Verification and Validation Summit 2018

September 19-20, 2018

Speaker Biographies

Mark Flanigan is the National Air Traffic Services (NATS) Chief Innovation Officer, accountable for all research and innovation activities from SESAR through to new, commercial product development. With 25 years' experience in ATM with NATS in the UK and overseas, Mark's roles have included Swanwick Operations and Major Programs Delivery to Centers and Airports, like Heathrow. In addition Mark was the creator of the "SPACE": innovation hubs for NATS, the original "24" series of airspace visualizations, and is responsible for shifting NATS to be a Product company, as well as a Service Provider. At present, Mark is working with Cities and Airports on connected mobility and total airport management, and also runs an independent business consultancy.

Daniel Fogarty is a Technical Fellow and development assurance focal for all Boeing Commercial programs. He has worked on multiple product development programs and is a designated expert in airplane level safety analysis. He conducts intra-system, inter-system, and airplane level analyses, including cascading failure effects, flight deck indications, pilot effects and required crew actions. Daniel has developed and implemented model based systems engineering and model based safety analysis processes and tools on different programs. He is a technical resource for requirements analysis, functional design, interface control, systems architecture analysis, and systems integration, including certification and regulatory issues.

He is a member of the SAE Airplane Safety Assessment Technical Committee, which prepares industry standards for the safety assessment of airplanes and their related systems. Prior to joining Boeing, he supported the modernization contract for FAA air traffic control automation systems. Prior to that, he was a U.S. Air Force officer. Daniel graduated from the U.S. Air Force Academy with a Bachelor of Science in aeronautical engineering. He has a Master of Business Administration from the University of Alaska Anchorage.

John Frederick is a graduate from Drexel University (Philadelphia) with a BS in Computer Systems Management. Mr. Frederick has over 31 years of T&E experience with Federal Aviation Administration (FAA) systems. In the early part of his career, as both a support contractor and FAA employee, Mr. Frederick has worked as a National Airspace System (NAS) programmer, test engineer, simulations developer, and Operational Test and Evaluation (OT&E) lead on Air Traffic Control automation systems. Mr. Frederick has supported or led T&E efforts on over 12 major FAA automation programs. A large portion of his career in the FAA was dedicated to working as an FAA Test Director and Test Program Manager on major FAA acquisitions of En Route Air Traffic Control (ATC) automation systems. As Chief Test Engineer and Subject Matter Expert (SME), Mr. Frederick has consulted with the Department of Defense (DOD) and international agencies on Test and Evaluation (T&E), and provided T&E guidance and consultation to many other FAA T&E programs. In the past 12 years, he has

Note: This document is a compilation of biographies received from the Summit speakers. Modifications to the biographies were intentionally kept to a minimum.
Biographies are in Alphabetical Order.

served as the Test Standards Board Chairman to establish test standards and provide quality T&E oversight for the FAA. Mr. Frederick is currently leading the way for quality verification and validation methods in the FAA as the Manager for the Verification and Validation Strategies and Practices Branch at the FAA William J. Hughes Technical Center. He is also the International Test and Evaluation Association (ITEA) South Jersey Chapter President and serves as the T&E representative for the FAA William J. Hughes Technical Center on the FAA Acquisition System Advisory Group.

Maureen Keegan is the manager of the Technical Analysis and Operational Requirements Group (AJV-73) of the ATO's Mission Support Services. Ms. Keegan is responsible for managing the development and validation of operational concepts and requirements, identification of shortfalls, prioritization of objectives, and cross-ATO validation of operational initiatives.

Previously, Ms. Keegan served as the Integration Manager of the Joint Planning and Development Office (JPDO) for over six years, where she coordinated all interagency initiatives between the NextGen Institute and the JPDO Divisions. Prior to that role, Ms. Keegan participated in a number of acquisitions and program management of systems for the NAS. Her area of expertise covers all phases of development and implementation for en route, terminal, and flight service systems. Prior to joining the FAA, Ms. Keegan spent 10 years specializing in Independent Verification and Validation (IV&V) and systems engineering of real-time complex systems supporting the Air Force and the FAA.

Maureen Keegan has a bachelor's degree in Information and Systems Science from Stockton State College.

Ann McDonald is a technology policy analyst in the Aviation Systems Engineering Division at the US DOT / Volpe Center in Cambridge Massachusetts. Previously, she was a principal systems analyst and quality manager with Stinger Ghaffarian Technologies, Inc. She has been engaged with the FAA since 2010, initially conducting independent verification and validation of NextGen systems and then as a primary contributor to the requirements management (RqM) process improvement initiative within the PMO. She conducted initial RqM assessments across the PMO, assisted in the drafting of RqM governance, and co-developed an RqM education platform. Additionally, Ann engages with other FAA entities to ensure process alignment across lines of business.

Prior to working at the Volpe Center, Ann worked in the semiconductor equipment manufacturing industry as a systems test manager and software configuration manager.

Additionally, she has been an interoperability test manager in the security and building systems field, as well as a software quality manager and internal auditor in defense contracting.

Ann McDonald is an American Society for Quality (ASQ) Certified Software Quality Engineer (CSQE), a Certified ISO:9001-2000 Internal Auditor, and a Six Sigma Green Belt. She is a graduate of Emmanuel College with a BSBA in Business Management and obtained her MBA from Endicott College where her Master's Thesis was "Software Process Improvement: Factors for Success". Ann is also a Certified Scrum Master® (CSM) having been trained by Agile Manifesto architect and co-creator of Scrum, Dr. Jeff Sutherland. She continues to be an advocate for agile systems development and is committed to right-sized process.

Jennafer Miller is a Senior Consultant with Evans Incorporated in Falls Church, Virginia, and began her engagement with the FAA in 2015. She has over 25 years of combined experience as an administrator, program manager, and educator, in both traditional and experiential environments, and has a personal and professional commitment to working to effect positive change. She has facilitated and delivered workshops and trainings in a variety of settings, and she has been recognized for her incorporation of innovative methods and materials. She has also worked with organizations to address needs in order to grow their businesses and advance their missions.

In her work with the FAA, she has supported a variety of programs and initiatives in the FAA's Program Management Office (PMO) and Air Traffic Operations (ATO) Systems Operations Operational Readiness (AJR-X). She works with the PMO Requirements Management Board (PRMB) and has co-developed the Requirements Management (RqM) workshops and overviews. She also co-developed an ongoing series, TEAM Talks, which are given by PMO leaders, employees from other FAA organizations, and industry partners. She has also worked with FAA programs on drafting program governance documents, facilitation, and communications and outreach.

Jennafer has her BA from Duke University and her MA in Teaching English to Speakers of Other Languages (TESOL) from Columbia University Teachers College. She is also a Project Management Professional (PMP), a Life Member of the Bethesda-Chevy Chase Rescue Squad (BCCRS), where she was an active volunteer as an EMT-B and first-string emergency driver of ambulances and medic units, and a CPR and First Aid instructor with the National Safety Council.

William (Bill) D. Miller is executive principal analyst with Innovative Decisions, Inc., and adjunct professor at the School of Systems and Enterprises, Stevens Institute of Technology,

where he teaches courses in Fundamentals of Systems Engineering, System Architecture & Design, and Systems Integration. Bill is a member of IEEE and the past technical director of the International Council on Systems Engineering (INCOSE), a nonprofit membership organization that promotes international collaboration in systems practice, education, and research. He is editor-in-chief of INCOSE INSIGHT practitioners' magazine, and is leading the systems community initiative in the Future of Systems Engineering (FuSE). Bill has 40+ years of professional experience in systems engineering, systems integration, product management and program management for commercial telecommunications services and government systems. He has managed systems integration projects at Bell Labs and for a defense contractor. Bill is co-author of The Engineering Design of Systems: Models and Methods, 3rd edition, and Trade-off Analytics, both published in 2016. He presented the June 2013 INCOSE Webinar on "The Need for More Engagement of Systems Engineering with Integration & Test." Bill holds BS and MS degrees in electrical engineering from the Pennsylvania State University.

Major General Matt Molloy retired last month (July, 2018) after 31 years of active duty service in the USAF. He most recently was the Commander, Air Force Operational Test and Evaluation Center, Kirtland Air Force Base, New Mexico. General Molloy reported directly to the Air Force Chief of Staff regarding the test and evaluation of more than 98 major acquisition programs valued at more than $907 billion being assessed at 17 different locations. He directed the activities of more than 750 military, civilian, and contractor personnel. As a member of the test and evaluation community, General Molloy coordinated directly with the offices of the Secretary of Defense and Headquarters U.S. Air Force while executing realistic, objective and impartial operational testing and evaluation of Air Force, coalition and joint warfighting capabilities.

General Molloy was commissioned in 1987 as a distinguished graduate of the Reserve Officer Training Corps program at the University of Colorado, Boulder, where he received a Bachelor of Science degree in aerospace engineering. He completed Euro-NATO Joint Jet Pilot Training in 1989 as a distinguished graduate and is a command pilot with more than 3,200 flying hours in the T-37, T-38, F-15 and F-22. He has commanded at the flight, squadron, group and wing levels.

Maureen Molz joined the Federal Aviation Administration (FAA) in July 2009 and is currently the Manager of the Research and Development (R&D) Management Division at the William J. Hughes Technical Center. Maureen is responsible for FAA R&D Strategic Planning, Budget Formulation, Program Reporting, Technical Transfer, and the Centers of Excellence Grant Program.

The R&D Management Division publishes the National Aviation Research Plan (NARP), the Annual Review (AR) and the Annual Modal Research Plan (AMRP) for the FAA in addition to running the FAA Research Executive Board (REB) and the FAA's Research, Engineering and Development Advisory Council (REDAC) for the Research Director.

Maureen has 31 years of acquisition experience primarily gained while serving in the Army Acquisition Corps, holding positions in all phases of the Department of Defense (DoD) acquisition life cycle from research through fielding of systems with major emphasis on research and experimentation, she has managed three Defense Advanced Research Agency (DARPA) Programs during her tenure in the Department of the Army. Her last position with the Army was as the Product Manager for three acquisition programs of record. Some of her areas of technical expertise include: radar systems, command and control, power management, large scale modeling and simulation, Verification and Validation (V&V) and complex systems R&D. She has been Acquisition Level III certified in Program Management in both the FAA and DoD, as well as being DoD Level III certified in Systems, Planning, Research, Development and Engineering.

Maureen holds a bachelor's degree in electrical engineering from Widener University, Chester, PA; a master's degree in electrical engineering from Drexel University, Philadelphia, PA; and a master's degree in strategic studies from the Army War College in Carlisle, PA. She has received the following civilian service awards: Army Achievement Medal, Commander's Award, and two Superior Civilian Service Awards.

Daniel Murray has over 20 years of experience in the space industry, including the past 15 years with the FAA's Office of Commercial Space Transportation where he currently manages the Space Transportation Development Division. The Division is responsible for environmental reviews and airspace integration activities that support the evaluations of commercial launch and re-entry licenses and permits. The Space Transportation Development Division also leads the development of technologies for integrating commercial launch and re-entry operations into the National Airspace System (NAS). Since 2014, Mr. Murray has served as the co-lead of an FAA's Joint Space Operations Group, which works to address strategic and tactical issues associated with integrating commercial space launch and re-entry operations into the NAS.

Prior to joining AST, he was a flight controller and software engineer supporting the Space Shuttle program at United Space Alliance in Houston, Texas. He holds a Bachelor of Science in Aerospace Engineering from the University of Notre Dame and a Master of Science in Aerospace Engineering from the University of Houston.

Speaker Biographies

Dr. Paul D. Nielsen is the Director and Chief Executive Officer of Carnegie Mellon University's Software Engineering Institute (SEI), a U.S. Department of Defense federally funded research and development center (FFRDC). The SEI is a global leader in advancing software and cybersecurity to support the nation by advancing the science, technologies and practices needed to acquire, develop, operate and sustain software systems that are innovative, affordable, trustworthy and enduring.

Under Nielsen's leadership, the SEI has become a key research innovator in areas central to Department of Defense and other Federal Government operation in the cyberspace domain, including the integration of software-defined systems; software architecture; software sustainment and evolution; network, system and organizational resiliency; and the full spectrum of cyber security. More recently, Nielsen has pushed for tighter coupling between software engineering and systems engineering especially for systems that feature increasing complexity and connectivity and more autonomous functionality.

Prior to joining the SEI in 2004, Nielsen served in the U. S. Air Force, retiring as a major general and commander of the Air Force Research Laboratory after 32 years of distinguished service. Nielsen is a member of the U. S. National Academy of Engineering and a Fellow of both the American Institute of Aeronautics and Astronautics (AIAA) and the Institute for Electrical and Electronic Engineers (IEEE).

Nielsen earned a BS in Physics from the U.S. Air Force Academy, an MBA from the University of New Mexico, and an MS and PhD in Applied Science from the University of California, Davis.

Dr. Nielsen is a frequent speaker and panelist. He has served on boards and advisory groups including the Hertz Foundation, the AF Scientific Advisory Board and AIAA. He is a past president of AIAA. Currently he serves on the Board of AFCEA and is a member of the Defense Science Board.

Gina Oliver has over 25 years of Integration, Test and Evaluation experience in private industry and with the FAA. Ms. Oliver has led the Integration and Test Programs for multiple NAS automation systems including User Request and Evaluation Tool (URET), En Route Automation Modernization (ERAM), Tower and En Route Data Communications and Integrated Display System Replacement (IDSR). Ms. Oliver was most recently the En Route and Oceanic Second Level Engineering (SLE) Test Design Manager working to evolve SLE Test into more capability vs system driven testing. This includes requirement verification, system level functional testing, regression testing, enterprise testing and Operational Evaluations for multiple systems and

capabilities in the SLE portfolio. Ms. Oliver is currently the SLE Program Management Front Line Manager managing the budget, schedule and risks for all the En Route Systems in the SLE portfolio including ERAM, Data Comm, ERIDS, and ABRR/PDRR. Ms. Oliver graduated from Penn State University with a Bachelor of Science degree in Mathematics with a concentration in Electrical Engineering.

Dr. Joseph Rios serves as the Chief Engineer for NASA's UAS Traffic Management (UTM) project. He has been with NASA since 2007 and he generally focuses on computational and data issues related to the National Airspace System. He has worked on large-scale optimization models for traffic flow management, data exchange schemas for air traffic, and tools for general aviation pilots flying in remote locations. Joseph's dual undergraduate degree in pure mathematics and film/video theory affords him the ability to write a formal proof that Cool Hand Luke is one of the best films of all time. Teaching high school in Papua New Guinea for two years, via the Peace Corps, taught him (amongst other things) that his body is not built for the tropics. Following the Peace Corps, Joseph obtained his M.S. in Computer Science from Cal State Hayward, followed by a PhD in Computer Engineering from UC Santa Cruz. He feels strongly that writing about oneself in the third person is a lost art.

Donald (Don) Taylor seeks out lean maintenance capabilities and synergies within organizations, processes and systems. Don, Manager of Technical Operations In-Service Management for Surveillance/Weather Systems, started his career as a U.S. Navy electronics technician assigned to guided missile destroyer. After completing his tour duty in 1985, he supported the U.S. Navy and FAA as a defense contractor. In 1985, he accepted a field technician position with the Western Pacific Regional Office overseeing onsite contracted services installing radar facilities and equipment. In 2001, he moved to Washington DC, National Headquarters, to support acquisition teams for En Route surveillance radar products in the FAA Program Office. In 2011, he moved to Technical Operations NAS Integration and Support Group as a Surveillance/Weather Systems In-Service Manager. Since 2017, he serves as the Manager of the Surveillance/Weather Systems In-Service Management organization.

Pamela Whitley is the Acting Assistant Administrator for NextGen (ANG) and is responsible for championing the evolution of the National Airspace System (NAS). She has been involved with the Next Generation Air Transportation System (NextGen) from conception. As Acting Assistant Administrator, Ms. Whitley is responsible for providing strategic direction and executive oversight to more than 900 federal employees and an approximately $2 billion federal budget.

Speaker Biographies

Her career with the FAA began in 1993 as an electronics engineer responsible for the development of standards for airport electrical equipment and lighting. She has held positions in the Airway Support Facilities Division, the Office of Technology Development, and the NextGen Integration and Implementation Office. Ms. Whitley has extensive experience working with the Department of Transportation, the Office of Management and Budget, and Congress. Her early contributions to NextGen helped sustain a long-term funding profile for NAS modernization. As a result, the FAA has continued to invest in key programs and research activities that are modernizing today's NAS.

Throughout her career, Ms. Whitley has led large-scale, complex initiatives, combining technical knowledge with an understanding of strategic financial management. She has held several positions related to delivering NextGen, including Director of the NextGen Integration and Implementation Office. In 2011, ANG's responsibilities were expanded to include planning for the entire NAS. As a result, Ms. Whitley became responsible for providing leadership to help meet the organization's new goals.

While Ms. Whitley has spent most of her career with the FAA, she completed detail assignments at the Federal Motor Carrier Safety Administration and the Pipeline and Hazardous Material Administration.

Ms. Whitley is the recipient of several prestigious awards from the FAA, including a 2008 ATO Executive Council Leadership Award for her contribution to establishing a portfolio management framework for NextGen. She also received the FAA Administrator's Award for Environmental Excellence in 2005 and has been recognized for her leadership on various technology development initiatives over the years.

A graduate of Southern University in Baton Rouge, La., Ms. Whitley earned a Bachelor of Science Degree in Electrical Engineering. Her professional career as an electrical engineer began with the Tennessee Valley Authority and later she served as an engineering consultant to the Washington Suburban Sanitary Commission.

Dr. Gregory Woo, Chief of Aviation Systems Engineering at U.S. DOT's Volpe Center, has more than 30 years of broad experience encompassing data center management, hardware and software computer systems engineering, information technology and network management, project management and management consulting, leadership of technical research and new product development programs, and management of safety risk analysis projects for both operational processes and systems engineering processes. He has led a wide variety of projects at the Volpe Center ranging from Air Traffic Control systems engineering and technology

acquisition program management projects, to risk management and safety assessment exercises, to weather-related low visibility testing of instrumentation and technology designed to enable aircraft to operate safely in low-visibility conditions. The Aviation Systems Engineering division that Dr. Woo oversees provides safety risk analysis; safety risk management; complex data analysis, modeling, and simulation; and systems engineering analysis and management services.

Dr. Woo is a member of the FAA's New England Safety Team, serving as a safety counselor and stage check pilot in the general aviation industry. He holds an Airline Transport Pilot certificate for multi-engine aircraft and is type-rated in the Boeing 737NG. He also holds an FAA Remote Pilot certificate. Dr. Woo specializes in training pilots to safely operate technically advanced general aviation aircraft with advanced automation and flight management systems.

Prior to joining U.S. DOT's Volpe Center, Woo was the director of project management at a large multi-national biotechnology company, where he led and facilitated managers charged with a variety of research and development, business process improvement, and staff development projects. Prior to that, Woo worked in the information technology industry as a management consultant and project manager overseeing both data center upgrade initiatives and systems integration projects. Woo is a Project Management Institute (PMI) Project Management Professional (PMP) and is a past president of the PMI Mass Bay Chapter as well as a past vice president of the PMI International Assembly of Chapter Presidents.

Woo has a bachelor of science in electrical engineering from Yale University, a master's degree in organizational management and development from Fielding Graduate University, and a Ph.D. in Aviation from Embry-Riddle Aeronautical University with a focus on aviation safety, safety management systems, and human factors. His dissertation examines the limits of human performance in the visual detection of small unmanned aircraft systems (UAS).

Shelley J. Yak is the Director of the FAA William J. Hughes Technical Center, within the NextGen Organization. Ms. Yak serves as principal advisor and is responsible for managing, operating, and maintaining world class aviation laboratories; planning and coordinating FAA's research and development program; conducting applied research and development; testing, evaluating, verifying, and validating current national airspace system and future next generation air transportation systems; providing facility maintenance, engineering support, support services for all properties located at the William J. Hughes Technical Center.

Ms. Yak has extensive operational experience in leading organizations through change, building cross-organizational teams, leveraging strong project management and leadership capabilities to

build effective business processes and deliver technology solutions. Her prior positions within the FAA included Deputy Director of the Technical Center, supporting the previous director in making the Technical Center the nation's premier aviation and air traffic management federal laboratory. Ms. Yak was also the Division Manager of the Center Operations team where she was responsible for the operation, maintenance, and sustainment of the Technical Center facilities, which provide support and technical services. During her tenure in this position, she also acted in the position of Director of NextGen Performance and Reporting and was responsible for defining and establishing this newly formed organization and Director of Operational Evolution Partnership Planning. Previously, Ms. Yak held the position of Division Manager of Information Technology (IT) responsible for the management and security of the Technical Center IT network and telecommunications infrastructure, help desk and desktop support services, and software application development and support.

Prior to joining the FAA in 1997, Ms. Yak was the Superintendent of Power Delivery Dispatch and Support for Atlantic City Electric where she oversaw the dispatch of personnel responsible for the investigation and restoration of power during normal and emergency conditions and the technical staff responsible for maintaining, operating and supporting the Energy Management and Power Distribution Management computer systems.

Ms. Yak holds a Bachelor of Science degree in Information and System Science from Stockton University and a Masters in Engineering Management from Rowan University. She has received numerous internal and industry leadership and excellence awards throughout her career.