3–4 April 2018 SMA Conference

Joint Base Andrews, Jacob E. Smart Building

"A Utopian or Dystopian Future, or Merely Muddling Through?"

Jointly with DHS, DNI/NIC, and NCTC

THEME

This Conference will assess what today we rightly or wrongly perceive as historically unprecedented changes from the perspectives of politics and history, sociology, biology, information science, and technological innovation. There is a large body of scientific work that supports the notion that human societies are complex adaptive systems with emergent properties that contain core commonalities, but the actions of which cannot be predicted with certainty. Given the properties of human cognition and social behavior, the question remains: How might nations and societies best position themselves to prepare for and manage the risks associated with rapid change under conditions of fundamental uncertainty? Conference speakers and panelists will address these issues relevant to key domains and dimensions of global security.

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TUESDAY, 3 APRIL 2018

Day 1: Setting the Stage, Outlining the Future

0800-0805	**Introduction**	**COL Senodja Sundiata-Walker,** *Joint Staff*
0805-0830	**Opening Session**	**Brig Gen Alexus Grynkewich,** *Deputy Director for Global Operations, J39* **Dr. Charles Perkins,** *Principal Deputy, Deputy Assistant Secretary of Defense, Emerging Capability & Prototyping*
0830-0900	**Keynote Speaker**	**Gen Joseph Votel,** *CDR USCENTCOM*
0900-0930	**Intro Panel**	**Dr. Spencer Meredith,** *NDU* **Dr. Allison Astorino-Courtois,** *NSI* *Setting the Stage.* Historically speaking, how revolutionary is the current "revolution" in information, people power, and the integration of technology into diverse aspects of life? How has human society responded in previous eras of real and/or perceived rapid change? What examples of effective preparation and response to previous global change can we draw upon?
0930-1030	**Panel 1**	**Moderator: Dr. Allison Astorino-Courtois,** *NSI* **Mr. Robert Jones,** *USSOCOM* **Dr. Spencer Meredith,** *NDU*

Mr. Randy Munch, *TRADOC*

Dr. Robert Toguchi, *USASOC*

COL Scott Thomson, *OUSD-P*

Warfare and the Cognitive Capabilities Agenda: Will humans continue to matter more than hardware? How do cognitive capabilities interweave with the kinetic fight? Specifically, how does the defense establishment most effectively influence governments and populations in a world where people are hyper-connected? Will US objectives in future security environments be sufficiently served by the current balance of kinetic, technology, and cognitive capabilities? If not, what is the proper balance between capabilities in the "physical" domains and capabilities to impact the cognitive domain of security?

1030-1045	**BREAK**

Panel 2	**Moderator: Dr. Val Sitterle,** *GTRI*
	Dr. Claudio Cioffi, *GMU*
	LTC Tom Pike, *GMU*
	Mr. Vinh Nguyen, *ODNI*

1045-1145	*System Considerations 101.* This panel will examine the implications of an operating environment that is not merely complicated and expansive, but truly complex. What are the analytical challenges we face when system components and effects generated through their interactive dynamics evolve, often unpredictably? It is easy to say we will view our environments and the actors within them as complex adaptive systems, but what do the scientific underpinnings such as reciprocity vs. directionality and non-uniqueness mean in our interpretation of data and use of analytical tools? The panel discussion will aim to use tangible examples to elucidate how various approaches to complex systems analytics and engagement might be harnessed in operational contexts and produce "actionable insights" in the face of unpredictability. How does the character of complexity change how we analyze, infer, and caveat our analytical approaches and estimate the impacts of our actions? How much conceptual depth and understanding with respect to these approaches do we assume for and place on our analysts? Which new analytical tools seem promising?

1145-1245	**Moderator: Mr. David Horwitz,** *USSOCOM*
Panel 3	**Dr. Ben Ruddell,** *Northern Arizona Univ.*
	Dr. Gwyneth Sutherlin, *Geographic Services*
	Dr. Richard Cincotta, *Wilson Center/The Stimson Center*

Global Environmental Systems and Futures: Fragility & Resilience. This panel will present environmental scientists' and futurists' view of the current and impending dimensions of global environmental change as a focal consideration of discussions of international security. Key topics include "forced" migration as a result of systemic factors, developing situational awareness tools that address regional optimization and resilience options, and the integration/intersection of influencers to address policy and response options.

1245-1345	**LUNCH Graduate students will be available for discussions at posters**
1345-1415	**Invited Speaker** **MG Jim Kraft,** *USASOC*

1415-1515	**Panel 4**	**Moderator: Mr. Collin Agee,** *NGA* **Dr. John Shook,** *Univ. of Buffalo* **Dr. Cathryn Downes,** *NDU* **Ms. Regina Joseph,** *NYU* **Dr. Anthony Vinci,** *NGA* **Dr. George Friedman** (To be confirmed)

Societal, Generational, and Economic Revolutions. This panel will look at the interactive effects created by the "sharing economy" and the rise of the global citizen in contexts of resource scarcity, diverse diaspora, parochialism, and the resurgence of "local" (non-globalized) identities and interests. Key topics include global information systems and the future of privacy, strategies for societal immunization in the age of "Firehose of Information," and the potential to model large populations and their economic and political behaviors as global resources and environments change.

1515-1545	**Invited Speaker**	**TBD**
1545-1645	**Panel 5**	**Moderator**: **Dr. Diane DiEuliis**, *NDU* **Dr. James Giordano**, *Georgetown University Medical Center* **Dr. Nick Wright,** *Univ. of Birmingham, UK* **Dr. Jason Spitaletta**, *JHU/APL* **Dr. William Casebeer,** *Lockheed Martin*

Human Cognition, Artificial Intelligence, and Disruptive Neurotechnologies. This panel focuses on the implications of the convergence of artificial intelligence, deep learning, and disruptive neurotechnologies that could affect human cognition and behavior. Artificial intelligence (AI) represents a real and expanding element that will both affect how humans work, and will prompt speculation and planning regarding the iterative convergence of human activity and AI. Key issues include the progressive assumption of human roles and functions by AI systems, the generation of questions about if and how a multiplicity of automated systems could affect social structures, and the operating systems that influence and/or direct national security stabilities. As well, the maturation and progressive merging of AI and human biology through brain-computer interface (BCI) technologies can—and likely will—alter both human and computational system capabilities. What are the implications of such reciprocal optimizations for and in national security considerations and operations? Will the brain—and/or the "brain, the bits and the bytes" —be the key domains of the near future battlespace?

Graduate Student Poster Session	Moderator: **Dr. Amy Pate,** *Univ. of Maryland/START* Moderator: **Ms. Sarah Canna,** *NSI*

WEDNESDAY, 4 APRIL 2018

Day 2: Identifying the Threats		
0800-0805	**Introduction**	**Ms. Gia Harrigan,** *DHS*
0805-0825	**Invited Speaker**	**Mr. James F McDonnell,** *Acting Assistant Secretary, Countering Weapons of Mass Destruction Office, US Department of Homeland Security*
0825-0925	**Panel 6**	**Moderator: Mr. Matt Chessen,** *Dept. of State* **Dr. Laura Steckman,** *MITRE* **Dr. Spencer Meredith,** *NDU* **Dr. Ian McCulloh,** *JHU/APL* **Mr. James P. Farwell,** *King's College* **Dr. Greg Seese,** *JHU/APL & LTC, USAR*

Global Information Systems and Futures: State of the World and Where We Are Headed. This panel will present information and social scientists' views of the future of local-to-global communications and the impact that this technology has had—and will have—on the ways that humans interact. Key concepts include governing in the information environment, social mobilization, computational propaganda and cognitive security, and operationalizing these functions on the 21st century global stage including how technology facilitates propaganda and disinformation and what we should do about it.

0925-1000	**Invited Speaker**	**Dr. Suzanne Fry,** *DNI/NIC*
1000-1015	**BREAK**	
1015-1130	**Panel 7**	**Moderator: Ms. Gia Harrigan,** *DHS* **Dr. Gina Ligon,** *Univ. of Nebraska Omaha* **Dr. Gary Ackerman,** *SUNY Albany* **Mr. Paul Scharre,** *CNAS* **Dr. Kathleen Carley,** *Carnegie Mellon* **Ms. Rebecca Earnhardt**, *Univ. of Maryland* **Dr. James Caverlee**, *Texas A&M* **Dr. Robert McCreight,** *George Mason Univ.*

The Third Offset: Potential Implications of the "New Face of Terror" (DHS, NCTC, and Academia). This panel will explore the implications for terrorism operations and effects that arise from new and emerging developments in artificial intelligence (AI), robotics, autonomous systems, and other innovative technologies. The context of the 2014 Defense Innovation Initiative, which included the Third Offset Strategy, contains five core-building blocks:

- Autonomous Deep Learning Systems
- Human-Machine Collaborative Decision Making
- Assisted Human Operations
- Advanced Manned-Unmanned System Operations
- Network-Enable, Semi-Autonomous Weapons Hardened to Operate in a Future Cyber/ EW Environment

Related are technological advances and use of social media, software robots (bots), and network analytics that have been applied maliciously. The panel will address and review current debates about the depth and breadth of these innovations from a capabilities-based assessment, as well as presenting views toward the (all-important) integration with strategic goals.

1130-1230	**Panel 8**	**Moderator: Dr. Elizabeth Bowman,** *Army Research Lab* **Dr. Jonathon Pfautz**, *DARPA*

UNCLASSIFIED

Mr. Stephen Jameson, *DARPA*

Dr. Rebecca Goolsby, *ONR*

Dr. Adam Russell, *DARPA*

New Strategies for Modeling Complex Interactions in the New Information Environment: A DoD Perspective. Why Multiple Models Matter for Understanding and Countering Adversary Information Campaigns? Why a Causal Exploration Modeling Platform is Needed: What's New? How can Social Sim bridge traditional modeling pitfalls to provide a deeper understanding of social interactions? What is the emerging future of social science modeling and how can novel simulation approaches impact decision science?

1230-1330	**LUNCH Graduate students will be available for discussions at posters**

Panel 9 1330-1430	**Moderator: Ms. Patricia DeGennaro,** *US Army TRADOC G-2, Operational Environment Center (OES)* **Dr. Barnett Koven**, *Univ. of Maryland/START* **Dr. Diane Maye**, *Embry Riddle Aeronautical Univ.* **Dr. Kay Mereish,** *DHS* *The Middle East and North Africa: Dystopian Future in Front of Our Eyes?* The Middle East and North Africa are regions in crisis with the breakdown of state borders, massive conflict-driven immigration, humanitarian crises, youth bulges, weak governance, and few opportunities for stability or normalcy. Does the erosion of the Westphalian system and the decades of relative peace and stability it ushered in portend a future where the world increasingly faces the challenges seen in the MENA region?
Panel 10 1430-1545	**Moderator: LTC(P) Brad Burris,** *Joint Staff* **Lt Gen (ret) Dr. Bob Elder,** *GMU* **RADM (ret) Frank Morneau** **CAPT Joseph DiGuardo,** *Joint Staff/J-39* **COL Scott Thomson,** OUSD-P **Mr. Bob Warburg,** *USASOC* **COL Brandt Deck,** *USSOCOM* **Mr. Jason Werchan,** *USEUCOM* **TBD,** *USPACOM* **Mr. William Busch**, *Army G2* **CAPT (ret) TODD Veazie,** *NCTC*

OPS Panel:
- So where do we go from here? Throw our hands up...or roll our sleeves and get to work?
- How can resilience be re-enforced and reinforced?
- How can the phenomena—and effects—of "The Kaiser vacationing in the Baltic Sea just before the outbreak of WW1" be avoided??

	Panel 11	**Moderator:** Dr. John Stevenson, *NSI*
		Participating Graduate Students
		Ms. Nicole Peterson, *NSI*
		Mr. Weston Aviles, *NSI*
1545-1645		*Continuities and Discontinuities within and between Generations: Millennial Perspectives on Information, Technology and People Power.* This panel will explore how the "Millennial" generation, a cohort born between 1982 – 1992, currently between the ages of 26 and 36, are both the architects and recipients of social changes from the information, people power, and the integration of technology. This panel of Millennials will leverage an admixture of personal insight and analysis to excavate patterns of inter-generational continuity and discontinuity, and to thematize components of intra-generational diversity.
	Graduate Student Poster Session	**Moderator:** Dr. Amy Pate, *Univ. of Maryland/START* **Moderator:** Ms. Sarah Canna, *NSI*