



9:00 – 9:20	Check-in and Networking Time
9:20 – 9:30	Logistics & Ground Rules <i>Ms. Kara Pepe, SERC</i>
9:30 – 9:45	WELCOME from the Executive Sponsors <i>Dr. Dinesh Verma, Executive Director, SERC and Mr. Jeff Dyer, Director, CCDC AC Systems Engineering Directorate</i>
9:50 – 10:35	KEYNOTE US Army AI Task Force <i>Dr. Douglas M. Matty, SES</i> Director, Army Artificial Intelligence Capabilities
MACHINE LEARNING / ARTIFICIAL INTELLIGENCE	
10:40 – 11:10	<i>Isolate, Predict and Evaluate the Impact of New Technologies and Emerging Threat Sources from Human Groups and Cultural Sources Using a Natural Language Processing with a Predefined Cognitive Bias</i> <i>Dr. Carlo Lipizzi, Stevens Institute of Technology</i>
11:10 – 11:20	10-min Break
11:20 – 11:50	<i>Understanding Game Balance in Mosaic Warfare with Explainable Artificial Intelligence</i> <i>Dr. Daniel DeLaurentis, Purdue University</i>
11:55 – 12:25	<i>Adversarial Robustness of AI Models with Ensemble Diversity Optimizations</i> <i>Dr. Margaret Loper, Georgia Tech Research Institute</i>
12:30 – 1:00	MACHINE LEARNING Q&A
1:00 – 1:20	20-min Break
1:20 – 2:05	KEYNOTE AI and Systems Engineering: A MITRE Perspective <i>Dr. Peter Schwartz, The MITRE Corporation</i> Principal Artificial Intelligence Engineer; AI Joint & Services Domain SME, AI & Autonomous Systems Department AI Domain Capability Area Lead, Army Programs Division
ARTIFICIAL INTELLIGENCE FOR SYSTEMS ENGINEERING (AI4SE)	
2:10 – 2:40	<i>Houston: An Intelligent Requirements Advisor</i> <i>Mr. Paul Wach, Virginia Tech</i>
2:45 – 3:15	<i>Using AI/ML Approaches to Support Data Analysis Process Improvement</i> <i>Mr. Austin Ruth, Georgia Tech Research Institute</i>
3:20 – 3:30	10-min Break
3:30 – 4:00	<i>Mitigating Design Error Archetypes in the Development of Explainable-Machine Learning (X-ML) Systems</i> <i>Dr. Lance Sherry, George Mason University</i>
4:05 – 4:35	<i>Automated Detection of Architecture Patterns in MBSE Models</i> <i>Mr. Matthew Cotter, The MITRE Corporation</i>
4:40 – 5:10	AI4SE Q&A
5:15 – 5:30	DAY 1 CLOSING / AGENDA REVIEW – DAY 2 <i>Dr. Peter Beling (UVA) and Mr. Al Stanbury (CCDC AC)</i>

OCTOBER 29, 2020

8:45 – 9:00	Check-in and Networking Time
9:00 – 9:15	WELCOME / REVIEW WORKSHOP GOALS / LOGISTICS Dr. Peter Beling, UVA and Mr. Tom McDermott, SERC
9:15 – 9:45	CCDC Armaments Center Systems Engineering Directorate's AI Initiatives Mr. Roshan Patel, CCDC AC
9:50 – 10:20	KEYNOTE Establishing A Data Rich Decision Environment – ASA (ALT)'s Vision for a Transformational Army Ms. Jeannette Evans-Morgis, SES Chief Systems Engineer, Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology)
SYSTEMS ENGINEERING FOR ARTIFICIAL INTELLIGENCE (SE4AI)	
10:25 – 10:55	Artificial Intelligence Certification in Operational Environments Mr. Tyler Cody, University of Virginia / Dr. Erin Lanus, Virginia Tech / Dr. Sachin Shetty, Old Dominion University
11:00 – 11:30	Evolving Systems Engineering Methods for Artificial Intelligence and Machine Learning Dr. Rosa Heckle, The MITRE Corporation
11:30 – 11:40	10-min Break
11:40 – 12:10	Human Data Collection for Machine Learning and Artificial Intelligence Aid Development Dr. Elizabeth Sibolboro Mezzacappa, CCDC AC
12:15 – 12:45	Karat: A Visual Framework for Constructing Neural Networks Mr. Frazier N. Baker, Georgia Tech Research Institute
12:50 – 1:20	SE4AI Q&A
1:20 – 1:35	15-min Break
DIGITAL ENGINEERING	
1:35 – 2:05	Collaborative Functional Design Using Explainable Machine Learning (X-ML) Dr. Lance Sherry, George Mason University
2:10 – 2:40	Design of Digital Twin Architectures that support AI and Machine Learning Formalisms Working Side-by-Side as a Team Dr. Mark Blackburn, Stevens Institute of Technology
2:40 – 2:50	10-min Break
2:50 – 3:20	Human Machine Teaming elements of AI-enabled Course of Action Wargaming Dr. Cindy Dominguez and Ms. Patricia McDermott, The MITRE Corporation / Mr. Adam Brown, Parsons Corporation
3:25 – 3:55	Automated Generation of Expert Systems Thinking Patterns using a Convolutional Neural Network Mr. Ross Arnold, CCDC AC
4:00 – 4:30	DIGITAL ENGINEERING Q&A
4:35 – 4:45	Workshop Wrap up and Next Steps Mr. Tom McDermott, SERC
5:15 – 5:30	CLOSING Remarks Dr. Dinesh Verma, Executive Director, SERC and Mr. Jeff Dyer, Director, CCDC AC Systems Engineering Directorate

Logistics & Ground Rules

- All participants must remain on **MUTE**
- Presenters in each track will speak for 25 mins each. The moderator will facilitate a transition to the next speaker with a brief introduction
- All questions must be submitted through the chat function
 - Indicate which speaker/presentation you are directing your question towards when possible
 - Note the specific slide (if possible/applicable)
- Q&A for the entire track will be moderated at the end of all speakers within the track

We will do our best to address as many questions in the Q&A sessions as possible. All questions will be captured in the chat feature and shared with the presenters. Presenter contact information will also be made available should attendees be interested in following up with them directly.

Keynote Speakers

Dr. Douglas M. Matty, SES

Director, Army Artificial Intelligence Capabilities

Ms. Jeannette Evans-Morgis, SES

Chief Systems Engineer

Office of the Assistant Secretary of the Army
(Acquisition, Logistics and Technology)

Dr. Peter Schwartz

The MITRE Corporation

Principal Artificial Intelligence Engineer
AI Joint & Services Domain SME, AI &
Autonomous Systems Department
AI Domain Capability Area Lead, Army Programs
Division



Dr. Douglas M. Matty, SES

Director, Army Artificial Intelligence Capabilities



BIO: Dr. Douglas Matty is the Director, Army Artificial Intelligence Capabilities. His organization is responsible for the development, coordination and synchronization of Artificial Intelligence capability development for the Army. This includes all aspects of AI-enhanced capabilities, particularly materiel and workforce development. The organization, reporting directly to the U.S. Army Futures Command, is based in Pittsburgh, PA.

Commissioned in the Air Defense Artillery, Dr. Matty held leadership positions at the platoon, company and battalion levels, successive battery commands and primary brigade staff. He was then selected for designation as Operation Research Systems Analyst serving as Assistant Professor, Department of Mathematical Sciences and Executive Officer Operations Research Center of Excellence (ORCEN) at the United States Military Academy (USMA). He then served sequential assignments across the Army as division chief

in Army Test and Evaluation, HQDA Program Analysis and Evaluation Directorate, Office of the Deputy Under Secretary of the Army for Business Transformation. At the strategic leader level, Dr. Matty served as Personal Staff CG USF-I, CJCS Strategic Systems Analyst(JROC)/Division Chief J8, Division Chief for POM Development/PAED, HQDA G8 and Deputy Director, Capabilities Development Group USCYBERCOM. Dr. Matty's previous position was Deputy Director, Army Artificial Intelligence Task Force.

Dr. Matty's education includes a bachelor's degree in computer engineering (including minors in both electrical engineering and computer science) from the USMA, West Point, NY. He has a master's degree in applied mathematics (minor in cryptography) and a master's degree in national securities studies from the U.S. Army War College (USAWC). He also holds a doctorate in engineering systems from Massachusetts Institute of Technology focused on enterprise engineering analytical and empirical methods.

In addition to his service to national defense, Dr. Matty was co-founder of Project Healing Waters Fly Fishing Inc., a nonprofit that supports physical, occupational and recreational therapy programs through fly fishing activities at more than 200 locations across the United States, England and Australia. He also has founded and continues to support organizations committed to leader development at USMA and USAWC. Dr. Matty also serves on The Orthodox Christian Leadership Initiative, a national committee of corporate and philanthropic executives to enhance leader development across the dioceses and jurisdictions, nationally, regionally and locally.



Biography

Department of the Army



Jeannette Evans-Morgis
 Chief Systems Engineer
 Office of the Assistant Secretary of the Army
 (Acquisition, Logistics and Technology)



Ms. Jeannette Evans-Morgis was appointed to the Senior Executive Service in December 2015 and currently serves as the Chief Systems Engineer for the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA(ALT)). In this position, she serves with a vision of integrating systems engineering to modernize the Army, along with systems engineering for ASA(ALT) in support of the Army Materiel Enterprise to ensure delivered equipment meets the mission needs of the force against any potential adversaries.

CAREER CHRONOLOGY:

- 2019 – Present: Chief Systems Engineer, Assistant Secretary of the Army for Acquisition, Logistics and Technology
- 2015 – 2019: Deputy to the Commander for Systems Engineering and Acquisition Logistics, Marine Corps Systems Command
- 2013 – 2015: Assistant Program Executive Officer–Engineering for Program Executive Officer Land Systems, Marine Corps Systems Command
- 2010 – 2013: Assistant Program Manager–Engineering for Program Management Office, Marine Air–Ground Task Force Command, Control and Communications, Marine Corps Systems Command
- 2007 – 2010: Lead Systems Engineer for the Marine Corps Enterprise Information Technology Services
- 2005 – 2007: Lead Systems Engineer for the Information Systems and Infrastructure Strategic Business Team
- 1999 – 2005: Lead Systems Engineer for Tomahawk Weapons Control System, Dahlgren Division K71 team, Naval Sea Systems Command Surface Warfare Center

COLLEGE:

- MS, Electrical Engineering, Drexel University, Philadelphia, PA, 1989
- BS, Electrical Engineering, George Washington University, Washington D.C., 1986

SIGNIFICANT TRAINING:

- Federal Executive Institute, September 2015
- University of North Carolina Kenan-Flagler Understanding the Government-Industry Relationship in Acquisition, April 2016
- United States Marine Corps Brigadier General Select Orientation Course, August 2016
- 43rd Advanced Professional Executive Senior Executive Service Orientation, September 2016
- University of North Carolina Kenan-Flagler Business School Program for Executives in Logistics and Technology, June 2017
- University of North Carolina Kenan-Flagler Department of the Navy Executive Leadership Program, November 2017
- Defense Acquisition University Senior Acquisition Management Course (ACQ 404), November 2017

CERTIFICATIONS:

Defense Acquisition Workforce Improvement Act (DAWIA)

- Level III – Program Management
- Level III – Advanced Systems Planning, Research, Development, and Engineering

AWARDS AND HONORS:

- Navy Meritorious Civilian Service Award, 2019
- Navy Meritorious Civilian Service Award, 2008

PROFESSIONAL MEMBERSHIPS AND ASSOCIATIONS:

- Defense Acquisition Corps



Peter Schwartz, Ph.D.

Dr. Peter Schwartz is a Principal Artificial Intelligence Engineer for the MITRE Corporation in the Artificial Intelligence & Autonomous Systems department where he serves as the Artificial Intelligence Joint & Services Domain SME. He supports multiple Department of Defense sponsors as an AI subject matter expert and leads MITRE's Army AI Community of Practice. He has taught AI for the MITRE Institute and has served on a variety of AI panels and conference committees. Before joining MITRE in 2016, he was a Senior Data Scientist at Penn Medicine, and before that he was a Senior Mathematician at ORSA Corporation. He received a Ph.D. in computer science and intelligent systems from the University Michigan in 2007, and a B.S. in computer science and a B.A. in psychology from the University of Maryland in 2001.

