



Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

Senior Leader Perspective: I have been grateful for the opportunity to serve as the HS Col's Chair the last two years, and I believe this is my fourth time offering a Senior Leader perspective. Coincidentally, if I could summarize the culmination of two years in one word, it would be this—Perspective. The last two years have brought numerous opportunities to cultivate and practice new perspectives.



I have always known on some level the contribution of human systems research to the defense of our nation; it was a primary reason I sought a career with the Army not long after 9/11. As I reflect on the many events of 2020 and 2021, however, there can be no dispute as to the relevance of the human sciences. If we were to catalog the largest challenges confronting our nation and military today, we could readily default to the issue of "Modernization." That is one perspective, and it is real. I will submit another equally valid perspective, and it is this: DoD's greatest challenges and most innovative solutions will not reside so much in technology, but in people. It is the human sciences' great charter to understand the human mind, body, and will. It also is imperative to apply that scientific understanding toward creating the conditions that promote the best performance, the most desirable outcomes, and the human capability for the Services to defend our nation. Each day we embrace our charter through our research on personalized assessment, education, and training; system interfaces and cognitive processes; and protection, sustainment, and warfighter performance. We also fulfill our responsibilities as scientific leaders each time we recruit new scientific talent to the DoD, inspire a STEM student to pursue a career in a human science, and collaborate as a community to produce scientific knowledge and products for the betterment of the warfighter and society.

I am impressed with the quality and relevance of what each stakeholder in the HS Col does, and I am thankful for the support of the Steering Group, Working Group, and Sub-Area Leads. I am also grateful for the diligent efforts of Katie Stilling, Liana Algarín, Jill McQuade, Al Livada, and Carolyn Parish in keeping the wheels of the HS Col machine moving forward. I appreciate the amount of time it takes to make this community robust, which is possible only with our dedicated engagement. As we transition the HS Col from the Army to the Navy in FY22, I know we are in good hands.

Dr. Michelle Zbylut, Army Research Institute, Outgoing HS Col Chair

HUMAN SYSTEMS Col

Vision: Develop & deliver technologies to enable, sustain, enhance & quantify human performance for measurably improved mission effectiveness

Mission: Enhance mission effectiveness through:

- 1) *Integrated sims for mission training & experimentation*
- 2) *Human-machine designs for mission effectiveness,*
- 3) *Assessment of operator effectiveness*
- 4) *Operating through battlespace stresses, and*
- 5) *Mastering the PMESII battle space.*

Key Products: Integrated service roadmaps; Col taxonomy, budget & programs; Seedling and ARAP proposals, success stories and new collaboration opportunities.

Key Personnel:

OSD Chair: Dr. Ben Petro, OUSD (R&E)

Col Chair: Navy to Chair

Navy Lead: Dr. John Tangney, Office of Naval Research

Air Force Lead: Dr. Guarav Sharma, Air Force Research Lab

Army Lead: Dr. Corde Lane, Army Research Lab

Army Lead: Dr. Robb Wilcox, Army Research Lab

Army Lead: Dr. Michelle Zbylut, Army Research Institute

SOCOM Rep: Ms. Lisa Sanders, SOCOM

WG Chair: Navy to Chair

PAE&T Lead: Dr. Kendy Vierling, Navy

SICP Lead: Dr. Mark Draper, Air Force Research Lab

PSWP Leads: Dr. Peter Squire, Office of Naval Research

Questions or Feedback? Please send your comments to our Col's email at hscoi-contact@sainc.com. Thanks!

DISTRIBUTION A: Approved for public release - distribution unlimited. Case Number AFRL-2021-3294, OPR: 711 HPW/RH



Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

Hails & Farewells

News - We are all extremely grateful to both Dr. Zbylut and Dr. Ervin for their outstanding leadership and dedication as the Human Systems Col and Working Group Chairs — especially during the very challenging times of the Covid pandemic. Thankfully, they are staying connected to our Community! The Navy has the Chair for the next two years.

Farewell - Dr. Rajesh Naik has moved on from his job as both Chief Scientist, 711th Human Performance Wing, Air Force Research Laboratory and Air Force Lead for our Col. Dr. Guarav Sharma, who has already been active in the Col, has taken on both roles as “Acting”. Welcome to your new leadership role Dr. Sharma!

Col Highlights - Past Events

2021 Col Information Exchange and Review to OSD. We successfully presented our current technology investments, program successes, and identified future technology opportunities to inform important resource decisions. This review was moved from the Col Annual Update normally held in January, and included the additional opportunity to review and determine vectoring needs between the Col and Modernization Priorities roadmap champions.

POC: Katie Smith Stilling, Strategic Analysis, Inc.

Tri-Col Independent Research & Development (IR&D) Event: We successfully executed our first ever tri-Col IR&D Technical Interchange Meeting (TIM) along with the Bio-Medical and Biotechnology Col in a virtual forum from 21-24 June. Our government teams provided excellent real-time feedback to 13 companies that presented a total of over \$20 million in IR&D across 30 projects. This was a great joint effort between over 75 government and industry participants as we looked for potential collaborations during the many informative presentations. Actions and POCs were shared from both sides and we have a plan to send out a Post-TIM Survey to industry participants in October.

POC: Al Livada, 711 Human Performance Wing

Col Highlights - “ Next Up ”

Editor’s Note: This Edition will be in Public Affairs Review as the Col Annual Meeting is convening. We’ll let you know how successful it was next time!

Col Annual Meeting. This year’s meeting will be virtual and held on Sept 28-29. The meeting objectives are to review FY21 accomplishments, discuss FY22 strategy, provide guidance, and engage in a series of presentations between the Col and its vital partners and stakeholders to hopefully find new collaboration opportunities. Key agenda items are a Steering Group Member Panel on how to improve the transition from basic to applied research, Service Portfolios, Subarea Updates, and presentations from our partners and stakeholders.

POC: Katie Smith Stilling, Strategic Analysis, Inc.

Col Roadmap Review. Dr. Zbylut will brief our latest roadmap to OSD staff on 26 October as part of the plan for all Col to brief over an 18 month cycle. Our last round was in 2019, and we’re briefing a draft of 2021’s Roadmap to the Steering Group at the Annual Meeting to allow time to make final adjustments on SG guidance.

POC: Katie Smith Stilling, Strategic Analysis Inc.

The NDIA Human Systems Division has continued planning for the Spring 2022 Conference. This is far in the future, but it’s always a very anticipated event with industry. The theme will be “Teaming at the Edge-Joint Cognitive Systems”, and over the next Quarter the division will continue planning the date and location of the conference as well as starting to build the program of speakers and call for presentations and posters. We look forward to coordination with the Human Systems Col to build a strong program for 2022. Event details at <https://www.ndia.org/divisions/human-systems> as they’re made available.

POCs: Chair of NDIA HSD, Dr. Kara Orvis, Aptima, Inc. at korvis@aptima.com; Deputy Chair of NDIA HSD, Dr. Lillian Asiala, Sonalysts, Inc. at lasiala@sonalysts.com

Major Annual Events/Activities 2021

NDIA Human Systems Conference	Mar
ARAP Winner Announced	Apr
Seedling Proposal Data Call	Jun
Col Information Exchange & Review	Jun
Independent R&D (IR&D) TIM w/ Industry	Jun
Human Factors Engineering TAG	Jun
COI Annual Meeting	Sept
Roadmap Review w/OSD (R&E)	Oct
I/ITSEC	Nov/Dec

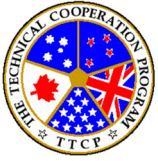


Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

International



Reinvigoration of The Technical Cooperation Program, Human Resources & Performance Group (TTCP HUM)

Training Action Group. The Group's mission is to apply scientific innovation and best practices to identify the key training collaboration areas between the TTCP Nations, as well as recommend and facilitate delivery methods which will enable outcomes to be realized in a timely and effective way. The goal is to improve defense capability, readiness, and provide evidence-based policy.

Output Examples: Inform the HUM Executive of collaborative activity options related to training research, and provide recommendations on both how to deliver these activities and completing Action Group work in an 18 month timeframe.

Initial list of common interest S&T topic areas:

- Measurement & data exploitation to improve training outcomes
- Techniques for competency-based training
- Appropriate use of immersive technologies in training
- Use of adaptive learning technologies
- Use of Artificial Intelligence/Machine Learning technologies in supporting training delivery
- Representation of the Future Operating Environment
- Physical aspects of training
- Body/mind cross-over

POC: U.S. contact is Dr. Glenn Gunzelmann, 711 Human Performance Team

Advanced Distributive Learning (ADL) and NATO Partner on a Smart Mobile Micro-learning App.

A major component of the DoD's strategies for modernizing learning involves incorporating mobile learning systems to support micro-learning, self-directed learning, and increased opportunities for point-of-need support. In direct support of that strategy, the ADL Program has previously researched and developed a "PERvasive Learning System" or "PERLS", which is a mobile-learning platform that provides personalized micro-learning content based on user interactions, learning objectives, and context.



PERLS Capabilities. Learning activities are offered from a mobile application with a robust back-end content management system. This platform is media rich, offering podcasts, videos, documents and links with a front-end mobile application that presents itself as a recommender system of sorts, offering media rich learning content, including the ability to adapt its content suggestions based on learning preferences, skill level, and relevance to end outcomes. Additionally, PERLS is instrumented with a programming interface which allows for tracking of learner progress.

NATO Interest. NATO has been an interested stakeholder of PERLS and has been working closely with ADL to add functionality and help test the learning system. Cooperatively, NATO has white-labeled the PERLS software and branded a version called NATO's e-Learning Network Application (NeNA). Both organizations are continuing the development of PERLS, with NATO focusing on user interface enhancements and ADL focusing on cloud platform optimization and accreditation. The long-term goal for the program is full DoD accreditation in a DoD secure cloud as well as an on-premise option, both offering a streamlined acquisition opportunity for DoD agencies to fully embrace and employ. POC: Dr. Sae Schatz, The ADL Initiative

From Our Stakeholders and Partners

"TED Topics" Anniversary! This November marks the two-year anniversary of OSD's DoD Human Performance Optimization (HPO) Technological & Educational Digest (TED). Originally created by Dr. Edward "Teddy" van Opstal, HPO TED raises awareness of scientific progress and advances through the monthly publication of a collection of articles from DoD and the scientific community. The publication highlights research, best practices, and advances in both optimized physical and cognitive performance, human-machine interface, and stress resilience. It also provides a calendar of events and quirky "snippets" of information. You are invited to submit summaries of your research or publicize your upcoming events.

⇒ Please join our mailing list! OSD's DoD HPO TED is a Distro C publication.

POCs: Editor-in-Chief, Dr. Liana Algarín and Managing Editor, Ms. Natalie Chesko both at OSD



Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

Col Accomplishments (Continued)

Measuring and Advancing Soldier Tactical Readiness and Effectiveness (MASTR-E) Uses the Health Readiness and Performance System (HRAPS) LifeLens Technologies Capability.

S&T highlight: MASTR-E and HRAPS together provide objective information which will enable the Army to begin managing the Soldier as a weapon system by mitigating non-battle injuries, maintaining overmatch, and maximizing human potential. This will keep Soldiers in the fight longer and push them to fight harder, ultimately increasing their lethality.

HRAPS and Lifelens Capabilities. HRAPS is a system of systems, consisting of open-architected Government and Commercial Off-the-Shelf human-wearable physiological, cognitive and psychological sensors, algorithms, combined with suggested leader actions developed in an incremental, phased approach. The LifeLens' Ascent Platform's use in MASTR-E, with its patch-based physiological status monitoring system, provides Soldiers with advanced real-time capabilities never seen before on the battlefield. The ultra-miniature, low profile electronics units are reusable, water resistant, skin safe, and can be worn for 72+ hours. The system can measure heart rate, skin temperature, respiration, clinical ECG, precision movement, posture, gait, thermal gradient, environmental conditions, and phonograms. These capabilities give MASTR-E researchers the ability to collect a wide range of data over an extended period of time, and work with mature sensors likely to be fielded in an operational setting.

Overall, MASTR-E's capabilities of performance optimization algorithms and the underlying predictive modelling that use HRAPS sensors as direct inputs will enhance the main goal of HRAPS which is to mitigate non-battle injuries. Leaders can use MASTR-E's algorithms of predicting physical and cognitive status to enhance Soldier training and maximize their potential.

POC: Ms. Karen Gregorczyk, Army DEVCOM Soldier Center

Marine Air-Ground Task Force Warfighting Exercise (MWX) 3-21 Success. Both the Streamlined Marine After Action Review Tool - Visualization (SMART-Viz) and Testbed to Enable Autonomy for Marines and Seals (TEAMS) programs participated in technology experimentation at MWX 3-21 in 29 Palms, CA. SMART-Viz tested the Interactive Tactical Decision Game tool to pull vignettes for after action review, resulting in early consideration for inclusion into the Marine Corps first delivery of the Live, Virtual, Constructive-Training Environment in December 2022. The TEAMS program was able to successfully generate 3D terrain for the large urban training facility and upload that terrain into a commercial game engine. This capability allowed Marines to utilize the simulation to conduct rehearsals and planning prior to conducting live operations. Both programs plan to participate in MWX 1-22 in October.

POC: Dr. Peter Squire, Office of Naval Research

Fatigue Mitigation in the Missileer Community. The Fatigue and Sustained Attention Performance Impacts Team was part of an exciting opportunity to examine fatigue in the Missileer community and see the actionable results from that research. The 20th Air Force enacted long-duration field operations to safeguard personnel from the SARS CoV-2 (COVID-19) pandemic, resulting in significant changes to their workload and speed of operations. The 341st Missile Wing at Malmstrom Air Force Base used this opportunity to study fatigue mitigation strategies, including sleep, fitness, and nutrition education, as well as alternate alert durations and shift schedules.

The team provided data analysis and interpretation support for the study, which identified a viable alternative schedule emphasizing protected recovery and dedicated squadron training times that can be continued at the conclusion of pandemic operations. This will also create schedule stability. When compared to the 24-hours-on and 24-hours-off alert cycles, the interventions implemented during the study improved satisfaction among Missileers in areas such as medical readiness and physical and mental health.

Results: Due to the documented improvements across health measures and subjective impressions of the Missileers, the 20th Air Force decided to adopt the scheduling model implemented under the study. Not only did this study contribute to operator safety and effectiveness during the pandemic, but it's estimated that the interventions will result in a 74.6% medical readiness improvement, increased morale, and annualized fuel savings of \$75,000 for the Air Force.

POC: Dr. Megan Morris, 711 Human Performance Wing, Air Force Research Laboratory





Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

Col Accomplishments (Continued)

Human Performance Eco Crucible Event Demonstration

Earlier this year, members of ONR, Naval Health Research Center, the Mayo Clinic, Lockheed Martin, and Scoring Tech executed an exercise of the Human Performance Ecosystem (HPEco) at the Crucible training facility in Fredericksburg, VA. HPEco tracked location and vitals on numerous Marine and Other Government Agency (OGA) personnel throughout various tactical scenarios, both live fire and simulations. They were able to correlate a rise in heart rate and fatigue to a drop in decision making and marksmanship. Video (static and GoPro) was filmed concurrently to track movement and correlate the human performance data to actions in order provide the OGA personnel and Marines a comprehensive after action to improve their tactical performance. Concurrently, representatives from the Close Combat and Lethality Task Force, and Training and Education Command, were briefed on the Tactical Stress Marksmanship Assessment (TSMa), a DoD initiative with similar goals to HPEco. TSMa is essentially a “stress shoot” with wearables for participants. Training and Education Command (TECOM) reps indicated they could do a test run with 36 students with potential test dates for Schools of Infantry in August and October 2021.

POC: Dr. Peter Squire, Office of Naval Research

New York Times and Forbes Featured Neurotechnology Startup Visits Air Force Research Laboratory Neural Interfaces

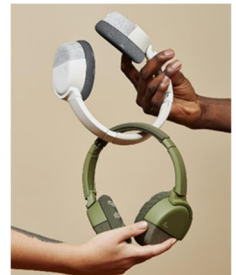
A Collaborative Research and Development Agreement with Neurotechnology will allow the Air Force to test and evaluate a newly developed pre-market emerging brain machine interface technology. The Neurotechnology technology is designed to non-invasively capture brain signals. A key advantage to their product is its ease in setup and general usability in a form factor that Airman could more easily use operationally versus earlier configurations. Future iterations of the product could be used for detecting Airman Fatigue and/or optimizing learning and training in real time. Additional details can be found in:

- ◆ Forbes.com: This Neuroscientist’s Headphones Can Tell When You’re Distracted - And Help Boost Your Focus
- ◆ Washington Post: Why tech firms like Facebook and Neurotechnology want to link your brain to computers
- ◆ New York Times: <https://www.nytimes.com/2021/04/02/business/office-remote-work-anxiety.html>

POC: Dr. Nate Bridges, 711 Human Performance Wing, Air Force Research Laboratory

Tactical Service Oriented Architecture (TSOA) Transitions. Two applications developed by ONR were released as part of a recent TSOA Build by Marine Corps System Command (MARCORSYSCOM). The first application is a Rapid Request Application which allows a Marine at the tactical edge to submit a rapid request for logistics supplies or services. The other is a Tactical Reports Application that a Marine also at the tactical edge can use to create, submit, and review any supported tactical report. The reports support a common, shared view of the battlespace and greatly improve on the current process of submitting reports via radio, chat, Excel, and email. Several other ONR applications have been transitioned to MARCORSYSCOM and are undergoing review and integration into upcoming TSOA releases.

POC: Dr. Peter Squire, Office of Naval Research





Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

Publications/Articles

Need for a paradigm shift in the development of military exoskeletons.

Authors: *Drs. Kurt Mudiea, Daniel Billing, Alessandro Garofolini, Thomas Karakolis & Michael LaFiandra*

Abstract: An exoskeleton is a body-worn mechanical device designed to work in concert with the user to enhance human capabilities. For the dismounted close combatant, an exoskeleton could be worn while performing a variety of complex tasks and duties so there's a requirement for the human and the exoskeleton to readily adapt to different movements in different contexts. There have been many attempts to design an exoskeleton to improve the performance of the complex adaptive human system with limited success. Despite a vast investment in time and resources, exoskeletons have not yet been adopted for operational use by military leadership for the dismounted close combatant as they are yet to demonstrate substantive augmentation to individual warfighter and collective team capability.

This paper argues that a major limitation of current exoskeleton systems is their inability to concurrently adapt to the user, task and environment. Unless a device can meet this requirement, it is unlikely to offer a comparative benefit to the dismounted close combatant. This paper also presents the state of the art of current exoskeleton technology, and recommends future research necessary to reach an acceptable standard of augmentation and thereby increase the opportunity for widespread adoption.

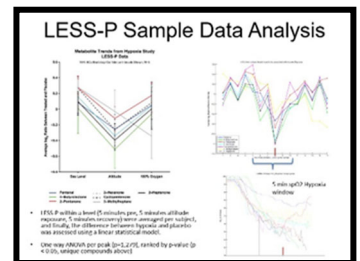
DOI: <https://www.tandfonline.com/doi/full/10.1080/17461391.2021.1923813>

POC: Dr. Michael LaFiandra, Army Research Labs Human Research and Engineering Directorate

Patent Issued for Exhaled Breath Hypoxia Biomarkers.

Contributors: *Drs. Sean Harshman, Claude Grigsby, Brian Geier, Jeffrey Phillips, and Darrin Ott*

Dr. Sean Harshman has been issued a patent for a method of detecting hypoxia in exhaled breath by non-invasively monitoring that breath for at least one of six volatile organic compounds that are indicators of hypoxia. This patent allows for real-time monitoring of a pilot's exhaled breath, and if indicators of hypoxia are sensed, will trigger an automatic increase in oxygen flow to the pilot — possibly before the pilot realizes a hypoxic event is occurring or if the pilot loses consciousness. The patent will increase the safety of pilots across the Air Force and reduce adverse consequences of hypoxic events. The patent will be officially issued 31 August 2021. POC: Dr. Sean Harshman, 711 HPW, Air Force Research Laboratory



Trust in Artificial Intelligence: Meta-Analytic Findings.

Authors: *Drs. J Christopher Brill, Alexandra Kaplan, Theresa Kessler and P.A. Hancock*

Abstract: The objective was to present meta-analysis sought to determine significant factors that predict trust in artificial intelligence (AI). These factors were divided into those relating to (a) the human trustor, (b) the AI trustee, and (c) the shared context of their interaction. As background, there are many factors influencing trust in robots, automation, and technology in general, and there have been several meta-analytic attempts to understand the antecedents of trust in these areas. However, no targeted meta-analysis has been performed examining the antecedents of trust in AI.

The team examined data from 65 articles in three predicted categories, as well as the subcategories of human characteristics and abilities, AI performance and attributes, and contextual tasking. Four common uses for AI (i.e., chatbots, robots, automated vehicles, and non-embodied, plain algorithms) were examined as further potential moderating factors. The results showed that all of the examined categories were significant predictors of trust in AI as well as many individual antecedents such as AI reliability and anthropomorphism, among many others. Overall, the results of this meta-analysis determined several factors that influence trust, including some that have no bearing on AI performance.

DOI: <https://journals.sagepub.com/doi/abs/10.1177/00187208211013988> Human Factors: The Journal of the Human Factors and Ergonomics Society, May 2021

POC: Dr. J Christopher Brill, 711 Human Performance Wing, Air Force Research Laboratory



Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

Publications/Articles (Continued)

Modeling Fog of War Effects in Advanced Framework for Simulation, Integration, and Modeling (AFSIM).

Authors: *Drs. Dillon Tryhorn, Richard Dill, Douglas Hodson, Michael Grimaila, and Christopher Myers.*

Abstract: This research identifies specific communication sensor features vulnerable to fog and provides a method to introduce them into an AFSIM wargame scenario. Military leaders use multiple information sources regarding the battlespace to make timely decisions that advance their operational objectives while attempting to deny their opponent's actions. Unfortunately, there are complexities of battle combined with uncertainty in situational awareness of the battlespace. For instance, too much or too little intelligence and the opponent's intentional interference with friendly command and control actions yield an abstract layer of battlespace fog. Decision-makers must understand, characterize and overcome this "battlespace fog" to accomplish operational objectives.

This research proposes a novel tool, the Fog Analysis Tool (FAT), to automatically compile a list of communication and sensor objects within a scenario and list some options that may impact decision-making processes. FAT improves wargame realism by introducing and standardizing fog levels across communication links and sensor feeds in an AFSIM scenario. Research results confirm that FAT provides significant benefits, and enables the measurement of fog impacts to tactical command and control decisions within AFSIM scenarios.

DOI: [10.1177/15485129211041963](https://doi.org/10.1177/15485129211041963) The Journal of Defense Modeling and Simulation, 2021

POC: Dr. Christopher Myers, 711 Human Performance Wing, Air Force Research Laboratory

How Packaging of Information in Conversation is Impacted by Communication Medium and Restrictions.

Authors: *Drs. Sarah Bibyk, Leslie Blaha, and Christopher Myers*

Abstract: In team-based tasks, successful communication and mutual understanding are essential to facilitate team coordination and performance. An important component of human conversation (whether in speech, text, or any medium) is the maintenance of common ground, which has a number of associated processes for how conversational participants engage. Many of these processes are lacking in current synthetic teammates, and it is unknown to what extent this lack of capabilities affects their ability to contribute during team-based tasks.

The research team focused the effort on how teams package information within a conversation, specifically whether information is explicitly mentioned or implied, and how multiple pieces of information are ordered within single or across multiple communications. They then re-analyzed data collected from a simulated remotely-piloted aerial system (RPAS) task in which team members had to specify speed, altitude, and radius restrictions. The data came from three experiments: "speech", "text", and "evaluation", with the last having a condition including a synthetic teammate. The RPAS teams were asked whether they settled on a specific routine for communicating the restrictions, and if this process was different if the teams communicated in speech compared to text. A follow up question was asked on how receiving special communication instructions in the evaluation experiment impacted the way the human teammates package information.

Results: Teams communicating in either "speech" or "text" tended to use a particular order for mentioning the speed, altitude, and radius with different teams choosing different orders. However, in the "evaluation" experiment teams showed unnaturally little variability in their information ordering and were also more likely to explicitly mention all restrictions even when they did not apply than the other experiments. The option to converge on different packaging routines may have contributed to improved performance in the text experiment compared some of the conditions in the evaluation experiment.

DOI: <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.594255> Frontiers in Psychology, 2021

POC: Dr. Sarah Bibyk, 711 Human Performance Wing, Air Force Research Laboratory



Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

Col Contact Information

Human Systems Col – STEERING GROUP MEMBERS		
Agency	Position	Name
Army Lead	Director, Army Research Institute (ARI)	Dr. Michelle Zbylut
AF Lead (Acting)	Chief Scientist, 711 th Human Performance Wing (711 HPW), Air Force Research Laboratory (AFRL)	Dr. Guarav Sharma
Army Lead	Director, Human Research and Engineering Directorate (HRED) - Army Research Labs (ARL)	Dr. Jason Corde Lane
Navy Lead	Division Director, Human & Bioengineered Sys, Code 341, Office of Naval Research (ONR)	Dr. John Tangney
SOCOM	Director, SOF AT&L Science & Technology	Ms. Lisa Sanders
Navy	Dept Head, Warfighter Performance, Code 34, ONR	Dr. Patrick Mason
Army	S&T Lead Soldier System Performance, DEVCOM Soldier Center	Dr. Robb Wilcox
Army	Data & Analysis Center	Dr. Thomas Davis
OUSD (R&E)	Director, Human Systems Directorate (HSD)	Dr. Ben Petro
DIU	Director, Human Systems Portfolio	Dr. Christian Whitchurch
Human Systems Col – HSD Support		
OUSD (R&E)	Contractor Support (Strategic Analysis)	Dr. Laura Kallal
OUSD (R&E)	Contractor Support (Strategic Analysis)	Dr. Liana Algarín
OUSD (R&E)	Contractor Support (Strategic Analysis)	Ms. Natalie Drzymala
OUSD (R&E)	Contractor Support (Peraton)	Dr. Jill Conover
Human Systems Col – Working Group Members		
Army	Army Research Institute (ARI)	Dr. Kelly Ervin
AF	AFRL 711 HPW	Ms. Roxanne Constable
DIU	Human Systems Portfolio, DIU	CDR Niels Olson
Navy	ONR Code 34	Dr. Kristy Hentchel
Navy	Program Officer, Office of Naval Research	LCDR Jake Norris
Army	Team Lead, Programs, Budget, and Strategies - ARI	Dr. Richard Hoffman
Army	Senior Research Scientist (ST) for Soldier Performance in Socio-Technical Systems	Dr. Jessie Chen
Army	Human Research and Engineering Directorate ARL	Ms. Rachel Weatherless
Army	CCDCSC	Ms. Karen Gregorczyk
AF	711 HPW , Senior Research Physiologist	Dr. Jill McQuade
Human Systems Col – HSD Support		
OUSD (R&E)	Contractor Support (Strategic Analysis)	Ms. Katie Stilling
OUSD (R&E)	Contractor Support (MITRE Corp)	Dr. Carolyn Parish
AF	Contractor Support (JYG Innovations Inc)	Mr. Al Livada



Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

Human Systems Col – SUB-AREA LEADS & MEMBERS		
Personalized Assessment, Education, and Training (PAE&T)		
Navy	DON Secretariat at ASN(M&RA)	Dr. Kendy Vierling
Air Force	AFRL 711 Human Performance Wing (HPW)	Dr. Glenn Gunzelmann
Army	ARI (Ft Benning)	Dr. Greg Ruark
Army	ARL (NSA Orlando)	Mr. Rodney Long
Navy	Naval Research Laboratory	Dr. Mark Livingston
ADL	Director, Advanced Distributive Learning	Dr. Sae Schatz
DLNSEO	Defense Language, Nat'l Security Education	Dr. Michael Nugent
DODHRA	DOD Human Resources Activity	Dr. Shannon Salyer
Navy	ONR (Code 34)	Dr. Ray Perez
Navy	ONR (Code 34)	LCDR Pete Walker
Navy	Naval Air Warfare Command, Training Systems	Dr. Jim Pharmer
Navy	Naval Air Warfare Command, Training Systems	Dr. Melissa Walwanis
Army	ARL West	Dr. Pete Khooshabehadeh
Army	CCDC-ARL-HRED	Dr. Kimberly Pollard
Army	ARL	Dr. Ben Files
Air Force	HQ Air Education and Training Command AETC	Dr. Christine Covas-Smith
Air Force	AFRL, 711 HPW	Dr. Christopher Stevens
Air Force	AFRL, 711 HPW	Dr. Megan Morris
Air Force	AFRL, 711 HPW	Dr. Christopher Myers
Air Force	AFRL, 711 HPW	Mr. Tom Rice
Air Force	AFRL, 711 HPW	Dr. Jennifer Winner
Protection, Sustainment, & Warfighter Performance (PSWP)		
Navy - Lead	ONR Code 34	Dr. Peter Squire
Army - Lead	ARL - HRED	Dr. Michael LaFiandra
Army WG	CCDCSC	Ms. Karen Gregorczyk
Army	CCDC—Soldier Center	Dr. John Ramsay
AF	AFRL, 711 HPW	Dr. Curt Grigsby
AF	AFRL, 711 HPW	Dr. James Christensen
AF	AFRL, 711 HPW	Dr. John Schlager
AF	AFRL, 711 HPW	Ms. Roxanne Constable
AF	Air Force Futures, A5	Maj. Lea Johansen
Navy WG	ONR Code 34	Dr. Kristy Hentchel
Navy	ONR Code 34	Dr. Sandra Chapman
Navy	ONR Code 34	LCDR Josh Swift
Navy	ONR Code 34	Mr. Keith King
Navy	Space & Naval Warfare Systems Command	Dr. Karl Van Orden
Navy	Office of the Chief Learning Officer	Dr. Kendy Vierling
Navy	Nav Surface Warfare Center Dahlgren	Dr. Alex Kniffin



Human Systems Community of Interest (HS Col) Newsletter



Sept 2021

Human Systems Col – SUB-AREA LEADS & MEMBERS		
System Interfaces and Cognitive Processing (SICP)		
AF - Lead	AFRL 711 HPW	Dr. Mark Draper
Air Force	AFRL 711 HPW	Mr. Ed Davis
Army	CCDC—Soldier Center	Dr. Caroline Mahoney
Army	Army Research Laboratory	Dr. Katherine Cox
Army	Army Research Laboratory	Dr. Jeff Hansberger
Navy	ONR Code 34	Dr. Tom McKenna
Navy	ONR Code 34	Dr. Jeff Morrison
Air Force	AFRL 711 HPW	Dr. Tamara Chelette
Air Force	AFRL 711 HPW	Dr. Laurie Fenstermacher
Air Force	AFRL 711 HPW	Mr. Eric Hansen
Air Force	AFRL 711 HPW	Dr. Daniel Zelik
Army	Army Research Office (ARO)	Dr. Edward Palazzolo
Army	ARO	Dr. Lisa Troyer
Navy	ONR Code 34	Dr. Rebecca Goolsby
Navy	Naval Surface Warfare Center	Dr. Jessica Jones
Navy	COMPACFLT N5	Dr. Dale Russell
Air Force	AFRL 711 HPW	Dr. Joe Lyons
Air Force	AFRL 711 HPW	Dr. Guarav Sharma
Navy	Naval Surface Warfare Center	Dr. Aaron Rowen