

ANNUAL SPONSOR RESEARCH REVIEW

WASHINGTON DC VIRTUAL

2-4 NOV 2021



TUESDAY | 2 NOV 2021

ALL TIMES LISTED EASTERN TIME

| | |
|-------------------------|--|
| 7:30 – 9:00 AM | CHECK-IN |
| 9:00 – 9:10 AM | WELCOME & OPENING REMARKS Dr. Dinesh Verma, <i>Executive Director, SERC/AIRC</i> Dr. Paul Kaminski, <i>Chairman, SERC/AIRC Advisory Board</i> |
| 9:10 – 9:45 AM | KEYNOTE Mr. Christopher C. O'Donnell, <i>Performing the Duties of the Assistant Secretary of Defense for Acquisition</i> |
| 9:50 – 10:50 AM | PANEL ON AIRC SYSTEMIC IMPACT – Moderated by Dr. Dinesh Verma, <i>Executive Director, SERC/AIRC</i> Panelists: Ms. Jeannette Evans-Morgis, <i>SES, Chief Systems Engineer, Dept. of the Army</i> Mr. Paul Mann, <i>SES, Chief Systems Engineer, Dept. of the Navy</i> Mr. Mark Krzysko, <i>SES, Principal Deputy Director, Data & Analytics, OUSD(A&S)</i> Ms. Philomena Zimmerman, <i>Director, Engineering Tools and Environments, OUSD(R&E)</i> |
| 10:50 – 11:00 AM | 10 MIN BREAK |
| 11:00 – 11:40 AM | IP Management, Evaluation & Valuation Principal Investigator: Dr. Claudia Stewart, <i>Georgetown</i> Presented by: Mr. Richard Beutel, Esq., <i>Georgetown</i> |
| 11:40 – 12:20 PM | Intellectual Property Repository Dr. Laura Freeman, <i>Virginia Tech</i> |
| 12:20 – 1:00 PM | AIRC Digital Data Management & Analytic Strategy Dr. Laura Freeman, <i>Virginia Tech</i> ; Dr. Phil Anton, <i>Stevens</i> |
| 1:00 – 2:00 PM | BREAK FOR LUNCH (Networking and Tool Demonstration Opportunities) |
| 2:00 – 2:40 PM | Demonstration of Policy Flight Simulators Dr. William Rouse, <i>Georgetown</i> ; Dr. Annie Yu, <i>Stevens</i> |
| 2:40 – 3:20 PM | Demonstration of Digital Engineering for Acquisition Dr. Mark Blackburn, <i>Stevens</i> ; Mr. Taylor Fields, <i>Georgia Tech</i> |
| 3:20 – 4:00 PM | Demonstration of Cyber Resilience Design and Evaluation Dr. Peter Beling, <i>Virginia Tech</i> |
| 4:00 – 4:40 PM | Demonstration of Mission Engineering Analytical Tools Dr. Dan DeLaurentis & Dr. Jitesh Panchal, <i>Purdue University</i> |
| 4:40 – 5:00 PM | CLOSING REMARKS: Dr. Phil Anton – <i>Chief Scientist, AIRC</i> |
| 5:00 – 7:00 PM | NATIONAL PRESS CLUB Reception and Tool Demonstrations |

ANNUAL SPONSOR RESEARCH REVIEW

WASHINGTON DC **VIRTUAL**

2-4 NOV 2021



WEDNESDAY | 3 NOV 2021

ALL TIMES LISTED EASTERN TIME

7:30-9:00 AM

CHECK-IN

9:00 - 9:05 AM
9:05 - 9:15 AM
9:15 - 9:50 AM
9:50 - 10:50 AM

WELCOME – Dr. Dinesh Verma, *Executive Director, SERC/AIRC*
OPENING REMARKS – Ms. Stephanie Possehl, *Acting Deputy Director for Engineering and Director for Engineering Policy and Systems*
MORNING KEYNOTE – Mr. Maynard Holliday, *Director of Defense Research and Engineering for Modernization*
PANEL ON MODERNIZATION PRIORITIES – Moderated by Dr. Dan DeLaurentis, *Chief Scientist, SERC*
 OUSD(R&E) Panelists: Mr. Maynard Holliday (*Dir Modernization*), Mr. Ian Crone (*Dir Cyber*), Dr. Jill Crisman (*Dir AI*), Dr. Jaret C. Riddick (*Dir Autonomy*), Dr. Stephanie Rogers (*Dir Biotechnology*)

10:50 - 11:00 AM

BREAK

SESSION 1
11:00-12:45 PM



DIGITAL ENGINEERING



AI & AUTONOMY



SECURITY

11:00 AM

11:35 AM

12:10 PM

WRT-1040
Application of Digital Engineering Measures
Mr. Tom McDermott, *Stevens*;
Ms. Kaitlin Henderson, *Virginia Tech*

WRT-1025
Architecting for Digital Twins and MCE with Part II
Dr. Mark Austin, *University of Maryland*

WRT-1022
Developmental Test and Evaluation and Cyber Resilient Systems
Dr. Peter Beling, *Virginia Tech*

WRT-1036/ART-002
Transforming Systems Engineering through Model-Centric Engineering - Phase 7
Dr. Mark Blackburn, *Stevens*

WRT-1017
Keypphrase Extraction Using Language Embeddings - Phase I & Phase II
PI: Dr. K. P. Subbalakshmi, *Stevens*
Presented by: Mr. Bingyang Wen, *Stevens*

WRT-1033
Transitioning Mission Aware Concepts and Methods to Evaluate Cost Risk Decisions for Security Assurance Design
Mr. Tom McDermott, *Stevens*

ART-008
Design Evaluation Automation and Optimization
Dr. Kishore Pochiraju, *Stevens*

WRT-1028
Validation Framework for Assuring Adaptive and Learning-Enabled Systems
Dr. Daniel Shapiro, *University of Alabama Huntsville*

WRT-1027
Ecology-Inspired Techniques for Resilient Design of System of Systems
Dr. Richard Malak, *Texas A&M*

12:45-1:30 PM

BREAK

NETWORKING

1:30-2:30 PM

PANEL ON SYSTEMS ENGINEERING MODERNIZATION

Moderated by Mr. Tom McDermott, *Deputy Director/CTO, SERC*; Hosted by Ms. Nadine Geier, *OUSD(R&E)*
 Panelists: Mr. Geoff Draper, *L3 Harris*; Mr. Chris Schreiber, *Lockheed Martin Space Systems Company*; Ms. Philomena Zimmerman, *OUSD(R&E)*

SESSION 2
2:35-3:40 PM

ART-005
Methods for Integrating Dynamic Requirements
Dr. William Rouse, *Georgetown*

WRT-1023
Analyzing and Assessing Contracts for Embedded Risk
Dr. Carlo Lipizzi, *Stevens*



HUMAN CAPITAL DEVELOPMENT

2:35 PM

WRT-1043
DAU Digital Engineering Simulation
Dr. Nicole Hutchison, *Stevens*;
Mr. Paul Wach, *Virginia Tech*

3:10 PM

ART-016
IME Architecture Process for Vertical Lift Systems
Dr. Bryan Mesmer, *University of Alabama Huntsville*

WRT-1019
Adaptive Cyber-Physical-Human Systems Testbed
Dr. Azad Madni, *USC*

WRT-1035
Capstone Marketplace 2020-21
CAPT Bill Shepherd, *Stevens*

3:40-3:55 PM

BREAK

NETWORKING

SESSION 3
3:55-5:05 PM

ART-015
New Observing Strategies Testbed NOS-T Design and Development
Dr. Paul Grogan, *Stevens*



VELOCITY

WRT-1012/1041
Global Positioning Systems - Mission Engineering and Integration of Emerging Technologies
Dr. Michael Orosz, *USC*

WRT-1055
Policy Options to Promote DoD-Defense Industry Collaboration in STEM
Dr. Ruth David, Dr. Jeff Wilcox, *Stevens*

3:55 PM

4:30 PM

WRT-1030
Electronic Warfare Mission Engineering
Mr. Joel Patton,
Dr. Jim Moreland, *Virginia Tech*

WRT-1042
Policy Innovations to Enhance the STEM Talent Pipeline
Dr. William Rouse, *Georgetown*

5:05-5:15 PM

CLOSING REMARKS

Mr. Tom McDermott, *Deputy Director/CTO, SERC*

TUTORIALS

9:00 – 11:00 AM *Skyzer Surrogate Pilot MBSE Cost Model Use Case and Model Tour Demonstration*
Dr. Mark Blackburn, *Stevens*

SERC Systems and Cyber Resilience Modeling
Dr. Peter Beling, *Virginia Tech*

11:10 – 11:20 AM

Welcome and Opening Remarks
Mr. Tom McDermott & Ms. Kara Pepe, *SERC*

SESSION 1
11:20–12:45 PM

A Systematic Mapping Study of Systems Security Engineering for Modular Open Systems
Ms. Giselle Bonilla-Ortiz – SERC Doctoral Fellow, *Stevens*

11:20 AM

Quantitative Methods for Set-Based Design (SBD)

11:50 AM

Mr. Shawn Dullen – SERC Doctoral Fellow, *Stevens*

12:20 PM

Model Based Exploration of Historical Cases to Generate Insights

Ms. Marilee Wheaton – SERC Doctoral Fellow, *USC*

12:45 – 1:15 PM

BREAK

POSTER EXPO

SESSION 2
1:15 – 3:10 PM

Ecology-Inspired Design of Resilient and Affordable System of Systems

1:15 PM

Mr. Abheek Chatterjee, *Texas A&M*

1:45 PM

Architecting Smart City Digital Twins

Ms. Maria Coelho, *University of Maryland*

2:15 PM

Quantitatively Analyzing Defensive Actions in Cyberattacks

Mr. Daniel Colvett, *University of Alabama Huntsville*

2:45 PM

Engineering Intelligent Systems: A Systems Theoretic Perspective

Ms. Niloofar Shadab, *Virginia Tech*

3:10 – 3:20 PM

BREAK

POSTER EXPO

SESSION 3
3:20–4:45 PM

Complexity at the Requirement Stage - A Novel Paradigm for System Development

3:20 PM

Mr. Maximilian Vierlboeck, *Stevens*

3:50 PM

Leveraging Systems Theory to Achieve Verification Agility

Mr. Paul Wach, *Virginia Tech*

4:20 PM

Reexamining the Logical Foundation of Engineering Decision Making Under Uncertainty

Mr. Christopher White, *University of Alabama Huntsville*

4:45 – 5:00 PM

CLOSING REMARKS

Mr. Tom McDermott & Ms. Kara Pepe, *SERC*

DAY 1 – Tuesday, November 2

MORNING KEYNOTE

Mr. Christopher C. O'Donnell

Performing the Duties of the Assistant Secretary of Defense for Acquisition

Mr. Chris O'Donnell is currently performing the duties of the Assistant Secretary of Defense for Acquisition. In this position, he advises the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)), the Deputy Secretary of Defense, and the Secretary of Defense on matters relating to the Department of Defense (DoD) Acquisition System, acquisition program management, and the development of strategic, space, intelligence, tactical warfare, command and control, and business systems.



PANEL ON AIRC SYSTEMIC IMPACT

Moderated by **Dr. Dinesh Verma**, *Executive Director, SERC/AIRC*

Panelists:

Ms. Jeannette Evans-Morgis, *SES, Chief Systems Engineer,*
Dept. of the Army

Mr. Paul Mann, *SES, Chief Systems Engineer, Dept. of the Navy*

Mr. Mark Krzysko, *SES, Principal Deputy Director, Data & Analytics,*
OUSD(A&S)

Ms. Philomena Zimmerman, *Director, Engineering Tools and*
Environments, OUSD(R&E)



DAY 2 – Wednesday, November 3

MORNING KEYNOTE

Mr. Maynard Holliday

Director of Defense Research and Engineering for Modernization Office of the Under Secretary of Defense for Research and Engineering

Mr. Maynard Holliday is the Director of Defense Research and Engineering for Modernization (DDRE(M)). In this capacity, he oversees investment and capability analysis of the Pentagon's modernization priorities outlined in the National Defense Strategy. He has oversight of the 11 principal directors assigned to those modernization portfolios and their roadmaps – the comprehensive strategies to manage, provide oversight and guide choices for each modernization priority area. These modernization priorities include 5G; Artificial Intelligence and Machine Learning; Autonomy; Biotechnology; Cyber; Directed Energy; Fully Networked Command, Control, and Communications; Hypersonics; Microelectronics; Quantum Science; and Space.



MORNING PANEL | Modernization Priorities

Moderated by **Dr. Dan DeLaurentis**, *Chief Scientist, SERC*

OUUSD(R&E) Panelists:

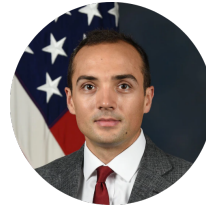
Mr. Maynard Holliday (*Dir Modernization*)

Mr. Ian Crone (*Dir Cyber*)

Dr. Jill Crisman (*Dir AI*)

Dr. Jaret C. Riddick (*Dir Autonomy*)

Dr. Stephanie Rogers (*Dir Biotechnology*)



AFTERNOON PANEL | Systems Engineering Modernization

Moderated by **Mr. Tom McDermott**, *Deputy Director/CTO, SERC*

Hosted by **Ms. Nadine Geier**, *OUUSD(R&E)*

Panelists:

Mr. Geoff Draper, *Senior Scientist, L3 Harris*

Mr. Chris Schreiber, *Systems Engineering Senior Manager, Lockheed Martin Space Systems Company*

Dr. Phil Zimmerman, *Director, Engineering Tools and Environments, OUUSD(R&E)*

