

19TH ANNUAL SYSTEMS ENGINEERING CONFERENCE

PRESENTATION TOPICS:

- ▶ Agile
- ▶ Architecture
- ▶ Better Buying Power & Affordability
- ▶ Developmental Test & Evaluation
- ▶ Education & Training
- ▶ Engineered Resilient Systems
- ▶ Enterprise Health Management
- ▶ Environment, Safety, and Occupational Health
- ▶ Human Systems Integration
- ▶ Modeling & Simulation
- ▶ Net Centric Operations & Interoperability
- ▶ Program Management
- ▶ Safety & Occupational Health
- ▶ Systems Security Engineering
- ▶ System of Systems Engineering
- ▶ Systems Engineering Effectiveness



OCTOBER 24-27, 2016

WWW.NDIA.ORG/MEETINGS/7870

WATERFORD SPRINGFIELD ▶ SPRINGFIELD, VA

AGILE IN SYSTEMS ENGINEERING

Track Chairs: Ms. Eileen Wrubel, *Software Engineering Institute*
Mr. John Norton, *Raytheon Company*
Ms. Linda Maness, *Northrop Grumman Corporation*

Agile usage is becoming more prevalent within the government space. Lessons learned and ideas for implementation can be shared with those who are experienced in using Agile concepts. This track brings together practitioners with experience applying agile methods in a variety of disciplines and domains, with the goal of collaboration to expand their effective use in systems engineering and on defense programs.

ARCHITECTURE

Track Chairs: Mr. Curtis Potterveld, *The Boeing Company*
Dr. Steven Dam, *SPEC Innovations*

Architecture is a key element in systems engineering. This track addresses architecture frameworks, strategies, and applications to improve system design, test, operations, and support.

BETTER BUYING POWER/ AFFORDABILITY

Track Chair: Mr. Frank Serna, *Draper Laboratory*

Affordability is a key theme in the DoD's Better Buying Power 3.0 Initiative. This year's papers address the development of frameworks for affordability analyses including SE tools.

DEVELOPMENTAL TEST & EVALUATION (DT&E)

Track Chairs: Mr. Joe Manas, *Raytheon Company*

Developmental Test and Evaluation is a key aspect of successful systems engineering. This track addresses areas of test and evaluation where the left side of the systems engineering "V" partner together from early planning through development testing.

EDUCATION & TRAINING

Track Chair: Dr. Don Gelosh, *Worcester Polytechnic Institute*

The Education and Training track is an excellent collection of seven presentations from government, industry, and academia. The presentations describe workforce development activities across a wide range from STEM mentoring, industry certifications, the essence of a systems engineer, and accelerating development of senior technical leaders.

ENGINEERED RESILIENT SYSTEMS (ERS)

Track Chairs: Ms. Lois Hollan, *Potomac Institute*
Mr. Al Coit, *Raytheon Company*

Engineered Resilient Systems (ERS) is a Department of Defense priority initiative that seeks to transform engineering environments so that warfighting systems are more resilient and affordable across the acquisition lifecycle. The track will present new results across the ERS initiative including anchor technologies and computational representation.

ENTERPRISE HEALTH MANAGEMENT, PROGNOSTICS, DIAGNOSTICS, AND RELIABILITY

Track Chair: Mr. Chris Resig, *The Boeing Company*

The health of the system as a whole – the enterprise – is a critical function of systems engineering. This session will touch on some issues relating to the system health, including prognostics, diagnostics and reliability.

ENVIRONMENT, SAFETY, AND OCCUPATIONAL HEALTH (ESOH)

Track Chairs: Mr. Sherman Forbes, *SAF*
Mr. Dave Schulte, *SAIC*
Ms. Lucy Rodriguez, *Booz Allen Hamilton*

The ESOH track provides a cross section of topics that reflect the many different Systems Engineering design considerations included under the DoDI 5000.02 acronym ESOH, as defined in MIL-STD-882E, the DoD Standard Practice for System Safety. This

year, Mr. Robert Gold, the Director of Engineering Enterprise within the Office of the Deputy Assistant Secretary of Defense for Systems Engineering will be the ESOH track's keynote speaker. Mr. Gold will share his perspectives on the integration of the variety of ESOH design considerations into Acquisition and Sustainment program office's Systems Engineering activities. Mr. David Asiello, the Acquisition, Sustainability & Technology Programs lead in the Office of the Assistant Secretary of Defense for Energy, Installations, and Environment will follow Mr. Gold's presentation with his perspectives on the integration across the various ESOH design considerations as part of the systems engineering process. There will be an extended question and answer period following Mr. Gold's and Mr. Asiello's presentations to allow the audience to further explore the integration across the ESOH design considerations and into the Systems Engineering process. The remainder of the ESOH track presentations will address specific acquisition ESOH issues, to include software system safety, hazardous materials management, environmental liabilities, environmental sustainability, energy issues, and lessons learned about program office successes and failures in implementing the DoDI 5000.02 acquisition ESOH policy.

HUMAN SYSTEMS INTEGRATION (HSI)

Track Chairs: Mr. Matthew Risser, *Pacific Science & Engineering Group*
Mr. Patrick Fly, *The Boeing Company*

The HSI sessions include DoD policy maturation and implementation, and technical papers including the application of the Agile Process to operator interface design and HSI implications in designing for complex systems.

INTEROPERABILITY/ NET-CENTRIC OPERATIONS

Track Chair: Mr. Jack Zavin, *OU&L/DASD(C3CB)*

Interoperability is the ability to operate in synergy in the execution of assigned tasks both within the DoD and its external mission partners. Net-Centric Operations supports interoperability by providing the POPIM solution sets that allows the DoD and its mission partners to share information/data/knowledge when needed, where needed, and in a form they can understand and act on with confidence, while protecting it from those who should not have it. Net-Centric Operations/ Interoperability includes technologies such as Service Oriented Architecture, Data Center, Cloud Computing, information transport [e.g. internet, web, radios, data links], as well as both hardware and software [aka Information and Communicative Technology] together with people, operating alone or in organizations, as part of the System of Systems Engineering.

MODELING AND SIMULATION (M&S)

Track Chairs: Dr. Jim Coolahan, *Coolahan Associates*
Mr. Jeff Bergenthal, *JHU Applied Physics Laboratory*

The M&S Track highlights the use of models and simulations in the systems engineering process. It includes sessions on Model-Based Systems Engineering (MBSE), integrated environments, tools & technologies, and M&S applications in several SE process phases.

PROGRAM MANAGEMENT

Track Chair: Dr. Ken Nidiffer, *Software Engineering Institute*

Program Managers and chief Systems Engineers should be the “joined-at-the-hip” leads on all programs that wish to be successful. This session will address some of the issues that our program managers face in the execution of programs.

SYSTEMS ENGINEERING EFFECTIVENESS

Track Chairs: Mr. Joseph Elm, *L-3 Communications*
Mr. Tim White, *Raytheon Company*

Systems Engineering Effectiveness is obvious to some and quite esoteric to others. The goal, however, improving the value obtained for each SE dollar spent, is shared by each who joins the discussion. Please attend the SE Effectiveness track to learn how your peers are implementing practical measures to better quantify the benefits of Systems Engineering and its value to Product Users and Developers alike. Early and effective Systems Engineering has been shown to return excellent value to all project stakeholders. This track will highlight the latest DoD policy and guidance, define new approaches, and provide some practical experiences to assist the DoD and defense industry SE community in achieving a quantifiable and persistent improvement in program outcomes through appropriate application of systems engineering principles and best practices.

SYSTEM OF SYSTEMS (SOS)

Track Chairs: Mr. Rick Poel, *The Boeing Company*
Dr. Judith Dahmann, *The MITRE Corporation*
Mr. Jeff Wolske, *Raytheon Company*

The System of Systems track will feature papers highlighting development SoS engineering approaches, particular SoS SE application areas, and SoS tools and modeling.

SYSTEMS SECURITY ENGINEERING (SSE)

Track Chairs: Ms. Holly Dunlap, *Raytheon Company*
Ms. Melinda Reed, *ODASD/SE*

Systems Security Engineering has become one of the most important aspects in the design of DoD systems. This track will focus on system security engineering and a holistic approach to program protection.

CONFERENCE CHAIR

Mr. Robert Rassa
Director, Engineering Programs
Raytheon Company

DIVISION CHAIR

Mr. Frank Serna
Principal Director, Strategic Initiatives
Draper Laboratory

DIVISION VICE-CHAIR

Mr. Joseph Elm
Director of Engineering
L-3 Communications

NDIA PLANNING TEAM

Ms. Britt Sullivan, CMP
National Defense Industrial Association
Director, Meetings & Events

Ms. Tina Fletcher
National Defense Industrial Association
Meeting Planner

**SYSTEMS ENGINEERING CONFERENCE
AGENDA**

MONDAY, OCTOBER 24, 2016

8:00AM - 12:00PM

Display Move-In

8:00AM - 5:30PM

Registration Open

1:00PM - 5:30PM

Breakout Sessions

		1:00PM - 1:30PM	1:30PM - 2:00PM	2:00PM - 2:30PM	2:30PM - 3:00PM
TRACK 1	SINGLETON	Development Test & Evaluation 18935 Efficacy of Model Based Systems Engineering for Test and Evaluation: A Centrifuge Test Cell Case Study ► Dr. Brennan McCarragher, <i>Draper</i> 1C1	18871 Digital Engineering Applications to Developmental Test & Evaluation ► Dr. Edward Kraft, <i>Air Force Test Center</i>	18934 Applying the Gaps Model of the Service Industry: Four Ways that Prevent Test & Evaluation from Meeting Customer Expectations ► Mr. Allan Alfafara, <i>Northrop Grumman Corporation</i>	
TRACK 2	MILLER	Systems Engineering Effectiveness 19005 Building and Deploying a Re-Usable Requirements Library ► Mr. Warren Smith, <i>WRAYN, LLC</i> 1C2	18952 How Well Do You Know Your Technical Baseline? ► Mr. Farhaan Razi, <i>Riverside Research</i>	18856 Probabilistic Certificate of Correctness for Helicopter Variants ► Dr. Alex Van der Velden, <i>Dassault Systemes</i>	18990 Using Natural Language Parsing (NLP) for Automated Requirements Quality Analysis ► Mr. Christopher Ritter, <i>SPEC Innovations</i>
TRACK 3	VON STERNBERG	Architecture 18859 The Use of Systems Engineering and Open Architectures to Reduce Development Cycle Time in Complex Systems ► Ms. Ann Wong, <i>Defense Acquisition University</i> 1C3	18900 Implementing an Effective Modular Open Systems Approach [MOSA] Framework – Insights into the Application of MOSA to Non-Defense Industries ► Mr. Oliver Hoehne, <i>WSP Parsons Brinckerhoff</i>	18936 Measuring the Value of Modularity from the End-User Point of View ► Dr. Brennan McCarragher, <i>Draper</i>	18984 Unified Architecture Framework - Beyond DODAF 2.0 and UPDM 2.0 ► Mr. Barry Papke, <i>No Magic, Inc.</i>
TRACK 4	GIBSON	System Security Engineering 18737 System Security Engineering Committee Welcome - Accomplishments, Plans, and Opportunities ► Ms. Holly Dunlap, <i>Raytheon Company</i> 1C4	18947 Program Protection and Cybersecurity (System Security Engineering Track) ► Mrs. Melinda Reed, <i>DoD DASD (Systems Engineering)</i>	18703 Systems Security Engineering: Whose Job Is It Anyway? ► Ms. Perri Nejib, <i>Northrop Grumman Corporation</i>	18738 Mission-Aware Cybersecurity ► Mr. Peter Beling, <i>Department of Systems & Information Engineering, University of Virginia</i>
TRACK 5	SELLIER	Education & Training 18921 Developing the Department of Defense Engineering Workforce ► Ms. Aileen Sedmak, <i>OUSD(AT&L)/Systems Engineering</i> 1C5	18840 Competency Metrics for Systems Engineers: Contextualized for Study of the Defense Acquisition Workforce ► Ms. Vanessa Pietrzyk, <i>Strategic Systems Programs</i>	19011 Air Force Materiel Command (AFMC) Competency Management Automated Tool (Briefing and Tool Demonstration) ► Mr. Andrew Jeselson, <i>Air Force Materiel Command</i>	18913 Version 0.75 of the Proposed INCOSE Competency Framework ► Dr. Don Gelosh, <i>Worcester Polytechnic Institute</i>
TRACK 6	KORMAN	Tutorial on Systems Engineering 18876 What Systems Engineers Need to Know About Software ► Dr. Sarah Sheard, <i>Software Engineering Institute</i> 1C6			

MONDAY, OCTOBER 24, 2016 - CONTINUED

3:00PM - 3:30PM

Networking Break

			3:30PM - 4:00PM	4:00PM - 4:30PM	4:30PM - 5:00PM	5:00PM - 5:30PM
TRACK 1	SINGLETON	Modeling & Simulation 1D1	18681 An Approach to Operational Analysis: Doctrinal Task Decomposition ► MAJ Matthew Horning, USA, <i>United States Army Reserve</i>	18878 A Data-Driven, Model-Based Platform to Enable the Digital Fabric for Complex Cyber-Physical Systems and Programs ► Dr. Brian Chambers, <i>DS Government Solutions (DSGS)</i>	18968 Economical Modeling: Minimizing Effort, Maximizing Modeling Return on Investment (ROI) ► Mr. Michael Vinarcik, <i>Booz Allen Hamilton</i>	
TRACK 2	MILLER	Systems Engineering Effectiveness 1D2	18979 Philosophy of Engineering: Initial Explorations ► Mr. Gregory Miller, <i>Naval Postgraduate School</i>	18868 Inclusion of Software in ERS Tradespace ► Dr. Sarah Sheard, <i>Software Engineering Institute</i>	18846 The Three-Phase Optimal Design Method Meets Reality: Lessons Available, Part One ► Dr. John Fay, <i>Odyssey Systems Consulting Group</i>	18846 The Three-Phase Optimal Design Method Meets Reality: Lessons Available, Part Two ► Dr. John Fay, <i>Odyssey Systems Consulting Group</i>
TRACK 3	VON STERNBERG	Architecture 1D3	18939 Technology Update on the Unified Architecture Framework (UAF) ► Mr. Matthew Hause, <i>PTC</i>	18835 Patriot – An Evolution to Open Architecture Through Systems Engineering ► Mr. Philip Levesque, <i>Raytheon</i>	18891 Widely Accepted Standards: Enablers of Competition ► Mr. William Decker, <i>Defense Acquisition University</i>	
TRACK 4	GIBSON	System Security Engineering 1D4	18949 Engaging the DoD Enterprise to Protect U.S. Military Technical Advantage: Finding the Right Partners to Help Industry Protect DoD's Unclassified Controlled Technical Information ► Mr. Brian Hughes, <i>Department of Defense</i>	18946 DoD Acquisition Strategy for Cyber Resilient Weapon Systems (Systems Security Engineering Track) ► Mrs. Melinda Reed, <i>DoD DASD (Systems Engineering)</i>	18981 Putting the SYSTEM in Security Engineering - An Overview of NIST SP 800-160 ► Mr. Michael McEvelley, <i>The MITRE Corporation</i>	
TRACK 5	SELLIER	Education & Training 1D5	18888 Facilitating the Transition from Senior Manager to Executive Leader ► Dr. Michael Pennotti, <i>Stevens Institute of Technology</i>	18996 Use MBSE Tools to Teach Systems Engineering! ► Dr. Steven Dam, ESEP, <i>SPEC Innovations</i>	19017 Amphibious Engineering – Learning to Live In Two Worlds for Fun and Profit ► Mr. Steve Tolle, <i>Immersion Point Technologies</i>	
TRACK 6	KORMAN	Tutorial on Systems Engineering 1D6	18876 (cont'd) What Systems Engineers Need To Know About Software ► Dr. Sarah Sheard, <i>Software Engineering Institute</i>			

5:30PM

Adjourn

TUESDAY, OCTOBER 25, 2016

- 7:15AM - 7:00PM **Registration Open**
- 7:15AM - 8:15AM **Networking Breakfast**
- 8:15AM - 8:30AM **Opening Remarks**
Mr. Robert Rassa, *NDIA Systems Engineering Conference Chair; Director, Engineering Programs, Raytheon Company*
Mr. Frank Serna, *Chair, NDIA Systems Engineering Division; Principal Director, Strategic Initiatives, Draper Laboratory*
- 8:30AM - 9:30AM **Keynote Presentation**
Mr. Stephen Welby, *Assistant Secretary of Defense for Research and Engineering*
- 9:30AM - 10:00AM **Networking Break**
- 10:00AM - 11:45AM **Systems Engineering Issues Panel**
Moderator: Mr. Frank Serna, *NDIA Chair, Systems Engineering Division; Principal Director, Strategic Initiatives, Draper Laboratory*
- Panelists:**
- ▶ Mr. Paul Bailey, *Chief Systems Engineer, Raytheon Company*
 - ▶ Mr. Randall Lum, *Corporate Director, Engineering, Northrop Grumman Corporation*
 - ▶ Ms. Christi Gau Pagnanelli, *Director, BDS Systems Engineering and Engineering Multi-Skilled Leadership, Boeing Defense, Space & Security*
 - ▶ Mr. Jeffrey Wilcox, *Corporate Vice President, Engineering and Program Operations, Lockheed Martin Corporation*
- 11:45AM - 12:00PM **Presentation of Lt Gen Thomas R. Ferguson Systems Engineering Excellence Awards**
- Individual Award Winner:**
- ▶ Mr. Stephen Welby, *Assistant Secretary of Defense for Research and Engineering*
- Group Winner:**
- ▶ CLUSTER TOPGATE Team, *Naval Undersea Warfare Center (NUWC) Division Newport*
- 12:00PM - 1:15PM **Networking Luncheon**
- 1:15PM - 3:00PM **DoD Program Managers Panel:**
Moderator: Col David McIllece, USAF, *Deputy Director, Systems Engineering and Policy*
- Panelists:**
- ▶ CAPT Tim Hill, *USN, Executive Officer, Naval Air Warfare Center Training Systems Division/Naval Support Activity Orlando*
 - ▶ CAPT Mark Vandroff, *USN, Commanding Officer, Naval Surface Warfare Center Carderock*
 - ▶ Col Darby McNulty, *USA, U.S. Army, PM Integrated Personnel and Pay System*
 - ▶ Mr. Dana Whalley, *Space Fence Program Manager, Air Force Life Cycle Management Center (AFLCMC)*
- 3:00PM - 3:30PM **Networking Break**
- 3:30PM - 5:15PM **DoD Executive Panel**
Moderator: Ms. Kristen Baldwin, *Deputy Assistant Secretary of Defense, Systems Engineering (Acting)*
- Panelists:**
- ▶ Dr. Martin Irvine, *Director of Systems Engineering, Deputy Assistant Secretary of the Navy for Research, Development, Test and Evaluation (DASN RDT&E)*
 - ▶ Mr. Jeff Stanley, *Associate Deputy Assistant Secretary, Science, Technology and Engineering, Assistant Secretary for Acquisition United States Department of the Air Force*
 - ▶ Ms. Dawn Schaible, *Deputy Chief Engineer, NASA*
 - ▶ Mr. Kerry Wilson, *Deputy Director, Office of Homeland Security (DHS) Science and Technology (S&T) Directorate*
 - ▶ Mr. Jyuji Hewitt, *Executive Deputy to the Commanding General, U.S. Army Research, Development and Engineering Command*
- 5:15PM - 7:00PM **Networking Reception**

WEDNESDAY, OCTOBER 26, 2016

7:00AM-5:15PM

Registration

7:00AM-8:00AM

Networking Breakfast

			8:00AM - 8:30AM	8:30AM - 9:00AM	9:00AM - 9:30AM
TRACK 1	SINGLETON	Modeling & Simulation 3A1	18987 Model Based Systems Engineering with SysML – Key Concepts that Form the Core of the Practice ▶ Mr. Barry Papke, <i>No Magic, Inc.</i>	18985 Advanced Modeling in MBSE – Using Parametrics and Simulation to Evaluate Trades and Alternatives ▶ Dr. Saulius Pavalkis, <i>No Magic, Inc.</i>	18945 SysML-Based Simulation ▶ Mr. James Baker, <i>Sparx Systems</i>
TRACK 2	MILLER	Systems Engineering Effectiveness 3A2	18919 Essential Elements of a Reliability and Maintainability Engineering Program ▶ Mr. Andrew Monje, <i>ODASD(SE)</i>	18925 DoD Systems Engineering Policy, Guidance and Standardization ▶ Ms. Aileen Sedmak, <i>OUSD(AT&L), Systems Engineering</i>	18928 Using the 5 Benefits of a Modular Open Systems Approach to Choose Enablers ▶ Ms. Philomena Zimmerman, <i>ODASD(SE)</i>
TRACK 3	VON STERNBERG	Engineered Resilient Systems 3A3	19037 Science and Technology: The Department's Approach to Innovation ▶ Ms. Mary Miller, <i>ASD(R&E)</i>	19019 ERS-An Element of Digital Engineering Practice in Systems Acquisition ▶ Mr. Robert Gold, <i>DASD(SE)</i>	18982 Engineered Resilient Systems (ERS) Overview - 2016 ▶ Dr. Jeffery Holland, <i>U.S. Army Engineer Research and Development Center</i>
TRACK 4	GIBSON	Security Systems Engineering 3A4	18711 Cyber Resiliency in the SE “V” – Left Side Focus on Architecture and Design [SSE] ▶ Ms. Suzanne Hassell, <i>Raytheon Company</i>	18704 System Security Engineering (SSE), An Enabler for Mission Assurance ▶ Mr. Daniel Holtzman, <i>Cyber Security Engineering & Resiliency, USAF</i>	18920 Long-Term Strategy for DoD Trusted and Assured Microelectronics Needs ▶ Dr. Jeremy Muldavin, <i>OSD DASD(SE)</i>
TRACK 5	SELLER	Agile 3A5	19001 Agile Systems Engineering: Predictable, Flexible and Adaptable Products and Projects ▶ Mr. Matthew Hause, <i>PTC</i>	18619 Modeling the Return on Investment for Paired Requirements Engineering ▶ Dr. Michael Prendergast, <i>Raytheon Company</i>	18909 Agile Systems Engineering to Maximize Research Value ▶ Dr. Rosa Heckle, <i>The MITRE Corporation</i>
TRACK 6	KORMAN	Environment, Safety & Occupational Health 3A6	19010 The Opportunities with Integrating ESOH into SE: An ODASD(SE) Perspective ▶ Mr. Robert Gold, <i>DASD(SE)</i>	18887 ESOH - a Design Consideration with Benefits ▶ Mr. David Asiello, <i>OASD(EI&E)</i>	DoD Acquisition ESOH IPT Principals Questions & Answers Session ▶ Mr. David Asiello, <i>OASD(EI&E)</i> ▶ Mr. Robert Gold, <i>DASD(SE)</i>

9:30AM-10:00AM

Networking Break

WEDNESDAY, OCTOBER 26, 2016 - CONTINUED

			10:00AM - 10:30AM	10:30AM - 11:00AM	11:00AM - 11:30AM	11:30AM - 12:00PM
TRACK 1	SINGLETON	Modeling & Simulation 3B1	18927 Models, Simulations, and Digital Engineering in Systems Engineering Restructure ► Ms. Philomena Zimmerman, <i>ODASD(SE)</i>	18901 Resilient Autonomous Vehicle Control Using Model Based Systems Engineering ► Mr. Christopher Finlay, <i>Raytheon Company</i>	18961 An Agent-Based Model of System of Systems for Air Traffic Management Decision Support ► Mr. Ehsan Esmaeilzadeh, <i>The George Washington University</i>	18896 Developing and Distributing A CubeSat Model-Based Systems Engineering (MBSE) Reference Model – Interim Status ► Dr. David Kaslow, <i>S.E.L.F</i>
TRACK 2	MILLER	Systems Engineering Effectiveness 3B2	18963 Air Force Strategic Development Planning and Experimentation (SDPE) ► Dr. Gregory Spanjers, <i>Air Force Research Laboratory</i>	18749 Increasing Systems Engineering Effectiveness Through Operational Risk Considerations ► Mr. Brian Gallagher, <i>CACI International</i>	18842 Cumulative Effect of Departures from Specifications (DFS) Utilizing a Risk Management Framework ► Mr. Raymond O’Toole, <i>The George Washington University - EMSE Off Campus</i>	18860 Obsolescence Risk Assessment and Management Approach for Software ► Mr. Ted Bowlds, <i>The George Washington University</i>
TRACK 3	VON STERNBERG	Engineered Resilient Systems 3B3	18983 Engineered Resilient Systems (ERS) Open Architecture ► Dr. Cary Butler, <i>U.S. Army Engineer Research and Development Center</i>	18998 Engineered Resilient Systems (ERS) Trade Studio Demonstration ► Mr. David Stuart, <i>U.S. Army Engineer Research and Development Center</i>	19015 Modeling and Simulation to Impact Rotorcraft Acquisition ► Dr. Marvin Moulten, <i>U.S. Army AMRDEC, Aviation Engineering Directorate</i>	18906 A Physics-Based Distributed Collaborative Design Process for Engineered Resilient Systems ► Dr. Raymond Kolonay, <i>USAF AFRL</i>
TRACK 4	GIBSON	Systems Security Engineering 3B4	18850 A Justification for Comprehensive Critical Component Identification During the Program Protection Process ► Mrs. Beverly Ware, <i>The MITRE Corporation</i>	18974 Managing the Security Risk for FPGA IP ► Mr. John Hallman, Jr., <i>MacAulay-Brown</i>	18914 System Security Modeling of Feature Selection and Behavior Analysis for Efficient Malware Detection ► Mr. Joseph Mikhail, <i>George Washington University</i>	19053 System Security Engineering & Cyber Resiliency: The Component Connection ► Ms. Holly Dunlap, <i>Raytheon Company</i>
TRACK 5	SELLIER	Agile 3B5	18912 The Benefits of Agile Systems Engineering in Program Management ► Mr. Oliver Hoehne, <i>WSP Parsons Brinckerhoff</i>	18988 Agile in DoD Acquisition: A Systemic Problem ► Mr. Steven Praizner, <i>Naval Surface Warfare Center, Dahlgren Division</i>	19006 Agile Systems Engineering, A Case Study ► Mr. Warren Smith, <i>WRAYN, LLC</i>	
TRACK 6	KORMAN	Environment, Safety & Occupational Health 3B6	19008 Deficiencies in Understanding and Implementing DoD Acquisition Environment, Safety, and Occupational Health (ESOH) Policy ► Mr. Sherman Forbes, <i>SAF/AQRE (Engineering Management Policy Division)</i>	18848 An Approach to Ensure Design Considerations are Part of the Materiel Solution: ESOH-Related Capabilities in JCIDS Examples ► Mr. Robert Mirick, <i>Booz Allen Hamilton</i>	18852 Environmental Liabilities for DoD Weapons Systems ► Ms. Patricia Huheey, <i>OASD(EI&E)</i>	18917 KC-46 Program Environment, Safety and Occupational Health Team Wins SECDEF Environmental Excellence in Weapon System Acquisition Award ► Mr. John Stallings, <i>AFLCMC/WKCDS, KC-46 Tanker Program</i>

WEDNESDAY, OCTOBER 26, 2016 - CONTINUED

			1:15PM - 1:45PM	1:45PM - 2:15PM	2:15PM - 2:45PM
TRACK 1	SINGLETON	Modeling & Simulation 3C1	18958 SAVI Behavior Model Consistency Analysis ▶ Dr. David Redman, <i>Aerospace Vehicle System Institute (AVSI)</i>	18750 Multi-Scale, Multi-Fidelity Systems Design and Simulation Environment ▶ Dr. Peter Menegay, <i>SynaptiCAD</i>	18989 Connecting Cost, Schedule, and Performance Data for More Effective Simulation ▶ Mr. Christopher Ritter, <i>SPEC Innovations</i>
TRACK 2	MILLER	Systems Engineering Effectiveness 3C2	18873 Using Systems Engineering to Inform Mission Assurance: A Study of Organizational Interrelationships ▶ Mr. Timothy White, <i>Raytheon Company</i>	18916 A Practical Framework for Effective Requirements Management Throughout the Life-Cycle ▶ Mr. Oliver Hoehne, <i>WSP Parsons Brinckerhoff</i>	18926 Integration of An In-Vehicle Network Utilizing VICTORY Standards on a USMC M-ATV MRAP Vehicle ▶ Mr. Ernest Sanchez, <i>USMC</i>
TRACK 3	VON STERNBERG	Engineered Resilient Systems 3C3	19009 Advances in an Early-Stage Resilient Submarine Design Capability ▶ Dr. Morgan Parker, <i>Naval Surface Warfare Center Carderock Division</i>	18975 Engineered Resilient Systems: A Practical Armament Example and Study ▶ Mr. David Chau, <i>U.S. Army RDECOM-ARDEC</i>	18999 High Performance Computing in Support of Engineering Resilient Systems (HPCMP) ▶ Dr. Robert Wallace, <i>Department of Defense High Performance Computing Modernization Program</i>
TRACK 4	GIBSON	Systems Security Engineering 3C4	18955 Injecting Security into Decision Analysis ▶ Dr. Mark Winstead, <i>The MITRE Company</i>	18929 Whitelisting Products: Organizational Use of Approved Product Lists (APLs) for Hardware and Software ▶ Mr. Donald Davidson, <i>Lifecycle Risk Mgt & CS/Acquisition Integration Office of the Deputy CIO for CyberSecurity (CS) DOD-CIO</i>	19016 A Systems Engineering Approach to Applying RMF for a Successful Program and a Secure System - A Case Study ▶ Mr. Craig Covak, <i>Lockheed Martin Corporation</i>
TRACK 5	SELLIER	Program Management 3C5	18950 Mission Engineering ▶ Mr. Robert Gold, <i>Department of Defense, DASD(SE)</i>	18966 DoD Engineering Technical Services (ETS) Best Practices and Lessons Learned Guidebook ▶ Mr. Robin Hicks, <i>OUSD(AT&L)/R&E/SE</i>	18993 What About Risk? Moving Beyond the Triple Constraint ▶ Mr. Daniel Hetteema, <i>SPEC Innovations</i>
TRACK 6	KORMAN	Environment, Safety & Occupational Health 3C6	18849 DoD's REACH Strategy and its Impact to Acquisition and Sustainment ▶ Dr. Patricia Underwood, <i>OASD(EI&E)</i>	18824 Defense Acquisition Materials Declaration - Update ▶ Col Tim Sheehan, USAF (Ret), <i>Raytheon Company</i>	18918 Updating NAS 411 and NAS 411-1 to Assist with Hazardous Materials Management ▶ Ms. Karen Gill, <i>Booz Allen Hamilton</i>

2:45PM - 3:15PM

Networking Break

WEDNESDAY, OCTOBER 26, 2016 - CONTINUED

			3:15PM - 3:45PM	3:45PM - 4:15PM	4:15PM - 4:45PM	4:45PM - 5:15PM
TRACK 1	SINGLETON	Modeling & Simulation 3D1	18924 Advancing the Use of the Digital System Model Taxonomy ► Ms. Philomena Zimmerman, <i>ODASD(SE)</i>	18897 Realizing a Collaborative M&S Environment for System Acquisition from Five Key Components ► Dr. James Coolahan, <i>Coolahan Associates, LLC</i>	18855 Model Centric Engineering - Insights and Challenges: Primary Takeaways from a Government-Industry Forum ► Dr. Dinesh Verma, <i>Systems Engineering Research Center</i>	18971 Systems Engineering Transformation ► Mr. Troy Peterson, <i>INCOSE</i>
TRACK 2	MILLER	Systems Engineering Effectiveness 3D2	18948 Remotely Piloted Vehicle Driving System ► Ms. Doris Turnage, <i>U.S. Army Engineer Research and Development Center</i>	18951 Systems Engineering Methods for Incorporating Innovative Technologies in DoD Systems ► Mr. Scott Lucero, <i>Department of Defense</i>	18845 Setting Strategic Requirements for Tradespace Tools ► Dr. Simon Goerger, <i>U.S. Army Engineer Research and Development Center</i>	18841 Usability: the Forgotten 'ility' in the Engineering Process ► Mr. Kevin Hovis, <i>The George Washington University</i>
TRACK 3	VON STERNBERG	Engineered Resilient Systems 3D3	18902 ERS Methodology Development and Architectural Assessment via ESAVE (Efficient Supersonic Air Vehicle) ► Mr. Christopher Oster, <i>Lockheed Martin Corporation</i>	18910 Trade Space Analytics: The Future of Systems Engineering ► Mr. Andrew Hinsdale, <i>Raytheon Missile Systems</i>	18973 ERS Tradespace Toolset ► Dr. Tommer Ender, <i>Georgia Tech Research Institute</i>	18903 Developing the ERS Collaboration Framework ► Dr. Patrick Martin, <i>BAE Systems, Inc.</i>
TRACK 4	GIBSON	Systems Security Engineering 3D4	18923 Software Assurance (SwA) & The Risk Management Framework (RMF) ► Mrs. Michele Moss, <i>Booz Allen Hamilton</i>	19020 CyberFMECA an Adaption of the FMECA Process to Cyber Effects Critically Determination ► Mr. Roy Wilson, <i>NAVAIR</i>	18953 DoD Joint Federated Assurance Center (JFAC) Update ► Mr. Thomas Hurt, <i>Department of Defense</i>	18954 DoD Joint Federated Assurance Center (JFAC) Industry Outreach ► Mr. Thomas Hurt, <i>Department of Defense</i>
TRACK 5	SELLIER	Program Management & Better Buying Power 3D5	18978 Existing Technical Data License Rights – Barrier to MOSA? ► Mr. William Decker, <i>Defense Acquisition University</i>	19018 Bridging the ABYSS (Changing the Tires on the Bus While Moving) – Transitioning An In-Motion Development Program From DIACAP to RMF ► Mr. Michael Coughenour, <i>Lockheed Martin Corporation</i>	18857 Key Parameter Development and Management ► Mr. Shawn Dullen, <i>ARDEC</i>	18891 Widely Accepted Standards: Enablers of Competition ► Mr. William Decker, <i>Defense Acquisition University</i>
TRACK 6	KORMAN	Environment, Safety & Occupational Health 3D6	19014 Naval Sea Systems Command's New Approach for Managing the Risk of Hazardous Material Usage in New Acquisition ► Ms. Jessica Klotz, <i>Naval Surface Warfare Center Carderock Division</i>	18970 Logistics Product Data for Hazardous Materials Tracking ► Ms. Mary Hammerer, <i>Naval Air Systems Command</i>	18911 Climate Resilience in Acquisition: Roles & Responsibilities In DoD ► Ms. Elsa Patton, <i>OASD/ ESOH</i>	19000 Sustainability Analysis – Enhancing System Affordability by Integrating Life Cycle Impacts on Resource Availability, Climate Change, Human Health, and Ecosystem Quality with Life Cycle Cost Estimates ► Mr. Drew Rak, <i>Noblis</i>

5:15PM

Adjourn

THURSDAY, OCTOBER 27, 2016

7:00AM-5:45PM

Registration

7:00AM-8:00AM

Networking Breakfast

			8:00AM - 8:30AM	8:30AM - 9:00AM	9:00AM - 9:30AM
TRACK 1	SINGLETON	Modeling & Simulation 4A1	18826 Immersive Technologies in a Systems Engineering Environment ▶ Mr. Michael Rench, <i>Raytheon Company</i>	18875 Systems Engineering for Additive Manufacturing: Design and Manufacturing Modeling and Simulation Optimization ▶ Ms. Rani Richardson, <i>Dassault Systemes</i>	18991 A 21st Century Approach to MBSE ▶ Mr. Daniel Hettema, <i>SPEC Innovations</i>
TRACK 2	MILLER	Systems Engineering Effectiveness 4A2	18831 A Systems Engineering Approach to Improve a Class of Information Technology Best Practices ▶ Mr. Khaled Alajmi, <i>The George Washington University</i>	18828 The Shape of Uncertainty in Systems Engineering Peer Reviews: Requirements Versus Design Activities ▶ Dr. Paul Nugent, <i>Western Connecticut State University</i>	18880 Engineering the Enterprise ▶ Ms. Kathleen Walsh, <i>RDECOM ARDEC</i>
TRACK 3	VON STERNBERG	Engineered Resilient Systems 4A3	18839 The DoD HPCMP CREATE Program—Virtual Prototyping to Enable Rapid Development of Innovative DoD Weapon Systems ▶ Dr. Douglass Post, <i>DoD High Performance Computing Modernization Program</i>	19035 Using Engineering Resilient Systems Tools for Trade Exploration of Military Ground Vehicles with an Iterative Concept Development and Performance Analyses Process ▶ Dr. Matthew Castanier, <i>U.S. Army Tank Automotive Research, Development, and Engineering Center</i>	18576 Resilience Heuristics Engineering ▶ Mr. Kenneth Stavish, <i>BAE Systems, Inc.</i>
TRACK 4	GIBSON	Systems Security Engineering 4A4	18600 Cybersecurity In Acquisition and Sustainment - A Systems and Software Assurance Capability Gap Analysis ▶ Dr. Kenneth Nidiffer, <i>Software Engineering Institute</i>	18889 Cybersecurity Test and Evaluation Event Lessons Learned at the National Cyber Range ▶ Mr. Peter Christensen, <i>Test Resource Management Center</i>	
TRACK 5	SELLIER	Better Buying Power & Affordability 4A5	18942 Application of System Level Technology Readiness to Cost and Schedule Performance in Major Development Programs ▶ LtCol Alexander Walan, USAF, <i>USAF/AFRL</i>	18822 Affordability Through Requirements: Elicit The Least, But Not Less ▶ Dr. Alejandro Salado, <i>Virginia Tech</i>	18879 Innovate or Integrate: An Alternate Approach to DoD Acquisitions ▶ Mr. Daniel Manuel, Jr., <i>Modern Technology Solutions, Inc.</i>
TRACK 6	KORMAN	Environment, Safety & Occupational Health 4A6	19004 Operational Energy in the Department of Defense ▶ Mr. Alan Bohnwagner, <i>OSD/ OUSD(AT&L)/OASD(EI&E)</i>	18977 DoD Siting Clearinghouse: The Impact of Commercial Energy Development on Military Systems and National Defense Missions ▶ Mr. David Tancabel, <i>DoD Siting Clearinghouse</i>	18874 Expeditionary Hybrid Power System Sizing and Analysis Tool ▶ Mr. Jason Zumstein, <i>Barbaricum</i>

9:30AM - 10:00AM

Networking Break

THURSDAY, OCTOBER 27, 2016 - CONTINUED

		10:00AM - 10:30AM	10:30AM - 11:00AM	11:00AM - 11:30PM	11:30AM - 12:00PM
TRACK 1	SINGLETON	Modeling & Simulation 18995 Using MBSE to Reduce Early Life Cycle Errors ► Dr. Steven Dam, ESEP, <i>SPEC Innovations</i> 4B1	18908 Industry Standards Compliance Using MBSE ► Mr. Ronald Kratzke, <i>Vitech Corporation</i>	18986 MBSE PLM Integration - Systems Engineering Solution from Conceptual Design to Implementation ► Dr. Saulius Pavalkis, <i>No Magic, Inc.</i>	18938 Integrating the RMF with MBSE ► Ms. Ronda Henning, <i>Harris Corporation</i>
TRACK 2	MILLER	Systems Engineering Effectiveness 18832 System Readiness - A Look Beyond TRAs ► Mr. Donald York, <i>TASC, An Engility Company</i> 4B2	18956 Timing It Right for Successful System Developments ► Mr. Robert Scheurer, <i>The Boeing Company</i>		18997 Improving DoD Acquisition with Set-Based Design ► Mr. Daniel Browne, <i>Georgia Tech Research Institute</i>
TRACK 3	VON STERNBERG	Net Centric Operations & Interoperability 18895 Track Introduction ► Mr. Jack Zavin, <i>OUSD(AT&L)/DASD(C3CB)</i> 4B3	19176 Mission Partner Environment (MPE) ► Mr. Mike Richards, <i>Joint Staff, J6</i>	18858 JITC Unified Capabilities Team Reduces Testing Time, Cost; Increases Testing Capacity ► Mr. Gerry Lopez, <i>Joint Interoperability Test Command (JITC)</i>	18867 Requirements Analysis Framework for Test (RAFT) Process ► Mr. Davin Keith, <i>Joint Interoperability Test Command</i>
TRACK 4	GIBSON	Systems Security Engineering 18884 (panel) System Security Statistical Test Optimization Panel Discussion ► Dr. Neal Mackertich, <i>Raytheon Company</i> 4B4			
TRACK 5	SELLIER	Better Buying Power & Systems of Systems Engineering 18959 A Method for Affordability Maturity Assessment ► Mr. Long Dong, <i>Lockheed Martin Corporation</i> 4B5	18892 Additive Manufacturing and the Impact on the Defense Industrial Base ► Mr. William Decker, <i>Defense Acquisition University</i>	18674 Battle Control System of Systems (SoS) Engineering Analysis ► Dr. Judith Dahmann, <i>The MITRE Corporation</i>	18853 Confluence of Systems of Systems, Model Based Engineering and Modular Open Systems – An Example ► Mr. Garrett Wampole, <i>The MITRE Corporation</i>
TRACK 6	KORMAN	Environment, Safety & Occupational Health & Human Systems Integration 18965 Modeling Safety and Cybersecurity Controls in SysML ► Mr. Michael Vinarcik, <i>Booz Allen Hamilton</i> 4B6	19080 Air Force Human Systems Integration - Capability and Requirements Tool (HSI-CRT) ► Mr. Roger Spondike, <i>Booz Allen Hamilton</i>	18980 Control Station Human-Machine Interface (CaSHMI): An Implemented Use Case of Unmanned Systems Command and Control (C2) Via A Standards-Based Enterprise Architecture ► Mr. Darren Powell, <i>Space and Naval Warfare Systems Center Pacific</i>	18838 A Human-Centered Approach to Address Task Complexity ► Dr. Holly Handley, <i>Old Dominion University</i>

12:00PM - 1:15PM

Networking Lunch

THURSDAY, OCTOBER 27, 2016 - CONTINUED

			1:15PM - 1:45PM	1:45PM - 2:15PM	2:15PM - 2:45PM
TRACK 1	SINGLETON	Modeling & Simulation 4C1	18836 Cyber Modeling and Simulation Framework ► Mr. Ambrose Kam, <i>Lockheed Martin Corporation</i>	18771 Modeling Cyber Attack Surface on the Power Grid ► Mr. Ambrose Kam, <i>Lockheed Martin Corporation</i>	
TRACK 2	MILLER	Education & Training 4C2	19002 Shifting Engineering Education for Resilient Systems Panel ► Dr. Owen Eslinger, <i>U.S. Army Engineer Research and Development Center</i>		
TRACK 3	VON STERNBERG	Net Centric Operations & Interoperability 4C3	19047 Utility of the DI2E Reference Architecture ► Dr. John McDowall, <i>BAE Systems, Inc.</i>	19048 Mission Threads in the DI2E ► Mr. Vincent Kluth, <i>BAE Systems, Inc.</i>	19057 Innovative Use of Competitions to Help Solve Warfighter Problems ► Ms. Susan Kapr, <i>Booz Allen Hamilton</i>
TRACK 4	GIBSON	Systems Security Engineering 4C4	18836 Cyber Modeling and Simulation Framework ► Mr. Carl Hein, <i>X-SIM, LLC</i>	18943 Systems Approach for Cybersecurity for Advanced Manufacturing ► Ms. Catherine Ortiz, <i>Defined Business Solutions</i>	18972 Model Based Cyber Enterprise Assessment System (MOBEAS) ► Dr. Jerry Couretas, <i>Booz Allen Hamilton</i>
TRACK 5	SELLER	Systems of System Engineering 4C5	18869 Special Session: DARPA Systems of Systems Programs ► Dr. John Shaw, <i>DARPA</i>		
TRACK 6	KORMAN	Human Systems Integration 4C6	18967 Development of Control Station Human-Machine Interface (CaSHMI) for Unmanned Systems ► Dr. Lynn Ewart, <i>Naval Undersea Warfare Center Division Newport</i>	18944 Improving the Decision Space in C4ISR Sstems: An Adaptation of a Human Systems Integration (HSI) Analytic Approach In System-of-Systems (SoS) ► Dr. Matthew Risser, <i>Pacific Science & Engineering Group</i>	18817 Influencing Cost-Effective System Sustainment with Human Systems Integration ► Ms. Sarah Orr, <i>U.S. Air Force 711HPWIHP</i>

2:45PM - 3:15PM

Networking Break

THURSDAY, OCTOBER 27, 2016 - CONTINUED

			3:15PM - 3:45PM	3:45PM - 4:15PM	4:15PM - 4:45PM
TRACK 1	SINGLETON	Modeling & Simulation 4D1	<u>18854</u> Return on Investment for Complex Projects Utilizing Model Based Systems Engineering (MBSE) ► Mr. Michael Gooden, <i>The George Washington University</i>		
TRACK 2	MILLER	Miscellaneous Topics 4D2	<u>18898</u> Avoiding Non-Technical Sources of Software-Intensive Systems Technical Debt ► Dr. Barry Boehm, <i>USC</i>	<u>18870</u> Developing Logistics Strategy Using Optimization with Uncertain Data: The Marine Corps Assault Amphibious Vehicle Return to Condition Code Alpha (RCCA) ► Dr. Edward DeVilliers, <i>DeVilliers Technology Solutions, LLC</i>	
TRACK 3	VON STERNBERG	Net Centric Operations & Interoperability 4D3	<u>18683</u> The Battlefield of Everything: Myth? Mess? Or Imminent? ► Dr. Sherin Kamal, <i>SAIC</i>	<u>18937</u> Enabling Net-Centric Warfare with MBSE and The IoT ► Maj Gen Brent Baker, <i>USAF (Ret), PTC</i>	<u>19049</u> Innovative Use of Competitionsto Help Solve Warfighter Problems ► Mrs. Susan Kapr, <i>Booz Allen Hamilton</i>
TRACK 4	GIBSON	Systems Security Engineering 4D4	<u>18951</u> Systems Engineering Methods for Incorporating Innovative Technologies in DoD Systems ► Mr. Scott Lucero, <i>Department of Defense</i>		
TRACK 5	SELLIER	Systems of Systems Engineering 4D5	<u>18864</u> Cross-Scale Resilience: Bridging System of Systems and Constituent Systems Engineering and Analysis ► Dr. Valerie Sitterle, <i>Georgia Tech Research Institute</i>	<u>18881</u> Understanding System Interdependence to Improve Resilience of Shipboard Cyber Physical System ► Mr. Caesar Benipayo, <i>The George Washington University</i>	<u>18890</u> Identifying Hidden Requirements in System of Systems ► Mr. Gary Lantz, Sr., <i>The George Washington University</i>
TRACK 6	KORMAN	Human Systems Integration 4D6	<u>18862</u> Applying Agile and User Centered Design Processes With Large-Scale DoD Programs ► Ms. Debbie Ashmore, <i>Lockheed Martin Corporation</i>	<u>18863</u> Human Integrated ePerformance Optimization: Proactively Assessing and Informing the Warfighter of Their Physiological State ► Mr. Andrew Taylor, <i>U.S. Army Natick, Research Engineering & Development Center</i>	<u>18931</u> UAF Support for Human Systems Integration and DoDAF - Bring People and Systems Together ► Mr. Matthew Hause, <i>PTC</i>

THURSDAY, OCTOBER 27, 2016 - CONTINUED

		4:45PM - 5:15PM	5:15PM - 5:45PM
TRACK 1	SINGLETON		
TRACK 2	MILLER		
TRACK 3	VON STERNBERG		
TRACK 4	GIBSON		
TRACK 5	SELLIER	<p>Systems of Systems Engineering</p> <p>4D5</p> <p><u>18905</u> Exploring Engineered Complex Adaptive Systems of Systems ▶ Ms. Bonnie Johnson, <i>Naval Postgraduate School</i></p>	<p><u>18922</u> Applying System of System Types to Government-Wide Shared Services ▶ Ms. Marla Ozarowski, <i>The MITRE Corporation</i></p>
TRACK 6	KORMAN	<p>Human Systems Integration</p> <p>4D6</p> <p><u>18941</u> Assuring Human Control Authority Over Autonomous Systems ▶ Dr. Jennifer Narkevicius, <i>Jenius, LLC</i></p>	

DISPLAYS

ADI Technologies, Inc.

Defense Acquisition University

Georgia Tech Research Institute

Jama Software

Project Performance International

Sparx Systems Pty, Ltd.

SPEC Innovations

The Johns Hopkins University

U.S. Army RDECOM-ARDEC-SED

5:45PM

Adjourn Conference

SYSTEMS ENGINEERING CONFERENCE
ADDITIONAL AUTHORS

18674	Mr. Doug Flournoy Mr. John Roberts	18863	Dr. R. Bruce Floersheim Dr. Joseph Hitt Dr. Jay Kudva Mr. Henry Girolamo
18703	Ms. Dawn Beyer	18864	Dr. Santiago Balestrini-Robinson Dr. Tommer Ender Dr. Simon Goerger
18750	Mr. Dan Notestein	18867	Mr. Stephen Lovorn
18824	Ms. Yvonne Pierce	18868	Dr. Michael Konrad Dr. Forrest Shull Mr. Michael Gagliardi Ms. Rita Creel
18826	Mr. Keith Janasak Mr. Neal Tilghman	18869	Dr. Judith Dahmann
18828	Mr. Richard Montague	18870	Mr. Douglas Smith
18831	Dr. Shahram Sarkani Dr. Thomas Mazzuchi	18874	Mr. Joe Barniak
18832	Dr. Cheyne Homberger Mr. Marc Austin	18875	Mr. Shawm Ehrstein
18835	Mr. John Howley Mr. Thomas Wiley	18878	Mr. Clarke Orzalli
18836	Mr. Carl Hein Mr. Michael Stebnisky	18880	Ms. Radhika Patel
18838	Dr. Beverly Knapp	18888	Dr. Pamela Burke Mr. Steven Jones
18839	Dr. Richard Vogelsong Dr. John D'Angelo Dr. Saikat Dey Dr. Robert Meakin	18889	Mr. Robert Tamburello Ms. Lizann Messerschmidt
18840	Dr. Holly Handley	18901	Dr. John Short Mr. Jason Shelton Ms. Stacy Dujardin
18845	Dr. Randy Buchanan Ms. Drew Kelley	18905	Dr. Alejandro Hernandez
18846	Dr. Gregory Hutto Mr. Kevin Diggs Mr. Douglas Ray Ms. Becki Amendt	18907	Mr. William Miller
18850	Mr. Dennis Mangsen	18909	Dr. Rosa Heckle Mr. Paul Matthews
18853	Ms. Vanessa Chioffi Mr. Garrett Wampole Mr. Tom Wheeler	18910	Dr. George Ball
18855	Dr. Mark Blackburn Ms. Megan Clifford Ms. Philomena Zimmerman	18913	Dr. Ken Nidiffer Dr. John Snoderly Ms. Mimi Heisey
18856	Mr. Sylvester Ashok Mr. Daniel Schrage Mr. Apinut Sirirojvisuth Mr. Andy Smith	18920	Mr. Raymond Shanahan Ms. Kristen Baldwin
		18922	Dr. Judith Dahmann Mr. Christopher Tacaks
		18923	Mrs. Lydia Humpries Mrs. Stephanie Shankles

18924	Dr. Tyesia Alexander Dr. Tracee Gilbert Mr. Frank Salvatore Mr. Allen Wong	18975	Mr. Mitul Patel Mr. Sean Pham
18926	Dr. Garry Coleman Mr. Dana Briscoe Mr. Nicholas Dunford SSgt Yaudet Mejia, USMC	18977	Mr. Lou Husser
18927	Dr. Tyesia Alexander Dr. Tracee Gilbert Mr. Frank Salvatore Mr. Allen Wong	18980	Dr. Lynn Ewart
18928	Ms. Vanessa Chioffi Ms. Monique Ofori	18985	Mr. Barry Papke
18929	Mr. Don Davidson Mr. Kevin Dulany	18986	Mr. Barry Papke
18935	Mr. Steven Monzon Mr. Damien Boudreau Mr. Peter Castella Mr. Matt Pittard	18987	Dr. Saulius Pavalkis
18936	Mr. Barry Wilson	18989	Mr. Daniel Hetteema Mr. Robert Sperlazza
18937	Mr. Matthew Hause	18990	Mr. F. David Ayhan
18941	Mr. Steven Harris	18991	Mr. Michael Campbell
18944	Ms. Ariana Kiken	18993	Mr. Andrew Tesnow
18948	Mr. Burhman Gates Mr. Brent Towne Mr. Christopher Cummins	18995	Mr. Michael Campbell Mr. Andrew Tesnow
18954	Dr. Kenneth Nidiffer Mr. Paul Croll Mr. Chris Inacio	18996	Mr. Christopher Ritter
18958	Mr. Michael Kerstetter	18997	Mr. Don Fullmer Mr. David Slusser Mr. Robert Stone Mr. George Terrell
18959	Dr. Jerrell Stracener	19000	Mr. Michael Bruckner Mr. Drew Rak
18963	Col Charles Ormsby, USAF Mr. Jack Blackhurst Mr. Chris Ristich	19001	Mr. Deric Merino
18965	Mr. Brian Pepper	19002	Ms. Lois Hollan
18967	Dr. Maia Cook Dr. Jeffrey Morrison	19014	Mr. Adam Bernstein
18970	Mr. Matthew Ichniowski	19015	Mr. David Quinn Mr. Charles Williams
18972	Dr. Jerry Couretas Mr. John Daly	19016	Mr. Craig Covak
18973	Dr. Simon Goerger	19017	Mr. Michael Coughenour
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		19053	Mr. D. Goodwin Mr. S. Norman Mr. T. Suloway

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