SYSTEMS ENGINEERING RESEARCH CENTER

10th Annual SERC Sponsor Research Review

FHI360 Conference Center
1825 Connecticut Ave NW, 8th Floor
Washington, DC 20009
Thursday, November 8, 2018

Registration, Breakfast and Welcome				
8:00a–8:30a	Registration and Continental Breakfast			
8:30a–8:35a	**Welcome from the SERC Executive Director and Chief Scientist** *Dr. Dinesh Verma, Executive Director, SERC and Dr. Barry Boehm, Chief Scientist and Chair, Research Council, SERC*			
8:35a–8:40a	**Kickoff and Welcome** *Dr. Yehia Massoud, Dean, School of Systems and Enterprises Stevens Institute of Technology*			
8:40a–9:00a	**Systems Engineering Perspectives for Today's Environment** *Dr. Paul Kaminski, CEO and President, Technovation, Inc.*			
Sponsor Perspective and Challenges				
9:00a–9:10a	**Introductory Remarks** *Ms. Kristen Baldwin, Acting Deputy Assistant Secretary of Defense for Systems Engineering [DASD(SE)]*			
State of the SERC				
9:10a–10:00a	**Morning Keynote Address –** *Mr. Paul Scharre, Senior Fellow and Director, Technology and National Security Program, Center for a New American Security. Author of* **Army of None: Autonomous Weapons and the Future of War**			
10:00a-10:15a	Transition Break			
Research Reviews: Four parallel tracks with 40-minute sessions providing in-depth discussions on SERC research projects				
	Track 1: SE and Management Transformation (SEMT) ***(Vista Room)***	**Track 2: Model-Centric Systems Engineering** ***(Angle Room)***	**Track 3: Trusted, Critical & Resilient Systems** ***(Balcony Room D)***	**Track 4: Human Capital Development** ***(Balcony Room E)***
10:15a–10:55a	**Identifying and Measuring Modularity Violations in Cyber-Physical Systems** *Lu Xiao, Stevens*	**PEO Missiles & Space Systems Engineering Methods** *Brock Birdsong, Auburn*	**Human Machine Teaming Concepts for Resilient Cyber Physical Systems** *Inky Kim, USC*	**SE Research Needs and Workforce Development Assessment (Pathfinder)** *Dinesh Verma, Stevens*
11:00a–11:40a	**Verification and Validation (V&V) of System Behavior Specifications** *Kristin Giammarco, NPS*	**Transforming Systems Engineering through Model-Centric Engineering (NAVAIR & ARDEC)** *Mark Blackburn, Stevens*	**Systemic Security and the Role of Hierarchical Design in Cyber-Physical Systems** *Val Sitterle, Georgia Tech*	**Mission Engineering Competencies** *Nicole Hutchison, Stevens* **SE Experience Accelerator** *John Wade, Stevens*
11:45a–12:30p	**Framework for Analyzing Technical Debt** *Ye Yang, Stevens*	**Interactive Model-Centric Systems Engineering (IMCSE)** *Donna Rhodes, MIT*	**Data Science Approaches to Prevent Failures in Systems Engineering** *Karen Marais, Purdue*	**Workforce Evolution (Helix)** *Nicole Hutchison, Stevens* **Capstone Marketplace** *Bill Shepherd, Stevens*
12:30p–1:00p	Lunch (Catered) and Opportunity to View SERC Project Posters			
1:00p–1:30p	**Lunchtime Keynote Panel** - *IAWG Leadership Panel, Moderated by Ms. Kristen Baldwin*			
1:30p–1:45p	Transition Break			
	Track 1: SEMT ***(Vista Room)***	**Track 2: Model-Centric SE** ***(Angle Room)***	**Track 3: Trusted Systems** ***((Balcony Room D)***	**Track 5: Enterprise and Systems of Systems** ***(Balcony Room E)***
1:45p–2:25p	**Formal Methods in Resilient Systems Design using a Flexible Contract Approach** *Azad Madni, USC* **Next Gen. Adaptive Cyber Physical Human Systems** *Azad Madni, USC*	**Meshing Capability & Threat-Based S&T Resource Allocation** *Carlo Lipizzi, Stevens*	**Security Engineering 2018** *Barry Horowitz, Peter Beling, Cody Fleming, UVA*	**ESoS Model for Digital Thread Enabled Acquisition** *Tom McDermott, Stevens*
2:30p–3:10p	**System Qualities (SQs) Tradespace and Affordability** *Barry Boehm, USC*	**ODNI Sensemaking** *Suba Subbalakshmi, Stevens* **SERC Workshops 2018** *Tom McDermott, Stevens*	**Game-Theoretic Risk Assessment for Distributed Systems (GRADS)** *Paul Grogan, Stevens*	**Approaches to Achieve Modularity Benefits in the Acquisition Ecosystem** *Dan DeLaurentis, Navin Davendralingam, Purdue*
3:15p–3:55p	**Electronics Survivability and Product Assurance in Harsh Environments** *Pradeep Lall, Auburn*	**MDA VV&A and Simulation Research** *Mikel Petty, UAH*	**Tools and Methods Framework for Shipboard Power & Energy Systems** *John Dzielski, Stevens*	**Systems Engineering Approaches for Interagency Space Situational Awareness** *Michael Orosz, USC*
4:00p–5:00p	Poster and Networking Session		Executive Advisory Board Meeting (invitation only)	