





NOVEMBER 17, 2020

9:00 9:55 AM	CHECK-IN	POSTER EXPO	NETWORKING
10:00 10:10 AM	WELCOME & OPENING REMARKS: Mr. Tom McDermott, Deputy Director, Chief Technology Officer, SERC		
10:15 10:40 AM	Strategy Dynamics and System-of-Systems Tradespace Exploration Jordan Stern, Stevens Institute of Technology		
10:45 11:10 AM	Unmanned Aerial Systems (UAS) Sensor Data Networking Russell Shirey, Maj USAF, SERC Doctoral Fellow, Purdue University		
11:10 11:20 AM	10 MIN BREAK		
11:20 11:45 AM	Quantitative Methods for Set-Based Design (SBD) Shawn Dullen, U.S. Army Combat Capabilities Development Command (CCDC), SERC Doctoral Fellow, Stevens Institute of Technology		
11:50 12:15 PM	Game Balance and Game Breaking: A Game Theory Approach Prajwal Balasubramani, Purdue University		
12:20 12:45 PM	Compositionality in Cyber-Physical Systems Theory Georgios Bakirtzis, University of Virginia		
12:45 1:15 PM	LUNCH	POSTER EXPO	NETWORKING
1:15 1:40 PM	Applying Search Optimization Techniques in the Incorporation of New Technologies and Innovations in Modular System Upgrades Romulo Broas, Raytheon, SERC Doctoral Fellow, Stevens Institute of Technology		
1:45 2:10 PM	The Implementor's Dilemma for Digital Engineering Stephanie Sharo Chiesi , Formerly Raytheon, SERC Doctoral Fellow, Stevens Institute of Technology		
2:152:40 PM	MBSE Benefits: Evidence from the Literature and Insights from Practitioners Kaitlin Henderson, Virginia Tech		
2:402:50 PM	10 MIN BREAK		
2:50 3:15 PM	Rapid Aerostructural Design of UAV Wings for Direct Toolpath Generation Justin Valenti, Penn State		
3:15 3:40 PM	Identifying Security Patterns for Modular Open Systems Giselle Bonilla-Ortiz, Raytheon, SERC Doctoral Fellow, Stevens Institute of Technology		
3:40 4:00 PM	CLOSING REMARKS: Mr. Tom McDermott, Deputy Director, Chief Technology Officer, SERC		
4:00 5:00 PM	VIRTUAL RECEPTION	PI / SPEAKER CHECK IN	POSTER EXPO
	Join us in a casual meet and greet, to reconnect with colleagues and make some new connections.	All PI's & Speakers will be invited to this meeting space, to check-in and review any questions about their sessions. (OPTIONAL)	All SDSF presenters research work is showcased within the Poster Expo.



8:30 -- 9:00 AM

9:00 -- 9:15 AM

9.12 -- 10.00 AM

10:05 -- 11:05 AM

11:05 -- 11:30 AM

11:30 -- 12:10 PM

12:15 -- 12:55 PM

1:00 -- 1:40 PM

1:40 -- 2:05 PM

2:05 -- 2:35 PM

2:40 -- 3:20 PM

3.22 -- 4.05 PM

4:10 -- 4:50 PM

4:55 -- 5:35 PM

5:40 -- 6:00 PM

SERC SPONSOR 12TH RESEARCH REVIEW NOVEMBER 18, 2020 CHECK-IN NETWORKING POSTER EXPO WELCOME & OPENING REMARKS / AWARDS: Dr. Dinesh Verma - Executive Director, SERC MORNING KEYNOTE Dr. Magnus; Deputy Director for Engineering, Office of the Under Secretary of Defense for Research and Engineering PANEL: Mission Engineering Research Challenges PANELISTS: Elmer L. Roman, OUSD, (R&E) AC / Engineering; Donna Rhodes, MIT; Alejandro Salado, Virginia Tech; Dorothy McKinney, SE Consultant; Ryan Noguchi, Aerospace Corporation | MODERATORS: Judith Dahmann, MITRE and Dan DeLaurentis, Purdue; Chief Scientist, SERC **BEST STUDENT PRESENTATION** NETWORKING POSTER EXPO AI & AUTONOMY **DIGITAL ENGINEERING** SECURITY **MISSION ENGINEERING** WRT-1010 WRT-1002 WRT-1008 & ART 002 WRT-1013 Meshing Capability and Transforming Systems Engineering Approaches to Achieve Benefits Reducing Total Ownership Cost **Threat-based Science and** of Modularity in Defense through Model-Centric (TOC) and Schedule Technology (S&T) Resource Engineering / MBSE Acquisition - Part 2 Allocation Dr. Peter Beling, UVA Dr. Mark Blackburn, Stevens Dr. Cesare Guariniello, Purdue Dr. Carlo Lipizzi, Stevens ART-004 & WRT-1033 WRT-1017 ART-005 Methods to Evaluate Cost/Technical Risk **ART-015** Keyphrase Extraction Using Methods for Integrating New Observing Strategies Testbed and Opportunity Decisions for Language Embeddings -**Dynamic Requirements & Emerging** Security Assurance in Design (NOS-T) Design and Development Phase I & Phase II Technologies Mr. Tom McDermott, Stevens Dr. Paul Grogan, Stevens Dr. K. P. Subbalakshmi, Stevens Dr. William Rouse, Georgetown Dr. Peter Beling, UVA WRT-1022 **ART-010** WRT.1009 WRT-1019 **Developmental Test and Evaluation** Managing System-of-Systems Adaptive Cyber-Physical-Human Model Curation Innovation and (DT&E) and Cyberattack Resilient Systems **Complexity for Distributed** Implementation Systems Testbed Command and Control (C2) Dr. Barry Horowitz, UVA Dr. Donna Rhodes, MIT Dr. Azad Madni, USC Dr. Cody Fleming, Iowa State Dr. Dan DeLaurentis, Purdue NETWORKING 25-MIN BREAK POSTER EXPO AFTERNOON KEYNOTE - The Acquisition Innovation Research Center HUMAN CAPITAL DEVELOPMENT WRT-1023 **ART-014** WRT-1001 Analyzing and Assessing WRT - 1004 Quantum Photonics Tasks for Research **Digital Engineering Measures** Contracts for Embedded Risk Helix - Organizational Systems Mr. Tom McDermott, Stevens Dr. Yuping Huang, Stevens Engineering Effectiveness 2019 Dr. Carlo Lipizzi, Stevens Dr. Nicole Hutchison, Stevens WRT-1006 ART-016 **ART-001 ART-007** Integrated Mission Equipment (IME)

Preparing the Acquisition Workforce for Digital Engineering - Developing a Digital Engineering Competency Framework

Dr. Nicole Hutchison, Stevens

WRT-1007 Capstone Marketplace

CAPT Bill Shepherd, Stevens

WRT-1018 **DAU Credential Development** Mr. Ralph Giffin, Stevens

Dr. Mark Austin, University of Maryland

Cognitive Bias in Intelligent

Systems

Dr. Laura Freeman, Virginia Tech

ART-009

Intelligent Defense Systems

Dr. Victor Lawrence, Stevens

WRT-1025

Using AI/ML Design Patterns for

Digital Twins and

Model-Centric Engineering

CLOSING REMARKS

Architecture Process for Vertical Lift

Systems

Dr. Paul Collopy / Dr. Bryan Mesmer, UAH

VELOCITY

WRT-1012

Global Positioning Systems -

Mission Engineering and Integration of

Emerging Technologies

Dr. Michael Orosz, USC

WRT-1016

Reducing Total Ownership Cost

(TOC) and Schedule

Dr. Barry Boehm, USC

ENTERPRISE SYSTEMS & SYSTEM OF SYSTEMS

Dr. Dinesh Verma - Executive Director, SERC; Mr. Tom McDermott, Deputy Director, Chief Technology Officer, SERC

Characterization of Emerging

Technologies in Military

Dr. Pradeep Lall, Auburn

ART .006

Risk Based Approach to Cybert

Vulnerability Assessment

Dr. Peter Beling, UVA

COVID-19 SURVEY

On comparing the effects of

"Work at Home" during COVID-19

between Systems Engineers and

General Population

Dr. Jose Ramirez-Marquez, Stevens

TRUSTED SYSTEMS

(7) SYSTEMS ENGINEERING & MANAGEMENT TRANSFORMATION

