

Dr. Mumm is a retired Army intelligence officer who is a senior cybersecurity professional with 25+ years of progressively challenging positions within the advanced (emerging and disruptive) technology fields and information technology arenas. He has led highly visible, high pressure, autonomous systems research, artificial intelligence (AI) initiatives and cybersecurity programs for the Director of National Intelligence (ODNI) the National Security Council (NSC) and the Central Intelligence Agency (CIA).

He is a published researcher in both the scientific and social science arenas and has won grants and contracts to further test and evaluate his original research. He has notable experience in research and systems engineering which includes winning grants and contracts for unmanned aerial vehicle (UAV) research and the creation of an advanced multiple fuel system where he operated the world's first and only helicopter that flies on five separate fuels without engine modifications. His research extends into emerging and disruptive technology for offensive and defensive missions supporting US and coalition operations. His UAV and robotics expertise has focused on determining the specific uses, exceptions, and allowances for robotics operations; including studying the unintended consequences, future uses, and misuse of such technologies. He just released his fourth book in August 2019, the Second Edition of Unmanned Aircraft Systems (UAS) in the Cyber Domain: Protecting USA's Advanced Air Assets.

EDUCATION

Graduate of the Federal Executive Institute (FEI) LDS-437	2017
Colorado Technical University, Colorado Springs, CO	2015
Doctorate of Management, Concentration: Homeland Security	
American Military University, Manassas VA	2009
M.S., Strategic Intelligence	
Chadwick University, Chadwick, AL	1997
B.S., Business Administration	

GRANTS AND SPONSORSHIP

Army Aviation and Applied Technology Directorate (AATD) Agreement Number# W911W6-06-2-0009, Victory Systems, LLC. (\$3, 200,000)	2006
Virginia's Center for Innovative Technology CIT Award#TRA-99-004 Advanced Multi-Fuel Systems, Inc. (\$100,000)	1999
US Department of Transportation, CRADA Award# 97-CRDA-0112	1997

CIVILIAN AWARDS AND DECORATIONS

Congressional Record Recognition-Dr. Hans Mumm-Congressional Record E1687/E1688	Dec 2018
People of Distinction Humanitarian Award	Sep 2016
US Patent and Trademark- <u>How to Harmonize the Speed of Innovation and Change with the Human Spirit's Need for Leadership</u> -Dr. Hans C. Mumm/Registration number 4927039	Mar 2016
Exceptional Performance Award-with monetary bonus-US Government	Jul 2014
Secretary of Defense Medal for Exceptional Public Service	Oct 2010
Recipient as one of the "Ten Outstanding Young Americans"	Jun 2005
Finalist for the ROA Outstanding Junior Officer (Strom Thurmond Award)	Sep 2004
Outstanding Young Virginian, Virginia Jaycees	Oct 2003
National Defense PAC "American Patriot Ingenuity Award" for service during "Operation Iraqi Freedom"	Mar 2003

MILITARY AWARDS AND DECORATIONS

Twenty-Three Personal military ribbons/medals	1994-2010
Six-unit medals/citations	1994-2010
Two Directors Awards, Defense Intelligence Agency (DIA)	2001-2010

PROFESSIONAL EXPERIENCE

Director of Special Projects (Principal)

Mar 2000 to Present

Unmanned Vehicle and Robotics, Victory Systems, LLC (Concurrent)

Victory Systems was founded by a cadre of forward-thinking, combat-hardened aviators, engineers, manufacturing managers, and businessmen. They have lived the missions of wartime surveillance, medical evacuation, armed interdiction search and rescue and cyber-attacks to all critical systems. In the military, governmental and civilian service they have helped define, shape, and implement the concept of AI, cyber security, and unmanned, robotic systems to help eliminate risk, improve the speed of service, lower mission cost and improve overall performance tempo and reliability. The cadre created Victory Systems to deliver reliable, effective and ‘right-now’ solutions with innovative and practical product design.

Accomplishments:

- Nov 2018 to Aug 2019-Trinidad and Tobago (T&T) Police Service contract-imbedded (on ground in country) with police and national security service to complete an in-depth technology review with recommendations to update and supplement future adaptable technology for all aspects of security, policing and prosecution. This included authoring several papers, giving briefings and training classes in new electronic evidence gathering techniques, surveillance and detection tactics, electronic evidence handling, exploitation and storage along with protective equipment recommendations in order to overmatch gangs, criminals, and terrorist organizations operating in T&T allowing officers the best chance of surviving in this lethal environment.
- Received grant award #W911W6-06-200009 for a Technology Investment Agreement to pursue the Dual Configuration Vertical Takeoff and Landing Air Vehicle (DCAV) valued at \$3.2M.
- Served as principal or co-principal investigator conducting major research on the use, policies, and laws of UAVs for military, law enforcement, and homeland security concerns.
- Authored Congressional level papers including draft legislation titled “Establish a National Inter-Agency Working Group to Develop Policies and Protocols on the Use of UAVs and Robots” which cultivated support from the armed services, US House, and US Senate.
- Received CIT Award # TRA-99-004 to work with Virginia Tech, and Oak Ridge National Labs to create the world’s first and only multiple fuel optimization systems using artificial intelligence with sensor integration.
- Served as principal investigator and creator of the Advance Multiple Fuel Optimization System. This new technology was created by using my original research and was combined with applications from technology transfers from Oak Ridge National Laboratories. This created the world’s first and only system capable of detecting specific types and grades of fuel an engine was operating with a neural network (AI) that manipulated engine operating parameters to perform at optimal fuel performance.
- Flew the world’s first and only helicopter that could fly on five separate fuels without engine modifications.

Victory Systems’ Current Contract Performance includes the following:

- Army and Airforce Exchange Service Contract CONUS 17-423 (\$2,300,000) Second Year Option Awarded Sept 2019
- Army and Airforce Exchange Service Contract/Agreement Japan/OCONUS JO191004 (\$1,000,000)-

- Awarded March 2019
- Mason Harriman Group-Subcontract for Department of Homeland Security (\$80,000)- Awarded August 2019
- Hartwell Capitol Consulting-Subcontract-Trinidad and Tobago Consulting (\$45,000)-Awarded January 2019
- Noetic International-Subcontract Consulting (\$3,750)-Awarded June 2019

Successfully Completed Contracts:

- Army Aviation and Applied Technology Directorate (AATD) Agreement Number# W911W6-06-2-0009, Victory Systems, LLC. (\$3, 200,000)
- Virginia’s Center for Innovative Technology CIT Award#TRA-99-004 Advanced Multi-Fuel Systems, Inc. (\$100,000)
- National Security Agency (NSA) Classified Contract-registered in NSA Acquisition Resource Center (ARC) database
- US Department of Transportation, CRADA Award# 97-CRDA-0112

Geospatial Officer, Future Warfare Division, GS-0861-15, Joint Duty Assignment (JDA)
 National Geospatial Intelligence Agency (NGA) **Oct 2015 to Apr 2018 (Retired)**

Served as the Senior Future Needs Research Advisor. Acted as an organizational change agent and "futurist" visionary. Led studies/research design for autonomous systems UAVs and artificial intelligence uses, applications and policies. Currently, there are six. Researched and reported on how all six of the recognized unmanned autonomous systems (unmanned boats, unmanned submarines, unmanned surface vehicles, unmanned air vehicles, free-roaming humanoids, and autonomous cyber system technologies will communicate and work with each other and with the other machines around them as the autonomous arena adapts from simplistic tasks to a fully integrated architecture.

Led a high level, high visibility project that directly impacted billion-dollar investments in future NRO Overhead Systems (NOS). The project demanded the ability to collaborate and coordinate with DOD agencies, the Joint Staff, liaisons from the Special Operations Community, and other IC members.

- Authored "Research Design for Future GEO INT Needs"
- Assigned to special access programs for future acquisitions
- OGMFA Lead-CINF to Omega mapping and modeling
- Served as OGMFA liaison to USSOCOM Senior Representatives of NGA/IC
- Authored, submitted, and tracked unfunded requirements for CINF Audit effort
- Received two exceptional performance awards with a monetary bonus in 2017

Acquisition Specialist, GS-1300-15 **Jan 2015 to Oct 2015**

Intelligence Advanced Research Projects Activity (IARPA)-ODNI

- Provided technical support to classified IARPA projects, assisted PMs overseeing a diverse R&D portfolio, The IARPA PM provides the unique, necessary technical depth and works closely with the R&D Acquisitions Specialist who has the responsibility to monitor all aspects of the day-to-day administration of the acquisition. Created solutions in a challenging environment to ensure technological and scientific capabilities were created and sustained that advanced the IC mission goals.

Adjunct Professor, California University of Pennsylvania-April 2015 to Present-Concurrent

Responsibilities: Adjunct professor instructing in the Department of Criminal Justice.

- Hired to prepare, develop, build, update, and instruct “Principles of Homeland Security” course. Add course

number. This lecture series is a part of a new degree program and co-learning environment utilizing online classes coupled with a traditional brick and mortar classes, all based the students' needs in a competency-based learning model.

- Research Homeland Security issues-instruct students-assist students with research methods

Branch Chief, Continuous Monitoring, GS-2210-15-CIO-CIA on JDA

Oct 2013 to Jan 2015

- Information Technology Systems Security Manager for the Director of CIA responsible for information security program, policies, and procedures for the six organizations supporting the CIO and Director's objectives.
- Led six business areas for the CIA including Continuous Monitoring (CM) Outreach and Assessment, Continuous Monitoring Analysis, Enterprise Audit Analysis, Wireless Watch (rouge wireless detection), Federal Information Security Management Act (FISMA Scanning), and System and Application Security Patch Management. Supervised more than 20 Contractor and Government resources who analyzed, assessed, and mitigated issues with information technology systems.
- Developed and monitored metrics for contracts spend planning. Responsible for managing three separate multi-million dollars' services contracts, and a wireless laboratory.

Accomplishments:

- Implemented and operated a continuous monitoring analysis function that satisfies the requirements of ICD503, NIST SP800-53 and DNI Guidance in support of the Agency Risk Management Framework and network defense and counterintelligence functions. Received awards and accolades for creating and delivering the first known end-to-end continuous monitoring system in the intelligence community.
- Identified mission requirements, established a technical architecture, and developed documentation supporting Agency configuration management (CM) processes for scanning enterprise systems and networks, and for collecting compliance data from IT systems.
- Created and communicated budget for startup branch receiving management concurrence and funding to support the resource requirements and diverse missions of the Continuous Monitory Branch. Justified increases in budget year over year by 50% and staffing levels by 150% due to the branch's success and contributions.
- Coordinated preparation of budget justifications and back up materials for presentations to the CIO, OMB, and Congress to support the CBBJ and POM cycle reporting.
- Spearheaded a wireless assessment and perimeter monitoring function that satisfies Federal Information Security Management Act (FISMA) and Agency technical security requirements.
- Directed the deployment and operational requirements for an enterprise audit analysis function that satisfies the requirements of ICS 500-27. Supported network defense and counterintelligence functions, proactively analyze enterprise audit collections for incidents of misuse, compromise, or intrusion. Analyzed audit for application issues and assisted application developers as necessary.

Lead Intelligence Community Policy Officer, GS-2010-15-ODNI

Dec 2012 to Oct 2013

Led and oversaw the development and execution of a broad range of policies, processes, and guidance regarding information technology security including information technology, information security, and risk management and computer network defense. Served as the liaison to the Committee on National Security Systems (CNSS) and National Institute of Standards and Technology (NIST) committees. Participated in multiple working groups on related directives, policy guidance, standards, and initiatives addressing the IC-CIO equities.

Accomplishments:

- Negotiated and coordinated to full concurrence four CNSS policies and two special projects including two policies that had been stalled for more than 18 months.
- Researched, authored, and successfully negotiated statement of work and final contract for an IC IT compliance system after contract had lapsed by six months and both government and the service provider

was frustrated with each other and the process.

- Selected by Data Management Division Chief to lead the team to answer Congressionally Directed Actions (CDA) allowing Congress to understand certain efforts within the IC that allowed for funding to be restarted for those efforts.
- Coordinated preparation of budget justifications and back up materials for presentations to the CIO, OMB, and Congress to support the CBJB and POM cycle reporting.
- Established a team to develop the strategic vision that included the development of a “Concept of Operations” (CONOPS) document. I considered political, budgetary, personnel resources and the long-term strategic goals of the IC, along with how to integrate this policy in with ICD 503, the Risk Management Framework. I assisted my team as we developed a comprehensive list of strategic actions to bring about organizational change, including championing community-wide collaboration efforts to establish the foundational “playbook,” for the IC Cyber Defense Program, improving Federal Information Security Management (FISMA), identity management and access along with System and Application Security Patch Management. These strategic objects mapped back to the National Security Presidential Directive-54, Homeland Security Presidential Directive-23, as well as the National Intelligence Strategy Mission Objective 4 and 5. I formed a core group of team members to focus solely on the creation, acceptance, and integration of the CONOPS.
- Set initial parameters for the integration, including the ability to implement the CONOPS within two years. I directed the core group to stand up training and operation cells to test the implementation through a historic first, full IC-wide integrated cybersecurity exercise known as ICE STORM. I negotiated concurrence by the agencies and their stakeholders for the plan of action, gaining their cooperation by stressing the political dynamics of the initiative and the technical necessity of a team approach as the IC networks are shared risk platforms. At different points during this effort, political dynamics of the situation began creating tension and stress among the stakeholder teams. The team overcame these issues by using creative compromises.

Division Chief of Cyber Network Defense GS-2210-15

Dec 2010 to Dec 2012

Provided leadership and direction as and Information Systems Director for the ODNI CIO’s computer network and defense (CND) and Intelligence Community Incident Response Center (IC-IRC) programs. Assessed staffing requirements in relation to current and future staffing needs and made the appropriate budgetary adjustments. Applied multidisciplinary knowledge of laws and regulations, principles, and policies to create solutions to meet the needs of the ODNI. Developed and monitored processes and measurements to validate program progress.

Accomplishments:

- Oversaw 42 programs and initiatives for Comprehensive National Cyber-Security Initiative (CNCI) and led all transitions to the owners of record by Congressional mandate.
- Enhanced the Intelligence Community’s CND capabilities by leading two of the twelve major USG cyber security initiatives in support of the Comprehensive National Cyber Initiative.
- Transitioned the IC-IRC from passive reporting to real-time network monitoring with security awareness for networks and cloud environments.
- Supervised numerous contracts and drafted contract documentation including award fee justifications for contractors who support the OCIO/ ODNI missions.
- Division Team recognized for successfully creating, planning, and executing a national level cyber exercises (ICESTORM). I have a broad and in-depth knowledge of telecommunications systems, corporate networks, cloud solutions and an understanding of the associated security architecture. . Some examples that illustrate this is my work in creating a team charged with bringing major transformations to the Intelligence Community (IC) around integrated network defense. This includes the creation of the intelligence community cloud- IC IT Enterprise (IC ITE) which is a strategy to further the DNI’s vision of intelligence integration by changing the IC IT’s operating model. IC ITE moves the IC from an agency-centric IT

architecture to a common platform where the Community easily and securely shares technology, information, and resources. The follow-on (current work) created the big data, commercial cloud services (C2S), Amazon Webservices (AWS) through the CIA. The architecture was built not only for compliance; it was built for an ever-changing security environment. Cloud security is the highest priority. The CIA and IC benefits from data center and network architecture built to meet the requirements of ICD 503 and National Institute of Standards and Technology (NIST) Special Publication (SP) 800-53. Subsequently, I successfully tested the Intelligence Community Directive (ICD) 502 CONOPS.

- These efforts increased the nation’s overall cyber situational awareness while decreasing the time it takes to recognize, stop, and mitigate cyber-attacks against the national security infrastructure. These successful efforts are memorialized in the Government Accountability Office (GAO) report GAO-10-338. In 2011, The Intelligence Community Cyber Incident Response Center (IC-IRC) was a 24/7 operation that facilitates the sharing of cyber event information among members of the IC to protect the IC’s ability to collect, analyze, and disseminate intelligence. The IC-IRC is responsible for coordinating with other incident response organizations, including US-CERT and DOD, enabling such organizations to leverage the IC’s analytic capabilities for providing advanced indications of potential threats.
- One of the most significant requirements was the need for real-time monitoring. During this period, I led the transition of the IC from a passive reporting entity to a real-time integrated network monitoring and security awareness center. The operations of the IC-IRC are so critical, the Director of National Intelligence and the President are kept informed of any activity that could jeopardize the ability of the IC to accomplish its mission.
- The result of these efforts reduced cyber response times by over 40%, and these times continued to decrease as longer-term projects come to fruition. Zero-day attacks are responded to quickly driving the security of the network up and lessening the impact of the cyber-attacks on the government networks. Automation and advanced heuristics assist by reducing the insider threat issue. Although the results of insider threat initiatives are classified; they are in place with IC-wide initiatives to lessen the impact of this type of event, while allowing for advanced persistent threat models to guide parts of the initiative. The success of the IC-IRC is touted in many government documents as the model for the future. In 2014, the IC-IRC was transitioned into the Security Coordination Center (SCC) in recognition of its success and to place the SCC in the lead for IC cybersecurity.

US Army-Active Duty/Combat and Reserve Duty

Feb 1994 to Oct 2010

US Intelligence Community-Counter Proliferation Office-CI Tech HUMINT Officer
 Captain, US Army, Operation Iraqi Freedom (OIF), Global War on Terror-CENTCOM AOR (Medically Retired-Wounded Warrior 2010)

Accomplishments:

- Created and lead the “most successful information operations campaign in the history of DIA” (quoted from award given to me and my team) creating intelligence products that had a direct effect of the outcome of Operation Iraqi Freedom including the famous “Iraqi Leadership Deck of Cards.” SME in terrorism and counter-terrorism intelligence gathering tracking and analysis.
- Coordinated with HUMINT operators and the IC to create a comprehensive Iraqi Leadership database, including 3,000 personalities to support CENTCOM during Operation Iraqi Freedom (OIF) the first known to exist in the IC.

SELECTED PUBLICATIONS	
Mumm, Hans C./Nichols/Ryan/Carter, Unmanned Vehicle Systems & Operations on Air, Sea, Land	Oct 2020
Mumm, Hans C./Nichols/Ryan/Carter, Counter Unmanned Aircraft Systems Technologies and Operations	Jan 2020

Mumm, Hans C./Nichols/Ryan/Carter, Unmanned Aircraft Systems in the Cyber Domain: Protecting USA's Advanced Air Assets 2 nd Edition-ISBN 978-1-944548-23-0	Aug 2019
Trinidad and Tobago Police Service-authored and trained- "Training procedures for seizing, transporting exploiting and storing suspects cellphones, laptops and notepads"	May 2019
Mumm, Hans C./Nichols/Ryan/Carter, Unmanned Aircraft Systems (UAS) in the Cyber Domain: Protecting USA's Advanced Air Assets, ISBN-13: 978-1724077066	Oct 2018
Mumm, Hans C. and Sachs, Justin <u>Lightning Growth, Success Strategies for Today's Leaders</u> , Publisher: Motivational Press, ISBN-978-1-62865-353-3	Jan 2017
Mumm, Hans C. <u>Futuring and Its Impact on Homeland Security</u> , Publisher: American Military University-IN Homeland Security Publication-File location: http://inhomeandsecurity.com/wp-content/uploads/2017/01/Mumm.pdf	Jan 2017
Mumm, Hans C. and Flory, Teri C. <u>Fundamental Tools for Technology in Law Enforcement</u>	Nov 2016
Mumm, Hans C. <u>Applying Complexity Leadership Theory to Drone Airspace Integration</u> , publisher: Motivational Press, ISBN-978-1-62865-202-4	Jul 2015
Mumm, Hans C. <u>Managing the Integration and Harmonization of National Airspace for Unmanned and Manned Systems</u> , publisher: Colorado Technical University (CTU) publication number: 3646158	Aug 2014
Mumm, Hans C. <u>Embracing the Need For Leadership in the New World of Unmanned Vehicles and Robotics</u> , publisher: ISIS (ISSN:2332-0311)	Sep 2014
SELECTED SPEECHES/PRESENTATIONS	
Dirksen Senate Office Building-Panelist-Hay Institute-The Role of Technology in Improving Human Security	Jun 2019
Evanta/Gartner Boston Chief Data Officer (CDO) Summit- Co-Existing with Autonomous Systems and Your Data	Jun 2019
TTC-UAV East-Unmanned Aircraft Systems East for Defense & Government-Integrating Autonomous Systems; Artificial Intelligence and the Human Race...Can They Co-Exist?	May 2019
Evanta/Gartner Chicago CIO Summit-Integrating Autonomous Systems; Artificial Intelligence and the Human Race...Can They Co-Exist in Your Marketplace?	May 2019
Evanta/Gartner DC CIO Executive Summit-Integrating Autonomous Systems; Artificial Intelligence and the Human Race...Can They Co-Exist in Your Marketplace?	May 2019
US Department of State-INL-Integrating Unmanned Systems and AI into International Law Enforcement Environments	Mar 2019
New Jersey CIO/CISO Executive Summit-Integrating Autonomous Systems; Artificial Intelligence and the Human Race...Can They Co-Exist in Your Marketplace?	Dec 2018
Speaker at Technology Training Corporation's "Unmanned Systems (UxS) for Defense & Government" Symposium-Washington DC	Apr 2018
Panelist-Graduate School USA- "Where We're Going and Why We Should Care" - A Panel Discussion for EPP Graduates	Feb 2018
Speaker-Wharton DC Innovation Series-Drones - Uniquely Innovative Solutions for Today & Tomorrow: WDC Innovation & Entrepreneurship Forum	Feb 2018
Speaker-Technology Series-Colorado Technical University (CTU) Student Support Community "The Intersection of Drones-Cyber and IOT-The Balance of Security and Convenience"	Nov 2017
Guest speaker-JCS J2/Joint Reserve Intel Support Element (J2/JRISE), Autonomous	Nov 2017

Systems Infrastructure-Manned/Unmanned Teams and the Future of the US Military	
Conference Speaker-American Chamber of Commerce, Trinidad, and Tobago-Evolving Critical Energy Security Requirements: Integrating Autonomous Systems; Drones-Artificial Intelligence and the Oil/Energy Sector-Can They Co-Exist?	Nov 2017
Guest Speaker-Federal Executive Institute, Integrating Autonomous Systems; Drones-Artificial Intelligence and Humans-Can They Co-Exist?	Sept 2017
CALU-Conference Speaker-"Human Security II: Building Community and Police Teams to Protect and Serve Our Citizens"-9 th Annual Homeland International Security	Nov 2016
Guest speaker-Panel Moderator-"Drones, UAVs, and Your Business Model -- Can They Co-Exist? Wharton Innovation Summit 2016 Washington DC	Apr 2016
Guest speaker-"Drone Wars" INFOWARCON 2016	Apr 2016
Guest Speaker-"Combining Non-Linear leadership to non-traditional educational methods" Association of Non-Traditional Students in Higher Education (ANTSHE)	Apr 2016
Guest speaking at the Inter-Agency Seminar Group (IASG) Luncheon at the Brookings Institute "Autonomous Theories-UAV Systems-Training to Obtain Goals-Not Just Swarm"	Oct 2015
Pentagon book signing event-Invited to sign books inside the Pentagon-Washington D.C.	Oct 2015
Webinar "Zero to a Billion or Bankrupt –How Using Outdated Leadership Will Kill Your Organization"	Oct 2015
Video interview for Cyber Blog-Drones-Friend or Foe in the Wireless Workplace, October 18, 2015	Oct 2015
Interview published in the National Defense Industrial Association (NDIA) Monthly Magazine	Sept 2015
Elected to the Board of Directors-Robotics and Unmanned Systems (UAS) Kansas State University	Aug 2015
Panelist-Cyber Maryland Summit-Panel discussing Cloud Continuous Monitoring Presentation/book signing Boston, MA Sept 30, 2015	June 2015
Radio interview with Al Cole on his show "People of Distinction" -CBS radio affiliate-Applying Complexity Theory Leadership to Drone Airspace Integration	Apr 2015
Radio interview- Hollis Chapman Radio Show-"How to Pursue Your Passion and Make Money Doing What You Love"- Applying Complexity Theory Leadership to Drone Airspace Integration	Apr 2015
Guest speaker-INFOWARCON-Applying Complexity Leadership Theory to Drone Airspace Integration	Feb 2015
Live Chat-Combatting Human Trafficking-CTU	Aug 2014
Live Chat-Embracing the Need for Leadership in the New World of Unmanned Vehicles and Robotics	Feb 2010
Human Trafficking: The Money, Power Terrorism Links, National Youth Leadership Forum	Oct 2009
Army Reservist: Consequences and Opportunities of the Spiral Effects of Technology & The Interconnectivity of the Leadership Decisions, National Youth Leadership Forum	May 2009
Information Operations Response to Russian Invasion, Republic of Georgia	Jun 2008
Emerging/ Disruptive Technologies: The Art of the Possible Striving to Not Confuse Activity with Results- The Forced Obsolescence of Enemies Systems and Tactics	Jun 2008
Development of National Policy on Unmanned Vehicles and Robotics	Sep 2005
The Iraq War-Are We Winning? American Legion Conference	Jul 2004

Reflections of a Modern Combat Veteran-Operation Iraqi Freedom, ROA	Apr 2004
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PROFESSIONAL AFFILIATIONS	
Quantum Security Alliance-Contributor	2018 to Present
Reuters Researcher ID: B-8496-2013	2013 to Present
Open Researcher and Contributor ID (ORCID) member	2013 to Present
Academy of Management	2012 to Present
Ambassador, American Military University City Club of Washington DC	2009 to Present 2000 to 2019
Treasurer, National Military Intelligence Association, Potomac Chapter	2001 to 2006
Reserve Officers Association	Life Member
Veterans of Foreign Wars, Post 9972	Life Member
The Military Order of the World Wars, Life Member, Board Member	Life Member
American Legion, Post 0364	Life Member
Senior Staff Advisor, National Defense Political Action Committee	2002 to 2004
Humanitarian Aid, Medical Equipment, Vietnam	1999 to 2005
National Defense Industrial Association	2000 to Present
Buffalo Soldiers 9&10 th (Horse) Calvary Association	2009 to Present
PROFESSIONAL CERTIFICATIONS	
CITI Certification-Social and Behavioral Responsible Conduct of Research-Record ID 32615527	2019
CITI Certification-Biomedical Responsibility Conduct of Research Record ID-32615526	2019
CITI Certification-Humanities Responsible Conduct of Research Record ID-32615528	2019
CITI Certification-Human Subjects Research Faculty-Record ID 32615524	2017
Collaborative Institutional Training Initiative (CITI Certification)-Human Subject Research	2017
Contracting Officer's Technical Representative, Defense Acquisition University	2009
Biological, Chemical, Nuclear, Radiological, and High Yield Explosives, Uniformed Services University	2008
Nuclear, Radiological, and High Yield Explosive, Uniformed Services University of the Health Sciences	2007
Bioterrorism and Homeland Security, Uniformed Services University of the Health Sciences	2007
Electronic and Technical Surveillance, National Technical Investigators' Association	2007
Chemical Warfare and Emergency Management, Uniformed Services University of the Health Sciences	2006
Rotorway Helicopter Construction, Rigging and Maintenance, Chandler, AZ	1996
Private Pilot's License Cert#2454351 Federal Aviation Administration	1991
Certificate of Management, Franklin Pierce College, Rindge, NH	1992

2015-2019 Continuing Education/Professional Development

Date	Event	Location
Feb 11,	Moving America: "How Policy Makers, can Accelerate	Washington, DC

2019	Automation in Freight Transportation”- Information and Technology Foundation, Attendee	
Mar 28, 2019	Genius Machines Summit – DefenseOne, Attendee	Washington, DC
Mar 2019	Integrating Unmanned Systems and AI into International Law Enforcement Environments - U.S. Department of State, International Narcotics and Law Enforcement, Attendee	Washington, DC
Apr 12, 2019	11 th Annual Conference on Homeland and International Security – CALU, Attendee	California, PA
May 14, 2019	Artificial Intelligence and the Human Race...Can They Co-Exist in Your Marketplace? CIO Summit-Integrating Autonomous Systems - Evanta/Gartner, Speaker and Attendee	Chicago, IL
May 15, 2019	9 th Annual Adobe Digital Government Symposium, Attendee	Washington, DC
May 21, 2019	Integrating Autonomous Systems; Artificial Intelligence and the Human Race...Can They Co-Exist in Your Marketplace? CIO Executive Summit - Evanta/Gartner, Speaker and Attendee	Washington, DC
May 22, 2019	Air Combat Evolution Demonstrated Trust Scalable Human Level Autonomy for Air Combat – DARPA, Strategic Technology Office, Attendee	Washington, DC
May 30, 2019	Integrating Autonomous Systems; Artificial Intelligence and the Human Race...Can They Co-Exist? Unmanned Aircraft Systems (UAV) East Symposium for Defense & Government, Speaker and Attendee	Arlington, VA
May 2019	Police Service-“Training procedures for seizing, transporting exploiting and storing suspects cellphones, laptops and notepads”, Author and Trainer	Trinidad and Tobago
Jun 2019	Co-Existing with Autonomous Systems and Your Data, Chief Data Officer (CDO) Summit - Evanta/Gartner, Speaker	Boston, MA
Jun 2019	U.S. Senate-The Role of Technology in Improving Human Security, The Hay Institute, Panelist	Washington, DC
Jul 9, 2019	Robotics Demonstration – Noblis, Attendee	Arlington, VA
Jul 31, 2019	CITI Program - Responsible Conduct of Research, Biomedical Responsible Conduct of Research Course 1,	Certification
Jul 31, 2019	CITI Program - Responsible Conduct of Research, Humanities Responsible Conduct of Research Course 1	Certification
Jul 31, 2019	CITI Program - Responsible Conduct of Research, Social and Behavioral Responsible Conduct of Research Course 1	Certification
Aug 2, 2019	U.S. House of Representatives-Cyber Security Working Group-Autonomous/Artificial Intelligence, Speaker	Washington, DC
Sep 28, 2019	Defense Forum Foundation – Congressional Defense and Foreign Policy Forum, Attendee	Washington, DC
Oct 4, 2019	Mission to Modernize: Strategies for Data-Driven Future – Broadcom, Attendee	Washington, DC
Oct 7, 2019	Doing Business with DoD and The Intel Community, Attendee	Washington, DC
Oct 8, 2019	The Modernization Roadmap – Next Gov, Attendee	Washington, DC
Oct 8, 2019	Insurance Industry-Autonomous System/AI and The Human Race, Can They Co-Exist in Your Marketplace? Evanta/ Gardner,	York, PA

	Speaker and Attendee	
Oct 16, 2019	CITI Program – Basic Refresher Course – Human Subjects Research, Manager Researchers	Certification
Oct 16, 2019	CITI Program – Basic Refresher Course – Human Subjects Research, Faculty	Certification
Oct 24, 2019	Accelerated AI, Attendee	Washington, DC
Oct 24, 2019	Government Acquisitions- Artificial Intelligence, Attendee	Cincinnati, OH
Oct 29, 2019	The Future of Work Government Summit - Government Executive, Attendee	Washington, DC
Nov 7, 2019	The China Gap; To Fight or Compete? Attendee	Washington, DC
Nov 14, 2019	Artificial Intelligence and the Human Race...Can They Co-Exist in Your Marketplace? CIO and CISO Executive Summit-Integrating Autonomous Systems - Evanta/Gartner, Speaker and Attendee	Milwaukee, WI
Nov 19, 2019	Artificial Intelligence and the Human Race...Can They Co-Exist in Your Marketplace? CIO and CISO Executive Summit-Integrating Autonomous Systems - Evanta/Gartner, Speaker and Attendee	Charlotte, NC
Nov 21, 2019	Infraguard Electromagnetic Pulse Special Interest Group (EMP-SIG) Summit, Attendee	Washington, DC
Dec 4, 2019	Artificial Intelligence and the Human Race...Can They Co-Exist in Your Marketplace? CIO and CISO Executive Summit-Integrating Autonomous Systems - Evanta/Gartner, Speaker and Attendee	Calgary, Canada
Dec 7, 2019	Infraguard EMP SIG Summit Critical Infrastructure Resilience, Attendee	Washington, DC
Dec 11, 2019	The Identity Governance Forum, Attendee	Washington, DC
Dec 17, 2019	Integrating Autonomous Systems: Artificial Intelligence and Your Government Cyber Enterprise, U.S. Senate, Cybersecurity Committee, Speaker	Washington, DC
	2018 Activities	
Feb 2018	"Where We're Going and Why We Should Care" - A Panel Discussion for EPP Graduates - Graduate School USA, Panelist	Washington, DC
Feb 2018	Drones - Uniquely Innovative Solutions for Today & Tomorrow: WDC Innovation & Entrepreneurship Forum - Wharton DC Innovation Series, Speaker and Attendee	Washington, DC
Mar 2018	Small Satellite Workshop, USGIF, Attendee	Springfield, VA
Apr 2018	"Unmanned Systems (UxS) for Defense & Government" Symposium, Technology Training Corporation, Speaker and Attendee	Arlington, VA
May 2018	Strategic Sourcing and Category Management at the Department of Homeland Security Seminar, Attendee	Washington, DC
May 2018	TIC Consortium Panel: Emerging Tech for Hybrid Warfare, Attendee	Alexandria, VA
Jul 2018	CIPAC, UAS Security Working Group Members, Department of Homeland Security, National Protection and Programs Directorate, Working Group Member	Washington, DC
Aug 2018	BlackHat/DEFCON USA 2018 Conference, Attendee	Las Vegas, NV

Aug 2018	BlackHat USA 2018 Conference, Car Hacking Hands On, Certificate	Las Vegas, NV
Nov 2018	CIPAC, UAS Security Working Group Members, Department of Homeland Security, National Protection and Programs Directorate, Working Group Member	Washington, DC
Nov 2018	“Integrating Autonomous Systems: Drones, AI and the Human Race, Can They Co-Exist?”, INFOWARCON, Speaker	Leesburg, VA
Nov 5, 2018	Patient Safety in a Digital World – Infraguard, Attendee	Washington, DC
Nov 8, 2018	3 rd Annual Government Empowered Conference, Attendee	Washington, DC
Dec 2018	Integrating Autonomous Systems; Artificial Intelligence and the Human Race...Can They Co-Exist in Your Marketplace? - CIO/CISO Executive Summit – Speaker	New Jersey
	2017 Activities	
May 2017	HVAC Certification, Northern Virginia Community College	Certification
2017	CITI Certification-Human Subjects Research Faculty	Certification
2017	CITI Certification-Human Subject Research	Certification
2017	GITEC Summit 2017, Attendee	Washington, DC
Sept 2017	Integrating Autonomous Systems; Drones-Artificial Intelligence and Humans-Can They Co-Exist? - Federal Executive Institute, Speaker	Charlottesville, VA
Sept - Oct 2017	Federal Executive Institute, Graduate	Charlottesville, VA
Nov 2017	Student Support Community “The Intersection of Drones-Cyber and IoT-The Balance of Security and Convenience” - Colorado Technical University (CTU), Technology Series, Speaker and Attendee	Colorado Springs, CO
Nov 2017	Autonomous Systems Infrastructure-Manned/Unmanned Teams and the Future of the US Military -JCS J2/Joint Reserve Intel Support Element (J2/JRISE) – Speaker	Washington, DC
Nov 2017	Evolving Critical Energy Security Requirements: Integrating Autonomous Systems; Drones-Artificial Intelligence and the Oil/Energy Sector-Can They Co-Exist? - American Chamber of Commerce, Speaker	Trinidad and Tobago
	2016 Activities	
Apr 2016	“Drone Wars” - INFOWARCON, Speaker and Attendee	Nashville, TN
Apr 2016	“Combining Non-Linear leadership to non-traditional educational methods” Association of Non-Traditional Students in Higher Education (ANTSHE), Speaker and Attendee	Washington, DC
Apr 2016	“Drones, UAVs, and Your Business Model - Can They Co-Exist? Wharton Innovation Summit 2016, Speaker and Panel Moderator	Washington, DC
Nov 2016	“Human Security II: Building Community and Police Teams to Protect and Serve Our Citizens”-9th Annual Homeland International Security, CAL U, Speaker	California, PA
	2015 Activities	
Feb 2015	Applying Complexity Leadership Theory to Drone Airspace Integration, INFOWARCON, Speaker	Nashville, TN
Mar 2015	Doctorate of Management with a concentration in homeland	Diploma

	security	
Jun 2015	Panelist-Cyber Maryland Summit-Panel discussing Cloud Continuous Monitoring, Cyber Maryland Summit, Panelist	Maryland
Aug 2015	Elected to the Board of Directors-Robotics and Unmanned Systems (UAS) Kansas State University	Kansas
Oct 2015	Webinar “Zero to a Billion or Bankrupt –How Using Outdated Leadership Will Kill Your Organization”, Speaker	Virtual
Oct 2015	Video interview for Cyber Blog-Drones-Friend or Foe in the Wireless Workplace	Virtual
Oct 2015	“Autonomous Theories-UAV Systems-Training to Obtain Goals-Not Just Swarm” – Inter-Agency Seminar Group (IAS) at Brookings Institute, Speaker and Attendee	Washington DC