Verification and Validation Summit 2016

September 14-15, 2016

Speaker Biographies

Ruben Bigio works in the NAS Systems Engineering and Integration directorate of the FAA William J. Hughes Technical Center leading the Cybersecurity Test Facility. His primary responsibility is to conduct research and evaluation of security solutions for the protection of FAA's information technology assets. With over 13 years of experience in cyber security, Mr. Bigio has worked on prototyping security solutions, testing state-of-the-art security technologies using Air Traffic control systems, developing virtual environments for training cyber incident responders and evaluating operational cyber response procedures, policy development, and conducting security assessments. He also has over 15 years of experience in leading Test and Evaluation efforts for National Airspace System programs at the Technical Center. He received a Master of Science Degree in Computer Science from Fairleigh Dickinson University and a Bachelor of Science Degree, in Industrial Engineering, from the University of Puerto Rico.

Dr. C. David Brown is the Deputy Assistant Secretary of Defense for Developmental Test & Evaluation (DASD (DT&E)) and Director, Test Resource Management Center (TRMC). As the DASD (DT&E), he serves as the principal advisor on developmental test and evaluation to the Secretary of Defense (SECDEF) and the Undersecretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)). Dr. Brown is responsible for DT&E policy and guidance in support of the acquisition of major Department of Defense (DoD) weapons systems, and providing advocacy, oversight, and guidance to the DT&E acquisition workforce.

In Dr. Brown's role as Director, TRMC he advises the SECDEF and USD(AT&L) on matters pertaining to the DoD's Major Range and Test Facility Base (MRTFB), the Nation's critical range infrastructure for conducting effective test and evaluation (T&E). Additionally, he reviews and certifies proposed T&E budgets of Military Departments and Defense Agencies, administers the Central Test and Evaluation Investment Program (CTEIP), and oversees the DoD program for T&E science and technology.

Prior to his appointment in September of 2013, Dr. Brown was a consulting engineer for the MITRE Corporation and the Institute for Defense Analyses in the areas of DoD program management, systems engineering, and test and evaluation. He was also an adjunct professor and still teaches graduate courses in program management and systems engineering for Johns Hopkins University. He previously served as the Director of the Combined Test Organization and Executive Director for Test for the Army Future Combat Systems (FCS) program where he was responsible for planning and overseeing the testing and evaluation for this multi-billion dollar revolutionary development program.

Before working on the FCS program, Dr. Brown was the Director for Test and Technology for the Army Developmental Test Command, where he oversaw the management of more than 1700 tests annually, technical operations at five of the DoD MRTFBs and six associated test

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sites, and an annual budget of over $450 million in investment in test support and test technology development. Dr. Brown was also the focal point for the Army's application of modeling and simulation techniques to technical test and evaluation, including the development of the Virtual Proving Ground, the Army's multi-million dollar, multi-year virtual testing program. He has also been a test instrumentation engineer, test director, test manager, and an active Army Signal Corps officer in various leadership positions.

Dr. Brown became a member of the Senior Executive Service in 1999, holds two patents, and has authored numerous technical papers. He is a registered Professional Engineer and Certified Test and Evaluation Professional, was a member of the Army Acquisition Corps, and is a retired Army Reserve Colonel. He has a PhD in electrical engineering from the University of Delaware, and a MS in National Resource Strategy from the National Defense University Industrial College of the Armed Forces. He is an active member of the International Council on Systems Engineering and the International Test and Evaluation Association and was awarded the National Defense Industrial Association Walter W. Hollis Award for Lifetime Achievement in Defense Test and Evaluation.

Colonel John DiDonna, Jr. currently serves as the Commander, 177th Fighter Wing, New Jersey Air National Guard. The Wing's mission is to provide and sustain combat-ready forces supporting both federal and state missions. As commander, he is responsible for organizing, training and equipping a 4 group, 10 squadron wing who flies Lockheed Martin F-16C+ aircraft.

Upon graduation from the University of Massachusetts Amherst in 1988, Colonel DiDonna received his commission from the Air Force Reserve Officer Training Corps. After graduating from Undergraduate Pilot Training, he remained at Vance AFB, OK as a T-38 Instructor Pilot. He transitioned to the F-16 in 1994. Colonel DiDonna is an experienced F-16 instructor pilot and has served in a variety of flying duties to include Flight Commander, Air Sovereignty Alert Pilot, Director of Operations, Fighter Squadron Commander, Operations Group commander, and Expeditionary Operations Group Deputy Commander. He is currently on a military leave of absence from United Airlines. Colonel DiDonna is a command pilot with over 4,500 flying hours, including contingency and combat sorties in support of Operation Southern Watch, Operation Iraqi Freedom, and Operation Enduring Freedom. Prior to this assignment he served as the Vice Commander, 177th Fighter Wing.

Bachelor of Arts in Economics, University of Massachusetts, Amherst, MA 1988; Squadron Officer School, Maxwell Air Force Base, AL, Correspondence 1997; Masters of Aeronautical Science, Embry Riddle University, Luke AFB DLC, AZ 2000; Air Command and Staff College, Maxwell Air Force Base, AL, Correspondence 2004; Air War College, Maxwell Air Force Base, AL, Correspondence 2010.

Major Awards and Decorations include Meritorious Service Medal with 6 oak leaf clusters; Air Medal with 2 oak leaf clusters; Aerial Achievement Medal with 3 oak leaf clusters; Air Force Commendation Medal; Air Force Achievement Medal; AF Outstanding Unit Award with Valor

Chris Dumesnil is the Manager of the Federal Aviation Administration (FAA) Academy's National Air Space (NAS) Technical Services Division located at the Mike Monroney Aeronautical Center, Oklahoma City, Oklahoma. Chris hired into the FAA as an Electronics Engineer on the Oklahoma Sector Office Technical Support Staff in September 1987 shortly after receiving a Bachelor of Science degree in Electrical Engineering. There he led the non-federal facilities program for the Sector Office and specialized on Navigational Aids equipment including Very high frequency Omni-Range (VOR), Tactical Air Navigation (TACAN), Distance Measuring Equipment (DME), and various Instrument Landing Systems (ILS) configurations.

In August 1993, he became an Airway Facilities Frontline Manager in Tulsa, Oklahoma and then relocated to Lafayette, Louisiana in March 2001. There he was offered an opportunity in the planning of the Air Traffic Organization (ATO) for the Central Services Area.

Chris's career led him to the FAA Academy in November 2006 as a Section Manager for the Technical Operations Training Division. During his time there he earned his certification as a Project Management Professional (PMP) which led to a 2 year initiative on the FAA Administrators Risk Based Decision Making Strategic Plan.

He finally landed in his current position as Manager of the NAS Technical Services Division in August 2014 after completing a 6 month detail in the same position.

Chris just achieved a 29 year anniversary with the FAA where 23 years of it has been in management.

He owes his success to his understanding wife who has supported him throughout the last 25 years of his career and his 24 year old daughter who recently received her first Master's degree in Piano Performance and has transitioned from student to teacher for she is definitely the smartest one in the family.

Jim Eck is the Assistant Administrator for NextGen at the Federal Aviation Administration. The NextGen Organization is responsible for leading the modernization of the National Airspace System, the move to a smarter, satellite-based system with digital technologies and advanced procedures that will ensure safe and efficient air travel for decades to come. Eck leads a federal workforce of about 900 employees and manages the $1 billion annual budget of the Next

Generation Air Transportation System (NextGen). His office also oversees the world's leading aviation research complex at the William J. Hughes Technical Center in Atlantic City, N.J.

Formerly, Jim served as the Vice President of the Program Management Organization (PMO) responsible for all NextGen program activity, infrastructure modernization programs, and service to legacy NAS infrastructure.

Jim has worked acquisition programs since joining the FAA in 1996. In addition to program development and execution, he has been active in leading acquisition management policy and workforce development.

Prior to joining the FAA, Jim spent 18 years working for the U.S. Navy, concluding his work with the Naval Command Control and Ocean Surveillance Center in tactical communications research and development.

Jim is a BSEE graduate from the Pennsylvania State University, and MSE System Engineering graduate from the University of Pennsylvania.

Donald Firesmith, recognized as a Distinguished Engineer by the Association of Computing Machinery (ACM), is a Principal Engineer at the Software Engineering Institute (SEI), where he helps government program offices acquire large, complex, software-reliant systems. He has written seven system and software engineering books, and has over 250 journal articles, conference papers, presentations, and tutorials. With 38 years of experience, his main areas of expertise are requirements engineering, system and software architecture engineering, testing, and process engineering. In his spare time, he also writes science fiction and paranormal fantasy novels.

John Frederick is a graduate from Drexel University (Philadelphia) with a BS in Computer Systems Management. Mr. Frederick has over 30 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 11 years, he has 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.

Kerianne Gross is a Research Aerospace Engineer on the Verification and Validation of Complex and Autonomous Systems (VVCAS) Team at the Air Force Research Laboratory at Wright-Patterson Air Force Base in Ohio. Prior to joining the VVCAS full time team in 2015, she also participated in the development, simulation, and test of ground and midair collision avoidance systems for fighter aircraft. Ms. Gross has a BS in Aerospace Engineering from Embry-Riddle Aeronautical University in Prescott, Arizona and an MS in Astronautical Engineering from the Air Force Institute of Technology at Wright-Patterson Air Force Base.

Michael Konyak works in the Laboratory Services Division of the FAA William J. Hughes Technical Center facilitating inter-laboratory collaboration and has been working with the Technical Center since 1995. His primary goal is ensuring that the NAS Laboratories are capable of meeting the V&V needs of NextGen. He is also an Adjunct Professor of Aeronautics at Rowan University. He received a Master of Science Degree in Mechanical and Aerospace Engineering at Princeton University and a Bachelor of Science Degree, also in Mechanical and Aerospace Engineering, from the University of Colorado, Boulder. He has over 20 years of experience in aeronautics and air traffic simulation. He is the Chair of the Southern New Jersey section of the American Institute of Aeronautics and Astronautics (AIAA) and an AIAA Associate Fellow. He has several FAA and AIAA publications in his field.

Constance E. Morgan, a Systems Engineer in The MITRE Corporation's Center for Advanced Aviation System Development, is the developer of the Concept Maturity Framework. Since 2008, she has developed, explored and evaluated airport surface-related concepts. Earlier at MITRE, she led the human computer interface specification for the FAA's Automated En Route Air Traffic Control (AERA) and was on the team that developed the NASA Software Management and Assurance Program. Other experience includes Fannie Mae, where she became a certified Six Sigma Black Belt; independent contracting for commercial clients, and analysis at Boeing Computer Services, First Virginia Bank, and the US Department of Agriculture. Throughout her career, execution has always been paired with observation and the goal of continuous improvement. Ms. Morgan earned a Bachelor of Arts at Brown University, and a Master of Science in Administration/General Management Systems and Organizational Cybernetics from George Washington University.

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Daniel Murray has 20 years of experience in the space industry, including the past 13 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, as well as the development of other future activities. He serves as the co-lead of an FAA Joint Space Operations Group that addresses issues associated with integrating commercial space launch and re-entry operations into the National Airspace System.

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.

Michael Ogundoju was born in Lagos, Nigeria and became a US citizen in 1994. He received a BS in electrical engineering from Drexel University, Philadelphia, in 1997, and an MS in Systems Engineering from Stevens Institute of Technology, Hoboken, New Jersey, in 2009.

In 1994, Michael joined the Federal Aviation Administration as a co-op student, becoming a full time employee in 1997 at the FAA William J. Hughes Technical Center. During the early part of his career, he coordinated and performed quality testing on various NAS equipment including facility power testing, and supported the certification of the Northern California TRACON and Honolulu Combined Facility.

Later Michael served as a test and evaluation lead engineer for the FAA Telecommunication Infrastructure (FTI) program office helping to create an integrated suite of modern telecommunications products, services, and business practices. In recent years, as a systems engineer, he served as the FAA representative to RTCA UAS SC-203 SC-228 supporting the development of UAS Enterprise Architecture and Command and Control (C2) Minimum Operation Performance Standards (MOPS). Additionally he was responsible for the development and maintenance of the FAA NAS Facility Roadmap.

Michael is currently the system architect for NAS Storyboard development where he serves as a subject matter expert for the development of storyboards for NextGen foundational programs and major system capabilities. He is a member of ITEA, South Jersey Chapter; and has served as secretary and treasurer of IEEE.

Joseph M. Sheairs, Sr. is the Executive Director of the Stockton Aviation Research & Technology Park (SARTP) and the Deputy Director for the New Jersey Unmanned Aircraft Systems (UAS) Test Site. As the lead for the SARTP, he is working to develop a world class, member-based research

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environment focused on the future of aviation in collaboration with government, academia, and industry. As the lead for the NJ UASTS, he has focused the integration of UAS into the National Airspace System (NAS) ensuring that the NAS continues to perform safely and efficiently through the application of V&V techniques and strategies. The NJ UAS Test Site has supported many high altitude, long duration, civil UAS flights at Cape May Airport.

Mr. Sheairs has over 31 years of engineering and technical experience in real-time, mission critical systems for both the NAS and US Navy AEGIS cruisers and destroyers. As an entrepreneur, he founded an engineering firm that supported many NAS systems throughout the FAA lifecycle. He has a Bachelor's of Sciences from the United States Military Academy and a Master's of Computer Sciences from NJIT.

Kimberly Simpson has over 30 years of systems engineering experience, eleven specifically in the systems engineering, integration, verification and validation of human exploration's complex cross-program mission architectures. As the NASA Engineering & Safety Center (NESC) Systems Engineering Technical Discipline Verification & Validation co-lead, Ms. Simpson currently leads independent assessments related to human exploration crew and launch vehicle cross-program verification and validation activities, specifically for the Commercial Crew, Multi-Purpose Crew Vehicle (MPCV), Space Launch System (SLS) and Ground Systems Development & Operations (GSDO) programs. Previously she led the development, design, verification, validation of the Exploration Flight Test 1 (EFT-1) Integrated Network which successfully performed all command, telemetry, voice, video and imagery data processing throughout its December 5th, 2014 mission. Kim is now applying experiences gained from the Orion test flight, to better understand and mitigate human Exploration Mission 1 verification and validation, software and avionics risks. Through extensive use of model-based systems engineering techniques she has demonstrated an increase in affordability, achieved interoperability within and amongst program/projects, centers and external partners and trained multiple users on the benefits of model based systems engineering.

Nathan Tash has been with the Federal government for over 25 years in various positions. He started his career as a procurement law staff attorney in the FAA's Office of the Chief Counsel. From there, he moved to the Office of Management and Budget's Office of Federal Procurement Policy (OFPP). At OFPP, Mr. Tash worked on such projects as the FAR Part 15 rewrite (for which he received the Vice-President's Hammer award) and the Federal Acquisition Streamlining Act. Prior to leaving OFPP, Mr. Tash was appointed a Deputy Associate Administrator for Procurement Innovation. Upon returning to the FAA, Mr. Tash has worked in a number of positions and offices as both a certified Program Manager and a Contracting Officer with an unlimited warrant. He has served as a manager on the ATOP, ERAM, ATCOTS, and Technical Training programs. Prior to his current position, Mr. Tash was the Assistant Chief Counsel for Acquisition and Fiscal Law in the

Chief Counsel's Office. Currently, Mr. Tash serves as the FAA's Deputy Assistant Administrator for Acquisition and Business Services and is the FAA's Acquisition Executive.

Mr. Tash received his undergraduate degree, with general honors, from the University of Maryland and his law degree, with honors, from the National Law Center at George Washington University.

Ryan Michael Williams joined the FAA in 2015 as an Acquisition Profession Manager in the Acquisition Career Management Office. As such, he manages the FAA's acquisition certification programs for the Systems Engineering and Test and Evaluation professions. Ryan graduated from Old Dominion University in 2009 with a Bachelor of Science degree in Business Administration. He has a background in organizational effectiveness and workforce development and prior to joining the FAA, spent 10 years as a civil servant for the Department of Defense. Mr. Williams started his government career serving as an Executive Assistant with the Mid-Atlantic Regional Materials Test Laboratory at Norfolk Naval Shipyard (NNSY), located in Portsmouth, Virginia. Later in 2007 Mr. Williams transferred to the Production Resources Department as an Administrative Management Specialist while he finished his undergraduate career. In this role, he contributed significantly to implementing the National Security Personnel System at NNSY and improving personnel functions. In 2009, Mr. Williams was given the opportunity to have a role in the Business and Strategic Planning Office. Here, he was responsible for ensuring effective organizational alignment and workforce structure to meet mission requirements, improving employee data collection and reporting systems, and responding to congressional data calls. Prior to leaving the shipyard in 2010, Mr. Williams was tasked to work with Naval Medical Center, Portsmouth, shipyard leadership, and the workforce of over 8,000 employees to improve the medical appointment process and minimize the significant lapse on employee medical qualifications.

In December 2010, Mr. Williams transferred to Headquarters, United States Marine Corps (HQMC). As an Organizational Development Specialist in the Organizational and Workforce Management Office, Ryan was responsible for providing organizational and workforce development services such as strategic planning, command climate survey services, and the administration of Human Capital programs. Prior to transferring back to the Navy in 2014, he served as the Human Resource Development Strategic Advisor responsible for workforce development initiatives, and policy, HQMC-wide. Immediately prior to joining the FAA, Ryan was a Navy Operations Analyst for the Joint Strike Fighter F-35 Lightning II Program Office where he performed manpower analysis, HR advisory services, and executive support/advisor to the program's senior leadership team.

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.