Steve Merriman
17 May 2022 | 1400 – 1630 | Room 117

1400 - 1420	TS/I Introductory Presentation <i>Steve Merriman, Barb Palmer, Frank Lacson</i>
1420 - 1520	HFE/HSI Plans, Activities and Accomplishments <i>Frank Lacson, Steve Merriman, Jennifer Narkevicius, Barbara Palmer, Randi Rohrer, Bob Smillie</i>
1520 - 1600	SubTAG Business and Closing Remarks (Chairs)

TECHNICAL SESSIONS: Wednesday

SubTAG: Healthcare Human Factors

Chairs: Tandi Bagian, Jill Marion, Mihriban Whitmore
18 May 2022 | 0830 – 1130 | CAMI Auditorium

0830 - 0900	Lessons Learned from Operationalizing HFE Methods for Use in Healthcare Environments <i>Helen Fuller, Timothy Arnold, Kas Adams, Kyle Maddox, VA</i>
0900 - 0930	Novel Use of Patient Safety Risk Management Tools for Physician Burnout Prevention <i>Kristin Chrouser, VHA-Ann Arbor</i>
0930 - 1000	Using Eye Tracking Metrics to Quantify Simulator Learning <i>James Bliss, Leidos, Inc.</i>
1000 - 1030	Natural Language Processing in Helping to Study and Design Clinical Work Systems <i>Timothy Arnold and Helen Fuller, VA</i>
1000 - 1030	Group Discussion of Safety Reporting and Metrics <i>Kristin Chrouser, Timothy Arnold, and Helen Fuller, VA</i>
1100 - 1130	SubTAG Business and Closing Remarks (Chairs)

SubTAG: Human Performance Measurement I

Chairs: Justin Stofik, Jeff Dressel
18 May 2022 | 0830 – 1130 | Room: B27/31

0830 - 0900	Analytically Oriented Human Performance Measures as Constituents of Model Based Human Systems Engineering (MBHSE) <i>C.J. Hutto, Georgia Tech Research Institute (GTRI)</i>
0900 - 0930	Establishing Guidelines to Collect Speech <i>Shan Lakhmani, U.S. Army Combat Capabilities Development Command Army Research Laboratory</i>
0930 - 1000	Is BOS the Boss? BOS vs BARS and Other Measurement Scales as a Method for Rapid Competency Assessment <i>Carl Persing, Infoscitex, a DCS Company</i>
1000 - 1030	Break
1030 - 1100	Operator State Monitoring (OSM) – Simulation development and measurement methods for correlation of self-reported and measured workload <i>Matthew Shivers, US Army - Army Futures Command</i>
1100 - 1130	SubTAG Business and Closing Remarks (Chairs)

SubTAG: Training

Chairs: Adam Biggs, Jared Young
18 May 2022 | 0830 – 1130 | Room: 117

0830 - 0900	CV-22 Virtual Maintenance Training Solution: An operational assessment <i>Beth M. Hartzler (Defence & Security), & Winston Bennett (Air Force Research Laboratory)</i>
0900 - 0930	Attentional Training using Scaffolding <i>Angela Sebok, TiERI Performance, LLC</i>
0930 - 1000	Gamified Learning Tool for Understanding Naval Netted Force Concepts <i>Terence Andre & Marc Gacy, TiERI Performance, LLC</i>
1000 - 1030	Building a Learning Management System to Train Future Aviators <i>Scott Scheff, Andi Sue Phillips, John Wilson (HF Designworks, Inc.), John O'Malia (Thayer Mahan, Inc.), & Beth Atkinson, James Pharmer (Naval Air Warfare Center Training Systems Division)</i>
1030 - 1100	Modernized Data Collection and Analysis for Scalable Marksmanship Training Program Evaluation <i>Greg Huffman (Leidos, Inc.), Joseph Hamilton (Hamilton Strategic Solutions), LT John Casachahua, Rachel Markwald (Naval Health Research Center), & LCDR Adam Biggs, (Naval Special Warfare Command)</i>
1100 - 1130	SubTAG Business and Closing Remarks (Chairs)

SubTAG: Personnel

Chairs: James Johnson
18 May 2022 | 1300- 1530 | CAMI Auditorium

1300 - 1330	The Value of a Sensitivity Review for Writing Situational Judgement Test Items Registrants <i>Shane Sizemore, Ph.D., Infoscitex, a DCS Company</i>
1330 - 1400	Determining the Utility of Serious Games for Cyber Aptitude Assessment <i>Thomas Carretta, Ph.D., Air Force Research Laboratory</i>
1400 - 1430	Factors that Predict Inclusivity in Exceptional Teams <i>Pete Khooshabeh, Ph.D., Combat Capabilities Development Command, Army Research Laboratory</i>
1430 - 1500	Air Force Self-Description Inventory (SDI-O) Evaluation: Future Directions <i>Rusty Wilson, Infoscitex, a DCS Company</i>
1500 - 1530	SubTAG Business and Closing Remarks (Chairs)

SubTAG: Human Performance Measurement II

Chairs: Justin Stofik, Jeff Dressel

18 May 2022 | 1300- 1530 | Room: B27/31

1300 - 1330	Individual Difference Correlations in Two Route Planning Task Studies <i>Jessica Armstrong, 711th Human Performance Wing - Air Force Research Lab</i>
1330 - 1400	Can We Trust Wearable Personal Status Monitors: Current state of sleep tracking performance and implications for military use <i>Dale Russell, Commander, Naval Surface Forces</i>
1400 - 1430	Break
1430 - 1500	Human and Human-Machine Experimentation for Combat Medicine <i>Stony Trent, The Bulls Run Group, LLC</i>
1500 - 1530	SubTAG Business and Closing Remarks (Chairs)

SAE International G-45 HSI Committee Spring Meeting

Facilitator: Eric Stohr, Sr. Human Factors Engineer, Basic Commerce & Industries

18 May 2022 | 1300- 1530 | Room: 117

TECHNICAL SESSIONS: Thursday

SubTAG: Test & Evaluation

Chairs: Darren Cole, Stephanie Blake

19 May 2022 | 1300 – 1530 | CAMI Auditorium

1300 - 1330	Methods and Measures for Evaluating Aids Supporting Aviation Decision Making and Situation Awareness <i>Ms. Katie Ernst, Applied Decision Science, LLC</i>
1330 - 1400	An AI Assurance Ecosystem <i>Dr. Stony Trent, Ph.D., The Bulls Run Group, LLC</i>
1400 - 1430	Leveraging Data Science and Cloud Tools to Enable Continuous Reporting <i>Presenter TBD, Air Force Operational Test and Evaluation Center (AFOTEC), Detachment 5</i>
Distribution D: Department of Defense and U.S. DoD contractors only	
1430 - 1500	NSWCDD and NUWCNPT Bridge Light Assessment <i>Mr. Adam Goetz, NSWCDD</i>
1500 - 1530	SubTAG Business and Closing Remarks (Chairs)

SubTAG: Modeling & Simulation

Chairs: COL James Ness, Mihriban Whitmore, and Alex Hoover

19 May 2022 | 1300 – 1530 | Room: B27/31

1300 - 1330	Integrated Model Based Human Systems Engineering (MBHSE) Using the Systems Modeling Language (SysML) <i>C.J. Hutto, Georgia Tech Research Institute</i>
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1330 - 1400	Laser Dazzle/Glare Effects in Virtual Reality <i>Leon McLin, Air Force Research Laboratory/711th Human Performance Wing/Directed Energy Bioeffects Division</i>
1400 - 1430	Assessing the Simulation of Detection & Recognition Metrics Affecting Soldier Survivability <i>James Ness, Federal Aviation Administration William J. Hughes Technical Center</i>
1430 - 1530	SubTAG Business and Closing Remarks (<i>Chairs</i>)

Poster Session: Q&A with the Authors, see Appendix A

19 May 2022 | 1300 – 1530 | Basement Hallway

TECHNICAL SESSIONS: Friday

SubTAG: Cognitive Readiness

Chairs: Kellie Turner, Anne Cybenko
20 May 2022 | 0830 – 1000 | Room: 117

0830 - 0900	The Effects of Framing and an Emulated Social Media Environment on Levels of Memory Representation <i>Kathleen Larson, PhD., Air Force Research Laboratory Business Meeting</i>
0900 - 0930	Area Remote Combat Exposure Assessment (ARCEA): Flagging ISR events that pose mental health risks <i>Kirsten Rice, Air Force Research Laboratory</i>
0930 – 1000	SubTAG Business and Closing Remarks (<i>Chairs</i>)

SubTAG: Standardization

Chairs: Bob Copeland, Daniel Wallace
20 May 2022 | 0830 – 1200 | CAMI Auditorium

0830 - 0900	Air Force Lifecycle Management Center Standard Process for Human Systems Integration Planning <i>Rachel A. Heffner, Air Force Lifecycle Management Center, Crew Systems Engineering & Human Systems Integration Enterprise</i>
0900 - 0930	SAE International G-45 HSI Committee – Recent Accomplishments, Activities and Observations <i>Stephen C. Merriman, SCMerriman Consulting LLC</i>
0930 - 1000	Standards initiatives affecting Army Aviation <i>Bob Copeland, USARMY DEVCOM AVMC</i>
1000 - 1030	Helmet Mounted Display Symbology for Use During Reduced Visibility Landings <i>Ben Johnson, NAVAIR Human Systems Engineering Department</i>
1030 - 1100	Discussion of DVES Displays and Airworthiness <i>Christopher R. Taylor, USAF/AFLCMC/EN-EZFC</i>
1100 - 1130	Congruence of Three Dimensional and Conformal Symbology Standards <i>Bob Copeland, USARMY DEVCOM AVMC</i>
1130 - 1200	SubTAG Business and Closing Remarks (<i>Chairs</i>)

SubTAG: HFE/HSI

Chairs: Chelsey Lawson, Vicki Ahlstrom
20 May 2022 | 0830 – 1200 | Room: B27/31

0830 - 0845	Welcome and SubTAG Business <i>Vicki Ahlstrom, FAA; Chelsey Lawson, NSWCCD</i>
0845 - 0915	Integrating User-Centered Design into Agile Development <i>Richard Thompson, Naval Surface Warfare Center Dahlgren</i>
0915 - 0945	Human Systems Responsibilities of the Office of the Under Secretary of Defense for Research and Engineering <i>Liana Algarín, PhD and Katie Stilling, Strategic Analysis, Inc</i>
0945 - 1015	Heavy-duty Truck and Pedestrian Crashes at Signalized Intersections: Comparison of high-vision and low-vision cab drivers' performance on a driving simulator <i>Jared Young, US DOT Volpe Center</i>
1015 - 1030	Break
1030 - 1100	A Rotary Wing Degraded Visual Environment (DVE) Critical Task Analysis, Certification Plan, and Requirements Development <i>Kristina Kuhlken, Georgia Institute of Technology - Georgia Tech Research Institute</i>
1100 - 1130	Human Cognition in Future Vertical Lift Complexity in Information Systems <i>Katie Ernst, Applied Decision Science, LLC</i>
1130 - 1200	Aeromedical and HSI Aspects of the U.S. Army's Future Vertical Lift Program <i>John Crowley, U.S. Army Aeromedical Research Laboratory</i>

End of Technical Program

Thank you for attending TAG 2022!

DoD HFE TAG #75

Spring 2023

Host: TBD Location: TBD

Check the TAG Website and Social Media for updates

<https://rt.cto.mil/ddre-rt/dd-rtl/hfetag/>



<https://mobile.twitter.com/dodhfetag?lang=en>



<https://www.facebook.com/DoDHFEtag/>



<https://www.linkedin.com/groups/6786183>

Appendix A: Poster List

Can We Trust Wearable Personal Status Monitors: Current state of sleep tracking performance and implications for military use

-Dale Russell, Commander, Naval Surface Forces

Characteristics of a Good Teammate

-Beth Hartzler, CAE

Characterization of Metabolic Adaptation and Kinematics in an Ankle-Based Exoskeleton System During Steady State Walking

-Isabella O'Keefe, DEVCOM Soldier Center

CV-22 Virtual, Maintenance Training Solution: An Operational Assessment

-Beth Hartzler, CAE

Heavy-duty Truck and Pedestrian Crashes at Signalized Intersections: Comparison of high-vision and low-vision cab drivers' performance on a driving simulator

-Jared Young, US DOT Volpe Center

Human Sensing in Noisy Environments

-Nancy Ronquillo, Naval Information Warfare Center Pacific

Individual Difference Correlations in Two Route Planning Task Studies

-Jessica Armstrong, 711th Human Performance Wing - Air Force Research Lab

Lessons Learned While Advancing an Infrastructure for Wearable-based Sleep Data Capture in US Navy Surface Forces

-Dale Russell, Commander, Naval Surface Forces

Review of the HSI Tools Catalog for the Joint Human Systems Integration Working Group

- Napoleon Gaither, Army

Second Moderate-Prevalence Target Improves Detection of Low-Prevalence Target During a Dynamic Motion Stimuli Visual Search Task

-Sylvia Guillory, Naval Submarine Medical Research Laboratory

Signal Detection Without Correct Rejections

-Anu Venkatesh, Naval Information Warfare Center Pacific

Appendix B: SubTAG Chairs 2022

Cognitive Readiness	Kellie Turner Anne Cybenko	kellie.turner@us.af.mil anne.cybenko.1@us.af.mil
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