CSER 2019
conference on systems engineering research

17th Annual CONFERENCE on SYSTEMS ENGINEERING RESEARCH

APRIL 3-4, 2019

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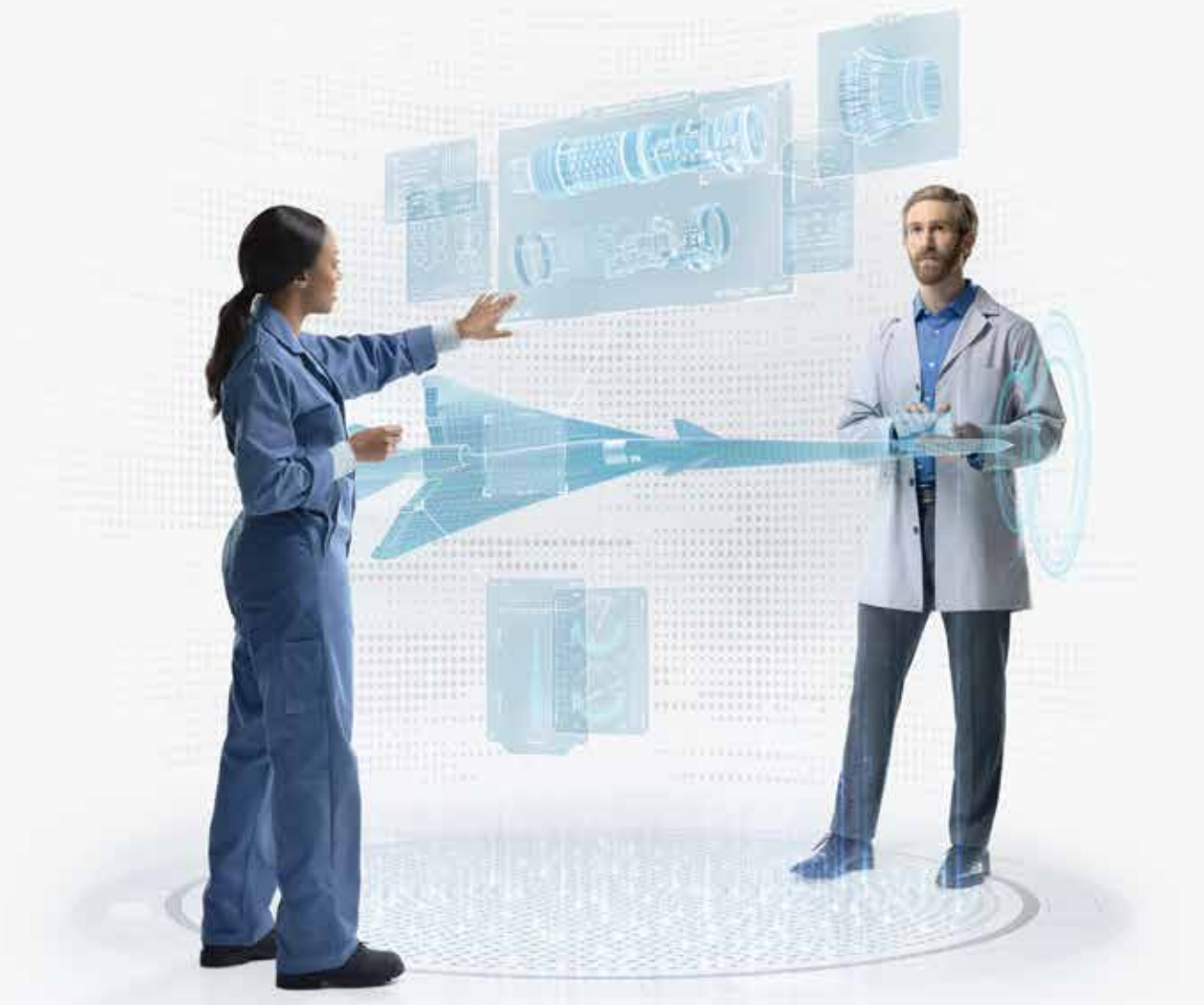

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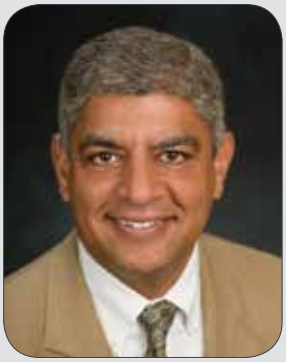

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CSER 2019 SCHEDULE

DAY 1
WEDNESDAY, APRIL 3, 2019

TIME	ACTIVITY	LOCATION
8:00 - 8:30 AM	**BREAKFAST • CONFERENCE GREETING • INTRODUCTIONS**	Ballroom
8:30 - 9:30 AM	**KEYNOTE** **Mr. James Faist,** *Director of Defense Research and Engineering for Advanced Capabilities* TOPIC: Advanced Capabilities	Ballroom
9:30 - 10:30 AM	**PAPER SESSIONS** *(See page 5 for detailed information)*	
10:30 - 11:00 AM	**BREAK**	Ballroom
11:00 - 12:00 NOON	**FEATURED SPEAKER:** **Dr. Wouter Leibbrandt**, *TNO* TOPIC: Trends in High-tech Systems: Digital Twins and Intelligence **PAPER SESSIONS** *(See page 5 for detailed information)*	East Room
12:00 – 1:00 PM	**LUNCH**	Ballroom
1:00 - 2:00 PM	**KEYNOTE** **Dr. Jeffery Wilcox,** *Vice President, Digital Transformation, Lockheed Martin* TOPIC: Engineering in the Digital Age	Ballroom
2:00 - 3:00 PM	**FEATURED SPEAKER:** **Dr. William Rouse**, *Stevens Institute of Technology* TOPIC: Systems Engineering of the US Population Health Ecosystem **PAPER SESSIONS** *(See page 6 for detailed information)*	East Room
3:00 - 3:30 PM	**BREAK**	Ballroom
3:30 - 4:30 PM	**PANEL ON SYSTEMS ENGINEERING RESEARCH** *(Former NSF Program Directors)* • **Dr. Christina Bloebaum** – *Dean, College of Aeronautics and Engineering – Kent State University* • **Dr. Paul Collopy** – *Professor – University of Alabama in Huntsville* • **Dr. Chris Paredis** – *BMW Endowed Chair, Systems Integration – Clemson University* • **Dr. Rich Malak** – *Associate Professor – Texas A&M*	Ballroom
5:00 - 7:00 PM	**RECEPTION**	1st Amendment

DAY 2
THURSDAY, APRIL 4, 2019

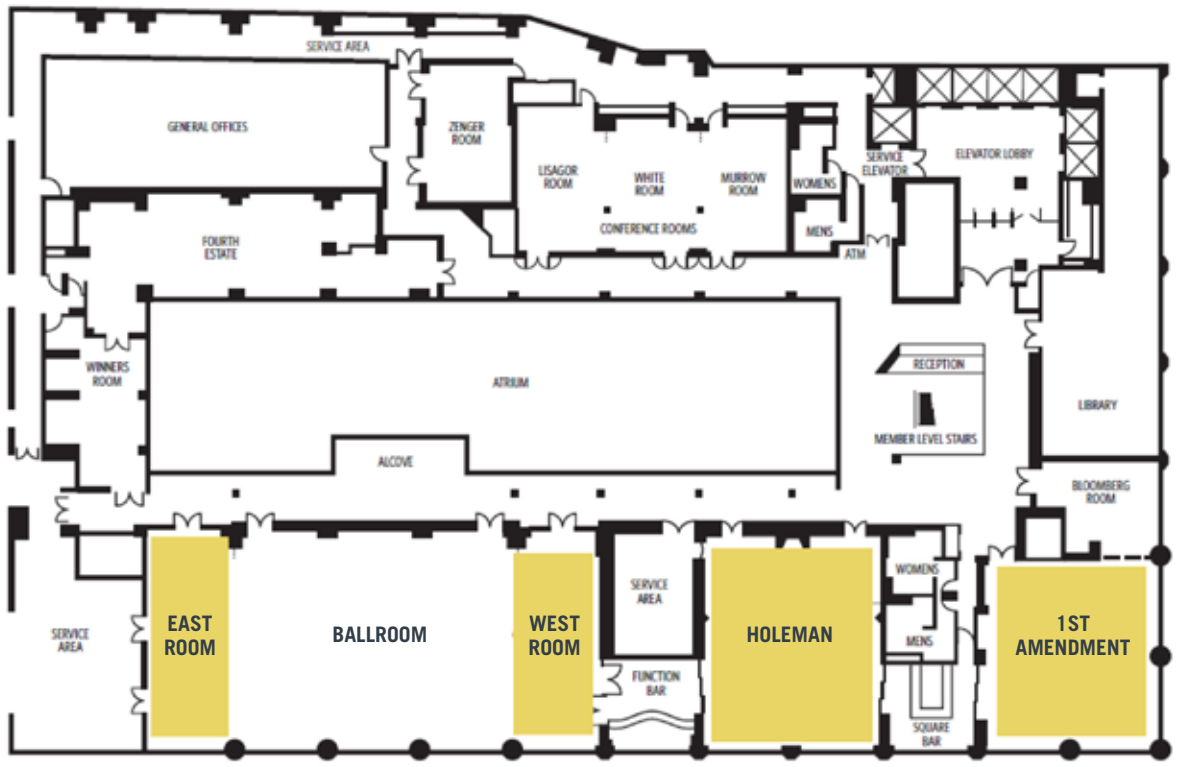
TIME	ACTIVITY	LOCATION
8:00 - 8:30 AM	**BREAKFAST**	Ballroom
8:30 - 9:30 AM	**KEYNOTE** **Ms. Kristen Baldwin,** *Deputy Director, Strategic Technology Protection and Exploitation, Office of the Secretary of Defense* TOPIC: Strategic Technology Protection and Exploitation	Ballroom
9:30 - 10:30 AM	**FEATURED SPEAKER:** **Joseph C. Kloiber,** *Northrop Grumman Mission Systems* TOPIC: Full-Stack MS&A - Fast, Cheap, & Right	1st Amendment
	PAPER SESSIONS *(See page 7 for detailed information)*	
10:30 - 11:00 AM	**BREAK**	Ballroom
11:00 - 12:00 NOON	**FEATURED SPEAKER:** **Dr. Martin Törngren**, *(KTH)* TOPIC: Opportunities, Risks and Engineering Methodologies Considering a New Era of Autonomous, "Smart" and Interacting Cyber-physical Systems of Systems	East Room
	PAPER SESSIONS *(See page 7 for detailed information)*	
12:00 – 1:00 PM	**LUNCH**	Ballroom
1:00 - 2:00 PM	**KEYNOTE** **CAPT. (ret) William Shepherd,** *Captain, US Navy, NASA Astronaut, Science Advisor, US Special Operations Command* TOPIC: Engineering Cultures and the International Space Station	Ballroom
2:00 - 3:30 PM	**FEATURED SPEAKER:** **Dr. T. Charles Clancy**, *Virginia Tech* TOPIC: Advances in Artificial Intelligence and the Impact on T&E	East Room
	WORKSHOP **Call of Workshop Duty: Advancing Games Research**, Part 1	West Room
	WORKSHOP **Text Processing**, Part 1	1st Amendment
	PAPER SESSIONS *(See page 8 for detailed information)*	
3:00 - 3:30 PM	**BREAK**	Ballroom
3:30 - 4:30 PM	**WORKSHOP** **Call of Workshop Duty: Advancing Games Research**, Part 2	West Room
	WORKSHOP **Text Processing**, Part 2	1st Amendment
	PAPER SESSIONS *(See page 8 for detailed information)*	

PAPER SESSIONS
FEATURED SPEAKERS

DAY 1 WEDNESDAY, APRIL 3

	HOLEMAN	WEST	EAST
9:30 - 10:30 AM	**PAPER SESSION 1** **AUTONOMOUS SYSTEMS AND AI/ML** *A Retrospective Analysis of System Engineering Data Collection Metrics for a 3D Printed UAS Design* - **Simon Miller, Michael Yukish** *Engineering Resilience into Multi-UAV Teams: Methods, Experiments, Findings* - **Edwin Ordoukhanian**	**PAPER SESSION 2** **SYSTEMS ENGINEERING EFFECTIVENESS - TOOLS AND TECHNIQUES** *Does every formal peer review really need to take place? An industrial case study* - **Keith Roseberry, Mary Ann Sheppard, Andy Wallis, Ye Yang** *COSYSMO 3.0: An Extended, Unified Cost Estimating Model for Systems Engineering* - **James Alstad** *CubeSats in University: Using Systems Engineering Tools to Improve Reviews and Knowledge Management* - **Evelyn Honoré-Livermore**	**PAPER SESSION 3** **AGILE SYSTEMS ENGINEERING** *Improving Insider Threat Detection Through Multi-Modeling/Data Fusion* - **David Brown** *Towards a Taxonomy of Technical Debts for COTS-Intensive Cyber Physical Systems* - **Ye Yang** *Review of Research into the Nature of Engineering and Development Rework: Need for a Systems Engineering Framework for Enabling Rapid Prototyping and Rapid Fielding* - **Shawn Dullen**
11:00 - 12:00 PM	**PAPER SESSION 4** **AUTONOMOUS SYSTEMS AND AI/ML** *Assessing Software Understandability in Systems by Leveraging Fuzzy Method and Linguistic Analysis* - **Michael Shoga** *Artificial Intelligence Analytics with Multi-Attribute Tradespace Exploration and Set-Based Design* - **Adam M. Ross** *System Architecting Approach for Designing Deep Learning Models* - **Cihan Dagli**	**PAPER SESSION 5** **SYSTEMS ENGINEERING EFFECTIVENESS - TOOLS AND TECHNIQUES** *Educating I-shaped Computer Science Students to Become T-shaped System Engineers* - **Barry Boehm** *The Influence of Organization Alignment on the Effectiveness of Systems Engineers* - **Pamela Burke** *The Human Activity System: Emergence from Purpose, Boundaries, Relationships, and Context* - **Javier Calvo-Amodio, David Rousseau**	**FEATURED SPEAKER** **DR. WOUTER LEIBBRANDT,** ***TNO*** **TOPIC:** *Trends in High-Tech Systems: Digital Twins and Intelligence*

	HOLEMAN	WEST	EAST
2:00 - 3:00 PM	PAPER SESSION 6 **THEORETICAL INSIGHTS**	PAPER SESSION 7 **SYSTEMS OF SYSTEMS**	**FEATURED SPEAKER** **DR. WILLIAM B. ROUSE,** ***STEVENS INSTITUTE OF TECHNOLOGY*** **TOPIC:** *Systems Engineering of the US Population Health Ecosystem*
	Ilities Semantic Basis: Research Progress and Future Directions - **Adam M. Ross**	*Game Theory Applications in Systems-of-Systems Engineering: A Literature Review and Synthesis* - **Jakob Axelsson**	
	A Literature Review on Obsolescence Management in COTS-Centric Cyber Physical Systems - **Ye Yang**	*Use of the Belonging Metric to Inform Architectural Decisions in an Air Defense Scenario* - **W. Clifton Baldwin, Wilson Felder**	
	Identify Competition in Non-Explicit Competition Networks with A case Study in Politics - **Jose Ramirez-Marquez**	*Stag Hunt as an Analogy for Systems-of-Systems Engineering* - **Paul Grogan**	



THE NATIONAL PRESS CLUB - FLOOR PLAN

PAPER SESSIONS
FEATURED SPEAKERS
WORKSHOPS

DAY 2 THURSDAY, APRIL 4

9:30 - 10:30 AM

HOLEMAN	WEST	EAST	AMENDMENT
PAPER SESSION 8	PAPER SESSION 9	PAPER SESSION 10	FEATURED SPEAKER
MODEL BASED ENGINEERING	SYSTEMS ENGINEERING DECISION MAKING	RESILIENCE	**MR. JOSEPH C. KLOIBER,** ***NORTHROP GRUMMAN MISSION SYSTEMS***
Evaluating a Set-Based Design Tradespace Exploration Process - **Gregory S. Parnell**	*A Knowledge Domain Structure to Enable System Wide Reasoning and Decision Making* - **Tjerk Bijlsma**	*Broad Utility: Architecting Flexible and Robust Systems for a Complex Operational Environment* - **Arthur Middlebrooks**	**TOPIC:** *Full-Stack MS&A - Fast, Cheap, & Right*
Decision-based Behavior Modeling of Software-intensive Systems - **James (Jim) Kirby**	*Supporting Decision Makers with Use Cases; Case Study Results* - **Mike Russell**	*Combining Formal and Probabilistic Modeling in Resilient Systems Design* - **Azad Madni**	
Model-based systems engineering: application and lessons from a technology maturation project - **Bjorn Cole**	*Characterizing Systems Architectures Using Network Data* - **Zhenglin Wei**	*A Method to Choose Between Automation and Human Operators for Recovery Actions During a Cyber Attack* - **Douglas L Van Bossuyt**	

11:00 - 12:00 PM

HOLEMAN	WEST	EAST	AMENDMENT
PAPER SESSION 11	PAPER SESSION 12	FEATURED SPEAKER	PAPER SESSION 13
MODEL BASED ENGINEERING	SYSTEMS ENGINEERING DECISION MAKING	**PROF. MARTIN TÖRNGREN,** ***KTH***	RESILIENCE
Complex Systems Analysis of Hybrid Warfare - **James Fairbanks**	*Development of a Weighting Strategy for a Manufacturability Assessment* - **Emily Wall**	**TOPIC:** *Opportunities, Risks and Engineering Methodologies Considering a New Era of Autonomous, "Smart" and Interacting Cyber-Physical Systems of Systems*	*Design and Implementation of a Comprehensive Insider Threat Ontology* - **James Lee**
A Systems Thinking Perspective of Medication Adherence for Patients with Diabetes Mellitus - **Susan Ferreira**	*Considering Obsolescence in System Design* - **Joshua Brock**		*Failure Propagation Modeling in FMEAs for Reliability, Safety, and Cybersecurity using SysML* - **Myron Hecht**
Complexity Assessment Using SysML Models - **Victor Lopez**	*Application of Epoch-Era Analysis to the Selection of a Distributed Power Generation System* - **Adam Ross**		

	HOLEMAN	WEST	EAST	AMENDMENT
2:00 - 3:00 PM	PAPER SESSION 14 **MODEL BASED ENGINEERING** *Model Curation: Requisite Leadership and Practice in Digital Engineering Enterprises* - **Donna H. Rhodes** *Can Wymore's Mathematical Framework Underpin SysML? An Investigation of State Machines* - **Paul Wach** *Collaborative Creation of Engineering Artifacts by Geographically-Distributed Teams* - **Azad Madni**	WORKSHOP **DR. BRYAN MESMER,** *UNIVERSITY OF ALABAMA IN HUNTSVILLE* **DR. A. EMRAH BAYRAK,** *STEVENS INSTITUTE OF TECHNOLOGY* **CALL OF WORKSHOP DUTY: ADVANCING GAMES RESEARCH (PART 1)** *(See page 13 for more information)*	FEATURED SPEAKER **DR. T. CHARLES CLANCY,** ***VIRGINIA TECH*** **TOPIC:** *Advances in Artificial Intelligence and the Impact on T&E*	WORKSHOP **DR. CARLO LIPIZZI,** *STEVENS INSTITUTE OF TECHNOLOGY* **TEXT PROCESSING (PART 1)** *(See page 13 for more information)*

	HOLEMAN	WEST	AMENDMENT
3:30 - 4:30 PM	PAPER SESSION 15 **MODEL BASED ENGINEERING** *The Future Exchange of Digital Engineering Data and Models: an Enterprise Systems Analysis* - **Thomas A McDermott Jr.** *The Ontology of Systems Engineering: Towards a Computational Digital Engineering Semantic Framework* - **William Mandrick** *Collaborating with OpenMBEE as an Authoritative Source of Truth Environment* - **Benjamin Kruse**	WORKSHOP **DR. BRYAN MESMER,** *UNIVERSITY OF ALABAMA IN HUNTSVILLE* **DR. A. EMRAH BAYRAK,** *STEVENS INSTITUTE OF TECHNOLOGY* **CALL OF WORKSHOP DUTY: ADVANCING GAMES RESEARCH (PART 2)** *(See page 13 for more information)*	WORKSHOP **DR. CARLO LIPIZZI,** *STEVENS INSTITUTE OF TECHNOLOGY* **TEXT PROCESSING (PART 2)** *(See page 13 for more information)*

KEYNOTE SPEAKERS

MR. JAMES A. FAIST

Director of Defense Research and Engineering for Advanced Capabilities Office of the Secretary of Defense

Wednesday, April 3

8:30 AM

Location: Ballroom

ADVANCED CAPABILITIES

BIOGRAPHY: Mr. James "Jim" A. Faist is the Director of Defense Research and Engineering for Advanced Capabilities, reporting directly to the Under Secretary of Defense Research and Engineering within the Office of the Secretary of Defense. Jim directs an organization whose mission is to recognize, explore, and force the development and integration of new technology to maintain U.S. technological superiority. He is responsible for establishing a Department of Defense joint mission engineering capability, oversight of developmental testing and test facilities as well as demonstration and validation of technology prototype and rapid fielding activities. Jim serves as the mission area advisor for warfighter portfolios in hypersonics, space, autonomy, and networked command, control, and communication architectures. He also provides independent technical risk assessments of major acquisition programs.

Jim has an extensive career in industry and government in national defense, including progressive responsibilities and experience in military operations, advanced technologies, system development, engineering leadership, and program management. He is a recognized expert in advanced sensors, weapons, and electronic warfare for space, air, and ground capabilities.

Faist was a chief engineer for the Northrop Grumman and Harris Corporations. He held senior executive positions at Schafer Corporation, Trident Systems Incorporated, and System Planning Corporation. Prior to his work in the industry, he served in the United States Air Force as a Weapons Systems Officer and an Electronic Warfare Officer in the F-4D/E Phantom II fighter aircraft.

Jim earned a Bachelor of Science in Electrical Engineering from Virginia Military Institute in Lexington, Virginia, and a Master of Science in Electrical Engineering from Cornell University in Ithaca, New York, with emphasis on microwave and power systems. During his career he received numerous performance awards and honors from the U.S. Air Force, academia, and industry.

DR. JEFFREY J. WILCOX

Vice President, Digital Transformation Lockheed Martin

Wednesday, April 3

1:00 PM

Location: Ballroom

ENGINEERING IN THE DIGITAL AGE

BIOGRAPHY: Jeffrey (Jeff) Wilcox is Vice President for Digital Transformation at Lockheed Martin. He oversees the Digital Transformation Office (DTO) and is responsible for the design, development, and implementation of Lockheed Martin's operations strategy. This office is chartered with leveraging emerging digital technologies to transform systems design, production, and sustainment and ensuring the workforce and systems are in place to enable successful transformation.

Previously, Mr. Wilcox served as Vice President for Engineering and Program Operations for Lockheed Martin. In this capacity, he was responsible for the effectiveness and efficiency of the engineering, program management, production operations and sustainment functions across the enterprise.

Prior to that role, Mr. Wilcox served as Vice President for Corporate Engineering where he was responsible for the engineering enterprise, ensuring that the right people, processes, tools, and technologies were in place to successfully deliver innovative engineering solutions to customers' most complex challenges. Prior to joining Lockheed Martin, Mr. Wilcox served for 17 years with Science Applications International Corporation (SAIC).

Mr. Wilcox earned his Bachelor of Science degree in biomedical engineering from Case Western Reserve University and his Master of Science degree in electrical engineering from Drexel University. He holds an honorary doctorate of engineering from Stevens Institute of Technology.

He is chairman of the NIST Manufacturing Extension Partnership National Advisory Board and serves on the Advanced Robotics for Manufacturing Board as well as on multiple industry and university advisory boards. Mr. Wilcox is an adjunct professor in the Department of Biochemistry and Molecular & Cellular Biology at Georgetown University, an Associate Fellow of the American Institute of Aeronautics and Astronautics, and a senior member of the Institute of Electrical and Electronics Engineers.

MS. KRISTEN BALDWIN

Deputy Director, Strategic Technology Protection and Exploitation Office of the Secretary of Defense

Thursday, April 4

8:30 AM

Location: Ballroom

STRATEGIC TECHNOLOGY PROTECTION AND EXPLOITATION

BIOGRAPHY: Ms. Kristen J. Baldwin was appointed the Deputy Director, Strategic Technology Protection and Exploitation in September 2018. In this role, Ms. Baldwin serves the Under Secretary of Defense for Research and Engineering as the Department of Defense (DoD) lead for maintaining technology advantage by mitigating exploitation and vulnerabilities of critical missions, programs, technologies, and the industrial base. Ms. Baldwin oversees program protection policy and related hardware and software assurance, anti-tamper, and critical technical information protection practices. She oversees the DoD National Manufacturing Institutes and the Manufacturing Technology program. Ms. Baldwin leads the DoD strategy for Trusted and Assured Systems, Microelectronics Innovation for National Security, and the Joint Federated Assurance Center.

Before this appointment, Ms. Baldwin served as the Acting Deputy Assistant Secretary of Defense for Systems Engineering (DASD(SE)) and Principal Deputy, Systems Engineering, overseeing engineering policy, practice, and the DoD engineering workforce. She led digital engineering, system security engineering, and system of systems engineering initiatives and was a founder of the Systems Engineering Research Center, a University Affiliated Research Center.

A member of the Senior Executive Service since 2007, Ms. Baldwin served as Deputy Director, Software Engineering and System Assurance. Before joining the Office of the Secretary of Defense, Ms. Baldwin served as a science and technology advisor in the Army's Office of the Deputy Chief of Staff for Operations and Plans. She began her career at the U.S. Army's Armament Research, Development, and Engineering Center, Picatinny Arsenal.

Ms. Baldwin is a recipient of the Meritorious Presidential Rank award in recognition of exemplary service, and the National Defense Industrial Association Lt Gen Thomas R. Ferguson, Jr., Systems Engineering Excellence Award. She holds a Bachelor of Science in Mechanical Engineering from Virginia Tech and a Master of Systems Management from the Florida Institute of Technology.

CAPT. (RET.) WILLIAM SHEPHERD

Captain, US Navy, NASA Astronaut, Science Advisor, US Special Operations Command

Thursday, April 4

1:00 PM

Location: Ballroom

ENGINEERING CULTURES AND THE INTERNATIONAL SPACE STATION

BIOGRAPHY: Capt Shepherd is a retired Navy SEAL and United States Astronaut. He was a SEAL platoon commander and operations officer. Shepherd was selected for the NASA astronaut corps in 1984. He completed three flights as a mission specialist on STS-27 Atlantis, STS-41 Discovery, and STS-52 Columbia, and was the commander of the Expedition-1 crew on the International Space Station. In1993, Capt Shepherd was assigned as the Program Manager for the International Space Station. He retired from active duty in 2002, and served as USSOCOM from 2008 to 2011 as Science Advisory, where he managed the Special Operations Forces' science and technology portfolio. Capt Shepherd's awards include the National Intelligence Metal, NASA's "Steve Thorne" Airmanship Award, the komarov Diploma, The Spirit of St. Louis Medal, the Gagarin Gold Medal, the Robert H. Goddard Trophy, and the Congressional Space medal of Honor. Capt Shepherd was recently designed "Honorary naval Aviator Number30" by the Chief of Naval Air Warfare.

FEATURED SPEAKERS

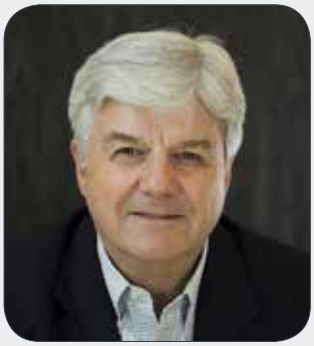
DR. WOUTER LEIBBRANDT
TNO

Wednesday, April 3
11:00 AM
Location: East Room

TRENDS IN HIGH-TECH SYSTEMS: DIGITAL TWINS AND INTELLIGENCE

BIOGRAPHY: Wouter Leibbrandt is Science and Operations Director of ESI, an industry and academia sponsored research center hosted by TNO. ESI focusses on the development of new methods and techniques for design and engineering of increasingly complex high-tech (embedded) systems. It does so in strong partnership and close collaboration with leading high-tech companies such as ASML, Philips, Thales, NXP, Océ, Thermo-Fisher and DAF as well as with leading academic groups in the Netherlands and across Europe.

Until early 2016 Wouter was with NXP Semiconductors for 10 years, where he managed the Advanced Applications Lab, investigating new application concepts around future advanced silicon products, driving secure connections for a smarter world. The recurring theme here is that everything is getting connected with everything (IoT). Before joining NXP, he was with Philips Research labs for 14 years, managing a variety of projects and departments. From 2004 to 2006 he lived and worked in China, founding and managing part of the Philips Research labs in Shanghai. He serves in advisory roles to several academic departments and curricula and is on the steering board of the European ARTEMIS Industry Association. Wouter holds a PhD in physics from Utrecht University.



DR. WILLIAM ROUSE
Stevens Institute of Technology

Wednesday, April 3
2:00 PM
Location: East Room

SYSTEMS ENGINEERING OF THE US POPULATION HEALTH ECOSYSTEM

BIOGRAPHY: William B. Rouse is Professor within the School of Systems and Enterprises at Stevens Institute of Technology and Professor Emeritus, and former Chair, of the School of Industrial and Systems Engineering at the Georgia Institute of Technology. His research focuses on mathematical and computational modeling for policy design and analysis in complex public-private systems. Recent books include Computing Possible Futures, Universities as Complex Enterprises, Modeling and Visualization of Complex Systems and Enterprises, and Understanding and Managing the Complexity of Healthcare. He is a member of the National Academy of Engineering and fellow of IEEE, INCOSE, INFORMS, and HFES. Rouse received his B.S. from the University of Rhode Island, and his S.M. and Ph.D. from MIT.

MR. JOSEPH C. KLOIBER
Northrop Grumman Mission Systems

Thursday, April 4
9:30 AM
Location: 1st Amendment

FULL-STACK MS&A - FAST, CHEAP, & RIGHT

BIOGRAPHY: Joseph "Joe" Kloiber is the Director, Systems Engineering for Modeling, Simulation, & Analysis (MS&A) for Northrop Grumman Mission Systems, Emerging Capabilities Development (ECD), leading Full-Stack MS&A activities for the sector. In this systems engineering role, Mr. Kloiber is responsible for providing guidance and establishing processes for connecting the resources and data products from component level technologies to mission applications across the business. Over the course of his nearly 20 year career, he has participated in several MS&A activities across the electro-magnetic spectrum supporting the United States Navy, United States Air Force, the National Reconnaissance Office (NRO), and National Geospatial-Intelligence Agency (NGA). These activities include service as the MS&A Integrated Product Team Lead for several advance weapons systems including AMRAAM, the Advanced Medium Range Air-to-air Missile and Technology Fellow with NRO. He received a BS from Niagara University and an MS from The Rochester Institute of Technology.

PROF. MARTIN TÖRNGREN

KTH Royal Institute of Technology (Stockholm, Sweden)

Thursday, April 4
11:00 AM
Location: East Room

OPPORTUNITIES, RISKS AND ENGINEERING METHODOLOGIES CONSIDERING A NEW ERA OF AUTONOMOUS, "SMART" AND INTERACTING CYBER-PHYSICAL SYSTEMS OF SYSTEMS

BIOGRAPHY: Martin Törngren is a Professor in Embedded Control Systems at the Mechatronics division of the KTH Department of Machine Design since 2002. He has particular interest in Cyber-Physical Systems, architectural design, system safety, model based engineering, and co-design of control applications and embedded systems. He has authored/co-authored more than 100 peer reviewed publications, and also been in charge of developing and leading both graduate and continued education courses, as well as the development of new/renewed master programs. He spent time as a post-doc at the EU-JRC, did a 10 month sabbatical 2011/12 at UC Berkeley, a 2 month sabbatical in the spring 2018 at Stevens Institute of Technology (Hoboken, New Jersey) - followed by a 2 month sabbatical again at UC Berkeley in the fall of 2018. In 1996 he co-founded the company Fengco Real-time Control AB, specializing in advanced tools for developers of embedded control systems and related consultancy. In 1994 he received the SAAB-Scania award for qualified contributions in distributed control systems, and in 2004 the ITEA achievement award 2004 for contributions in the EAST-EEA project. He served as the technical coordinator of the international iFEST ARTEMIS project with 21 partners (2010-2013).

Networking and multidisciplinary research have been characteristic throughout his career. From 1999-2004 he served as the Chairman of the Swedish real-time systems association, and he has represented KTH as a core partner in the EU networks of excellence in Embedded systems design, Artist2 and ArtistDesign, and in the Artemis industrial association. He is moreover the principal initiator and Director of the Innovative Centre for Embedded Systems (www.ices.kth.se), launched in 2008.

DR. T. CHARLES CLANCY

Virginia Tech

Thursday, April 4
2:00 PM
Location: East Room

ADVANCES IN ARTIFICIAL INTELLIGENCE AND THE IMPACT ON T&E

BIOGRAPHY: Charles Clancy is the Bradley Professor of Electrical and Computer Engineering at Virginia Tech where he serves as the Executive Director of the Hume Center for National Security and Technology. Clancy leads a range of strategic programs at Virginia Tech related to security, including the Commonwealth Cyber Initiative. Prior to joining VT in 2010, Clancy was an engineering leader in the National Security Agency, leading research programs in digital communications and signal processing. He received his PhD from the University of Maryland, MS from University of Illinois, and BS from the Rose-Hulman Institute of Technology. He is co-author to over 200 peer-reviewed academic publications, six books, over twenty patents, and co-founder to five venture-backed startup companies.

WORKSHOPS | DAY 2 THURSDAY, APRIL 4

CALL OF WORKSHOP DUTY: ADVANCING GAMES RESEARCH

LOCATION: WEST ROOM

PART 1 2:00PM

PART 2 3:30PM

ABSTRACT: *Games offer platforms to attract a large population to engage in training and decision-making activities, providing a valuable resource for systems engineering research. This workshop calls CSER 2019 participants to duty to define key future directions in games research. The goal of the workshop is to identify unique topics in games research that can advance systems engineering and attract funding from industry and government agencies. The workshop will foster discussions related to the use of games in training and understanding individual and collective behaviors for systems engineering applications. The workshop will also feature game elements to improve participant engagement.*

Dr. Bryan Mesmer is an Assistant Professor in the Department of Industrial and Systems Engineering and Engineering Management at the University of Alabama in Huntsville. His work has focused on eliciting, representing, and analyzing preferences present in systems engineering. His gaming research has investigated the benefits that gaming and systems engineering gain from adopting techniques from the other.

Dr. A. Emrah Bayrak is an Assistant Professor in the School of Systems and Enterprises at Stevens Institute of Technology. His research focuses on the design and optimization of smart and interconnected engineering systems. His recent work on gaming has studied crowdsourcing and computational methods for the solution of dynamic design problems and modeling decision-making in human-artificial intelligence teams in complex dynamic environments.

WORKSHOP: TEXT PROCESSING

LOCATION: 1ST AMENDMENT

PART 1 2:00PM

PART 2 3:30PM

ABSTRACT: *This workshop is an introduction to Natural Language Processing. We will cover the basic concepts behind processing text, the different approaches to extract insights, how to leverage on Machine Learning. Because there is no single solution for processing text, we will analyze what are the most proper ways to approach the different categories of text and needs. We will focus on a context-driven approach to text processing, that is the emerging way to do it, because of the continuous evolution of the language. The workshop has a classical lecture format plus hands-on sections, using Open Source tools both data science-generic, Knime, and text specific, Wordij.*

Dr. Carlo Lipizzi is a Machine Learning and Data Science Professional serving Academia and Private sector.

At the School of Systems and Enterprises of the Stevens Institute of Technology he is an Industry Professor, the program lead of the Engineering Management and Systems Analytics graduate programs and manages a multimillion dollar research project on a convergent use of Natural Language Processing, Machine Learning, Data Mining and Data Visualization. Carlo has a Ph.D. in Engineering Management from Stevens, an Executive Management Degree from IMD, Lousanne, CH, and a Master equivalent in mathematics ("Laurea in Scienze Matematiche") from the University of Rome, Italy.

NOTES

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