

2019 AIRCRAFT SURVIVABILITY SYMPOSIUM

Evolving Today's Force to Dominate Tomorrow's Threat

November 5 – 7 | Monterey, CA | NDIA.org/Aircraft19



WHO WE ARE

The National Defense Industrial Association is the trusted leader in defense and national security associations. As a 501(c)(3) corporate and individual membership association, NDIA engages thoughtful and innovative leaders to exchange ideas, information, and capabilities that lead to the development of the best policies, practices, products, and technologies to ensure the safety and security of our nation. NDIA's membership embodies the full spectrum of corporate, government, academic, and individual stakeholders who form a vigorous, responsive, and collaborative community in support of defense and national security. NDIA is proud to celebrate 100 years in support of our warfighters and national security. The technology used by today's modern warfighter was unimaginable 100 years ago. In 1919, BG Benedict Crowell's vision of a collaborative team working at the intersection of science, industry, government, and defense began what was to become the National Defense Industrial Association. For the past century, NDIA and its predecessor organizations have been at the heart of the mission by dedicating their time, expertise, and energy to ensuring our warfighters have the best training, equipment, and support. For more information, visit **NDIA.org**



COMBAT SURVIVABILITY DIVISION

WHO WE ARE

NDIA's Combat Survivability Division addresses all aspects of susceptibility reduction (probability of hit), vulnerability reduction (consequences of hit), and the overall survivability discipline, including countermeasures, signature reduction, tactics and training, camouflage,

concealment, and deception, as well as damage resistance, damage tolerance, and combat damage repair. The Division also focuses on the transfer of information and technology between the military survivability and civil aviation communities to improve flight safety and to mitigate the effects of terrorist acts.

LEADERSHIP AND COMMITTEES

Barry Vincent Symposium Chair

Dr. Mark Couch Vice Chair

Robert Gierard Awards Committee Chair

Amy Howell Secretary

Ron Dexter Poster Chair

Gary Wollenweber Tutorial Chair



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SCHEDULE AT A GLANCE

TUESDAY, NOVEMBER 5

OPTIONAL TUTORIAL DAY Naval Postgraduate School Ingersoll Hall 8:00 am – 5:00 pm

NETWORKING RECEPTION Hyatt Regency Monterey Spyglass Rooms 1 & 2 6:00 – 7:30 pm

WEDNESDAY, NOVEMBER 6

SYMPOSIUM DAY 1 Naval Postgraduate School King Hall 8:00 am – 3:10 pm

AWARD CELEBRATION SOCIAL EVENT A Taste of Monterey 4:30 – 7:00 pm

THURSDAY, NOVEMBER 7

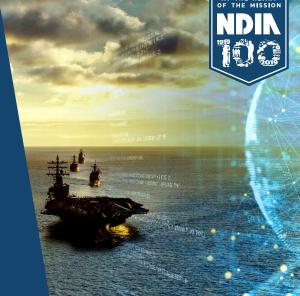
SYMPOSIUM DAY 2 Naval Postgraduate School King Hall 8:00 am – 4:00 pm

AWARDS PRESENTATION AND LUNCHEON

Naval Postgraduate School Herrmann Hall 11:20 am – 1:20 pm

2020 **PACIFIC OPERATIONAL SCIENCE & TECHNOLOGY** (POST) CONFERENCE

Forward Together – Strengthening Partnership, Presence, and Military Readiness



EVENT INFORMATION

LOCATIONS

TUTORIALS & SYMPOSIUM Naval Postgraduate School

TUESDAY RECEPTION

Hyatt Regency Monterey 1 Old Golf Course Road Monterey, CA 93940

WEDNESDAY RECEPTION

A Taste of Monterey 700 Cannery Row, Ste. KK Monterey, CA 93940

SURVEY AND PARTICIPANT LIST You will receive via email a survey and list of participants (name and organization) after the symposium. Please complete the survey to help make our event even more successful in the future.

Tatiana Jackson

tjackson@NDIA.org

Program Manager, Divisions

EVENT CONTACTS

Jessica Lewton Meeting Planner jlewton@NDIA.org

Barry Vincent

Symposium Chair

Dr. Mark Couch

Chris Adams

Symposium Vice Chair

Symposium Planning

1 University Circle

Monterey, CA 93943

PLANNING COMMITTEE Ron Dexter Poster Chair

Robert Gierard Awards Chair

Amy Howell Secretary/Session Chair

Ken McKenzie Session Chair

In lieu of speaker gifts, a donation is being made to the Fisher House Foundation.

Jack Rau Session Chair

Andrew Smith Session Chair

Gary Wollenweber Tutorial Chair

SPEAKER GIFTS

HARASSMENT STATEMENT

NDIA is committed to providing a professional environment free from physical, psychological and verbal harassment. NDIA will not tolerate harassment of any kind, including but not limited to harassment based on ethnicity, religion, disability, physical appearance, gender, or sexual orientation. This policy applies to all participants and attendees at NDIA conferences, meetings and events. Harassment includes offensive gestures and verbal comments, deliberate intimidation, stalking, following, inappropriate photography and recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome attention. Participants requested to cease harassing behavior are expected to comply immediately, and failure will serve as grounds for revoking access to the NDIA event.

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NDIA has a policy of strict compliance with federal and state antitrust laws. The antitrust laws prohibit competitors from engaging in actions that could result in an unreasonable restraint of trade. Consequently, NDIA members must avoid discussing certain topics when they are together at formal association membership, board, committee, and other meetings and in informal contacts with other industry members: prices, fees, rates, profit margins, or other terms or conditions of sale (including allowances, credit terms, and warranties); allocation of markets or customers or division of territories; or refusals to deal with or boycotts of suppliers, customers or other third parties, or topics that may lead participants not to deal with a particular supplier, customer or third party.

POSTER PRESENTERS & DISPLAYS

High Energy Laser M&S Development for Blue System Survivability (MSAS) **Ron Dexter** SURVICE

CENA Probe System for Improved Tier 1 Inspection on Low Observable Aircraft Dr. Daniel Faircloth **IERUS** Technologies

Toward Rapid and Accurate Tier II Inspection Using the Open System **Configurable Architecture Radar** (OSCAR) Dr. Daniel Faircloth **IERUS** Technologies

Highly Accurate Coating Thickness Measurement for Weapon System Survivability Dr. Bryan Foos AFRL/RXCA



THIS EVENT IS CLASSIFIED AS SECRET//NOFORN

TUESDAY, NOVEMBER 5 – OPTIONAL TUTORIAL DAY

7:00 am - 5:00 pm **REGISTRATION OPEN**

INGERSOLL HALL FOYER

CONTINENTAL BREAKFAST 7:00 - 8:00 am INGERSOLL HALL FOYER

WELCOME REMARKS 8:00 - 8:15 am

INGERSOLL HALL

Gary Wollenweber IR Consulting Engineer, GE Aviation Tutorial Chair, Combat Survivability Division, NDIA

NAWCWD Weapons Survivability Lab **Ray Hocker**

NAWCWD 4.1.8

Joint Aircraft Survivability Programs Dennis Lindell JASP

Reticulated Foam and Its Impact on Fuel Tank Vulnerability Alexander Moran 704th Test Group

Defense Systems Information Analysis Center Michael Schuck SURVICE

Aircraft Survivability Against High Power Radio Frequency/ Microwave-Directed Energy Weapons John Tatum SUBVICE

Cyber Combat: A New Threat to Aircraft Survivability Austin Weinman Naval Postgraduate School

Balancing Performance, Scheduling, and Cost for Rapid Prototyping, Experimentation, and **Demonstration Programs Using** M&S Justin Woulfe Svstecon

8:15 – 9:45 am FUNDAMENTALS OF AIRCRAFT COMBAT SURVIVABILITY

INGERSOLL HALL

Chris Adams Senior Lecturer, Naval Postgraduate School

Dr. Mark Couch

Research Staff Member, Institute of Defense Analysis Vice Chair, Combat Survivability Division, NDIA

- 9:45 10:15 am NETWORKING BREAK INGERSOLL HALL FOYER
- 10:15 11:30 am FUNDAMENTALS OF AIRCRAFT COMBAT SURVIVABILITY, CONT'D INGERSOLL HALL
- 11:30 am 1:00 pm **LUNCH ON OWN**
- 1:00 1:15 pm INTRODUCTORY REMARKS

INGERSOLL HALL

Gary Wollenweber

IR Consulting Engineer, GE Aviation Tutorial Chair, Combat Survivability Division, NDIA

1:15 – 2:45 pm WEAPON SYSTEM AND PLATFORM CYBERSECURITY FUNDAMENTALS INGERSOLL HALL

Dr. Bill "Data" Bryant Systems Security Engineer, Modern Technology Solutions, Inc.

Col William '\$' Young, Jr. Special Advisor to USAF Warfare Center Commander, U.S. Air Force

- 2:45 3:15 pm NETWORKING BREAK INGERSOLL HALL FOYER
- 3:15 5:00 pm WEAPON SYSTEM AND PLATFORM CYBERSECURITY FUNDAMENTALS CON'T INGERSOLL HALL
- 6:00 7:30 pm NETWORKING RECEPTION HYATT REGENCY MONTEREY, SPYGLASS ROOMS 1 & 2



WEDNESDAY, NOVEMBER 6

7:00 am – 3:35 pm **REGISTRATION OPEN** KING HALL FOYER

7:00 – 8:00 am CONTINENTAL BREAKFAST KING HALL PATIO

8:00 – 8:45 am WELCOME AND INTRODUCTORY REMARKS KING HALL

Barry Vincent Senior Lead Engineer, Booz Allen Hamilton Symposium Chair, Combat Survivability Division, NDIA

BG Stephen Mundt, USA (Ret) Chair, Combat Survivability Division, NDIA

VADM Ann E. Rondeau, USN (Ret), Ed.D President, Naval Postgraduate School

8:45 – 9:30 am **GOVERNMENT KEYNOTE ADDRESS** KING HALL

MG Tim Gowen, ARNG Deputy Commanding General, Army Futures Command

- 9:30 am 3:00 pm **POSTER AND DISPLAY HALL OPEN** KING HALL LOWER LEVEL AND PATIO
- 9:30 10:00 am NETWORKING BREAK KING HALL LOWER LEVEL AND PATIO

SESSION 1 – CYBER

10:00 – 10:10 am INTRODUCTION TO SESSION

KING HALL

Jack Rau

Chief Analyst, Boeing Phantom Works Session Chair, Combat Survivability Division, NDIA

10:10 - 10:35 amCYBER RESILIENCY AS A KEY ELEMENT OF HOLISTIC
AIRCRAFT SURVIVABILITY

KING HALL

Tom Barnett

Lead, Cyber Technology Integration Lead, PEO Aviation

CYBER MODEL-BASED ENGINEERING IN AIRCRAFT 10:35 - 11:00 am SURVIVABILITY ANALYSIS

KING HALL

Ambrose Kam Fellow, Lockheed Martin Corporation

CYBER RISK FROM THE COCKPIT TO THE MAINTAINER -11:00 - 11:25 am PLATFORM CYBER LESSONS LEARNED **KING HALL**

Dr. David Bibighaus Principal, Booz Allen Hamilton

IMPROVING AIRCRAFT COMBAT SURVIVABILITY 11:25 - 11:50 am THROUGH CYBERSECURITY

KING HALL

Michael Overstreet Senior Cybersecurity Manager, Cisco

- 11:50 am 1:05 pm **NETWORKING LUNCH** HERRMANN HALL
- 1:05 1:15 pm RECONVENE KING HALL

SESSION 2 – CYBER

INTRODUCTION TO SESSION 1:15 - 1:25 pm

KING HALL

Amy Howell Director, F-35 Development, Lockheed Martin Aeronautics Session Chair and Secretary, Combat Survivability Division, NDIA

FOUNDATIONS OF CYBER-SURVIVABLE WEAPON SYSTEMS AND MISSIONS 1:25 - 1:50 pm **KING HALL**

Dr. Joshua Edmision

System Architect, Northrop Grumman Corporation

ENABLING AIRCRAFT SURVIVABILITY THROUGH VIRTUALIZATION 1:50 - 2:15 pm Will Abele Director, Embedded Research, Star Lab Corporation



2:15 – 2:45 pm **NETWORKING BREAK** KING HALL LOWER LEVEL AND PATIO

2:45 – 3:10 pm AIRCRAFT CYBER COMBAT SURVIVABILITY Dr. Bill "Data" Bryant Systems Security Engineer, Modern Technology Solutions, Inc.

4:30 – 7:00 pm **NETWORKING RECEPTION AND AWARDEE CELEBRATION**

OFF-SITE LOCATION: A TASTE OF MONEREY

SPONSORED BY

AVX/L3Harris

Purchase of an additional ticket required for all attendees and guests; may be purchased during registration process



- 7:00 am 4:00 pm **REGISTRATION OPEN** KING HALL FOYER
- 7:00 8:00 am CONTINENTAL BREAKFAST KING HALL PATIO
- 8:00 8:15 am WELCOME AND ADMINISTRATIVE REMARKS KING HALL

Barry Vincent Senior Lead Engineer, Booz Allen Hamilton Symposium Chair, Combat Survivability Division, NDIA

8:15 – 9:00 am INDUSTRY KEYNOTE ADDRESS KING HALL

Mark Wilson

COO, Rolls-Royce Liberty Works

SESSION 3 – THREATS AND OPERATIONS

9:00 – 9:10 am INTRODUCTION TO SESSION

KING HALL

Andrew Smith

Director, Survivability Technologies, Rolls-Royce North American Technologies, Inc. Session Chair, Combat Survivability Division, NDIA

9:10 – 9:35 am MODERN RADAR-GUIDED SAM TRENDS

KING HALL

Riley Freelove

Electronics Engineer, Defense Intelligence Agency/Missile and Space Intelligence Center

9:35 – 10:05 am **NETWORKING BREAK**

KING HALL LOWER LEVEL AND PATIO

10:05 - 10:30 am OVERVIEW OF EMERGING THREATS AGAINST UNMANNED AND THE UNIQUE CHALLENGES WE FACE

KING HALL

Mike Atwood Senior Director, Advanced Programs, Aeronautical Systems, General Atomics

10:30 – 10:55 am ANALYSIS OF NOVEL VHF SURVEILLANCE RADAR KING HALL

Kevin Tibbetts

Technical Staff, MIT Lincoln Laboratory

10:55 – 11:20 am AC-130W INFRARED SUPPRESSOR IR GROUND AND FLIGHT MEASUREMENTS WITH LIBRA ANALYSIS (U) KING HALL

Nicholas Metzger

IRSS Technical Specialist, Rolls-Royce North American Technologies, Inc.

11:20 am – 1:20 pm AWARDS LUNCHEON

HERRMANN HALL

Robert Gierard

Director, Operations Analysis, Space and Airborne Systems, Raytheon Company Awards Chair, Combat Survivability Division, NDIA

Combat Survivability Award for Lifetime

Achievement

Neal Brune

Vice President, Countermeasures Business Development, Armtec Countemeasure Company, Esterline Defense Technologies

RADM Robert H. Gormley Combat Survivability Award for Leadership Gary Wollenweber

IR Consulting Engineer, GE Aviation Tutorial Chair, Combat Survivability Division, NDIA

Combat Survivability Award for Technical Achievement

James Rhoads Research Staff, Institute for Defense Analyses

Young Professional Award for Combat Survivability Laura Ross

Technical Staff, MIT Lincoln Laboratory

1:20 - 1:30 pm

RECONVENE KING HALL



SESSION 4 – SURVIVABILITY CONSIDERATIONS FOR EMERGING THREATS

1:30 – 1:40 pm INTRODUCTION TO SESSION

Ken McKenzie

KING HALL

Program Manager for the OSD Strategic Capabilities Office, MTSI Session Chair, Combat Survivability Division, NDIA

1:40 – 2:05 pm AIRCRAFT SURVIVABILITY AGAINST HIGH POWER RADIO FREQUENCY/ MICROWAVE-DIRECTED ENERGY WEAPONS KING HALL

John Tatum

Senior Electronics Engineer, SURVICE Engineering Company

2:05 – 2:30 pm LIGHTWEIGHT MULTI-FUNCTIONAL STRUCTURAL COMPOSITE WITH INTEGRATED ELECTROMAGNETIC SHIELDING

KING HALL

Harry Richard Luzetsky SME, Survivability and Composites Technology, SURVICE Engineering Company

2:30 – 3:00 pm NETWORKING BREAK KING HALL LOWER LEVEL AND PATIO

KING HALL LOWEN LEVEL AND FAILO

3:00 – 3:25 pm PASSIVE SURVEILLANCE TESTING

KING HALL

Amy Watson Software Developer, MIT Lincoln Laboratory

3:25 – 3:50 pm ENHANCING U.S. 4TH-GEN FIGHTERS AGAINST CURRENT THREATS KING HALL

Sadia Hoq Technical Staff, MIT Lincoln Laboratory

3:50 – 4:00 pm CLOSING REMARKS

KING HALL

Barry Vincent

Senior Lead Engineer, Booz Allen Hamilton Symposium Chair, Combat Survivability Division, NDIA

4:00 pm SYMPOSIUM ADJOURNS

BIOGRAPHIES



MARK WILSON

Chief Operating Officer Rolls-Royce Liberty Works

Mark Wilson is the Chief Operating Officer (COO) for Rolls-Royce North American

Technologies, Inc., (aka LibertyWorks®), having held this position since 2010. The primary mission of LibertyWorks is to create an agile, entrepreneurial team that excels at developing innovative, affordable power system solutions that enable Rolls-Royce to provide segment-leading solutions for our U.S. Defense customers. Mark joined Rolls-Royce in 1982 and has moved through a series of engineering leadership positions over the past 37 years. Prior to his role leading LibertyWorks, he was Chief Engineer - JSF LiftSystem®, leading the development of the Rolls-Royce LiftSystem for the F-35B through qualification for flight test. Prior to that, Mark was the Rolls-Royce Chief Engineer for the F136 engine as part of the partnership with GE, and, before that, he was the Chief Engineer for Defense Engines, managing the indevelopment and in-service engine fleet. Mark holds a Bachelor of Science degree in Aerospace Engineering from the New York Institute of Technology. In 2010, he completed the Global 2020 Executive Leadership Program from the Dartmouth College Tuck School of Business and then, in 2017, he completed the Columbus Leadership Program from the University of Oxford Said Business School. Mark is currently Board Member of MxD (Manufacturing x Digital), one of the Manufacturing USA Institutes.



MG TIM GOWEN, ARNG

Deputy Commanding General Army Futures Command

Major General Timothy Gowen was appointed as the 30th Adjutant General

of Maryland, effective September 1, 2019. The Adjutant General is responsible for the daily operations of the Maryland Military Department, which includes the Maryland Army National Guard, Maryland Air National Guard, Maryland Emergency Management Agency, and Maryland Defense Force. Major General Gowen is a senior advisor to the governor and is responsible for the readiness, administration, and training of more than 6,700 members of the Military Department. He serves as the official channel of communication between the governor and the National Guard Bureau, and is a member of the governor's cabinet.

Major General Gowen was most recently assigned as the ARNG Deputy Commanding General of the newly established Army Futures Command in Austin, Texas. There, he was responsible for oversight and strategic guidance to the Army National Guard acquisition community and to oversee National Guard equities throughout the Army modernization system. He served as the Assistant Adjutant General - Army for the Maryland National Guard between April 2015 and September 2018, and was responsible for the readying, training, and equipping of more than 4,700 Soldiers for State and Federal missions. Major General Gowen also held a "dual-hat" position as Deputy Commanding General for Army National Guard at the United States Aviation Center of Excellence, Fort Rucker, Alabama.

Major General Gowen was commissioned as a Distinguished Military Graduate in 1986 through the Reserve Officer Training Corp program at Embry-Riddle Aeronautical University with a degree in Aeronautical Science. He has engineering degrees from Temple University and the University of Maryland. He is a Senior Army Aviator and a graduate of the United States Naval Test Pilot School and U.S. Army War College.

Before his appointment to Adjutant General for Maryland, Major General Gowen was a U.S. Government Civil Servant employed by the Department of the Navy at Patuxent River Naval Air Station, Maryland. There, he served as an aerospace engineer for the Naval Air Systems Command. He has more than 24 years of government acquisition experience to include systems engineering, research and development, test and evaluation, science and technology, and program management.

THANK YOU TO OUR TUESDAY NETWORKING RECEPTION SPONSOR



TUTORIALS



TUTORIAL 1: Fundamentals of Aircraft Combat Survivability

Chris Adams

Senior Lecturer, Naval Postgraduate School

Dr. Mark Couch

Research Staff Member, Institute of Defense Analysis Vice Chair, Combat Survivability Division, NDIA

This tutorial is an introduction to the aircraft combat survivability discipline. It will present history, terminology, concepts, measures, threats and threat effects, and methodology for assessing non-nuclear combat survivability analysis and design of both fixed-wing and rotary-wing aircraft. The methodologies discussed will also be applicable to unmanned air systems (UAS), missiles, ships, and ground vehicles. It is based on the AIAA textbook "The Fundamentals of Aircraft Combat Survivability Analysis and Design", 2nd edition, by Dr. Robert Ball. Specific topics include: Overview of the Fundamentals, Historical Perspective, Survivability Assessment, Designing for Survivability, Survivability Modeling and Simulation, and Testing for Survivability. This tutorial is intended for the newcomer to the survivability discipline as an engineer, tester, maintainer or manager or first-time attendee at the Aircraft Survivability Symposium.

Mr. Christopher Adams is a lecturer at the Naval Postgraduate School's (NPS) department of Mechanical and Astronautical Engineering. He is a retired Navy Commander and the former Associate Dean of the Graduate School of Engineering and Applied Sciences at the Naval Postgraduate School in Monterey, CA having served in that position for over 3 years. Mr. Adams has had numerous tours flying F-14 Tomcats, and EA-6B Prowlers for the Navy. Mr. Adams regularly teaches the three day Aircraft Combat Survivability Short Course. Mr. Adams has a M.S. in Aerospace Engineering from the Naval Postgraduate School.

Dr. Mark Couch completed three operational tours with Helicopter Mine Countermeasures Squadrons accumulating 1500 flight hours in the RH-53D and MH-53E aircraft with 300 hours under tow conducting mine countermeasures operations. He received a Doctorate in Aeronautical and Astronautical Engineering in 2003 from the Naval Postgraduate School while serving as a faculty member in the Department of Aeronautics and Astronautics. He currently assesses Aircraft Survivability features and performance in his role at IDA.

TUTORIAL 2: Weapon Systems and Platform Cybersecurity Fundamentals

Dr. Bill "Data" Bryant Systems Security Engineer, Modern Technology Solutions, Inc.

Col William '\$' Young, Jr. Special Advisor to USAF Warfare Center Commander, U.S. Air Force

Modern and legacy weapon systems are completely reliant upon cyberspace enabled capabilities to be effective in accomplishing their missions but, cyber-attacks are increasingly calling into question the ability of our principal weapon systems to function effectively in a cyber-contested environment. Traditional attacks against command and control and logistics systems are expected and that fight will take place in the traditional portions of cyberspace, but weapon systems such as aircraft are also full of computing systems that can be attacked. These systems utilize different technology, operating concepts, and timelines that make traditional IT defenses not effective in this space.

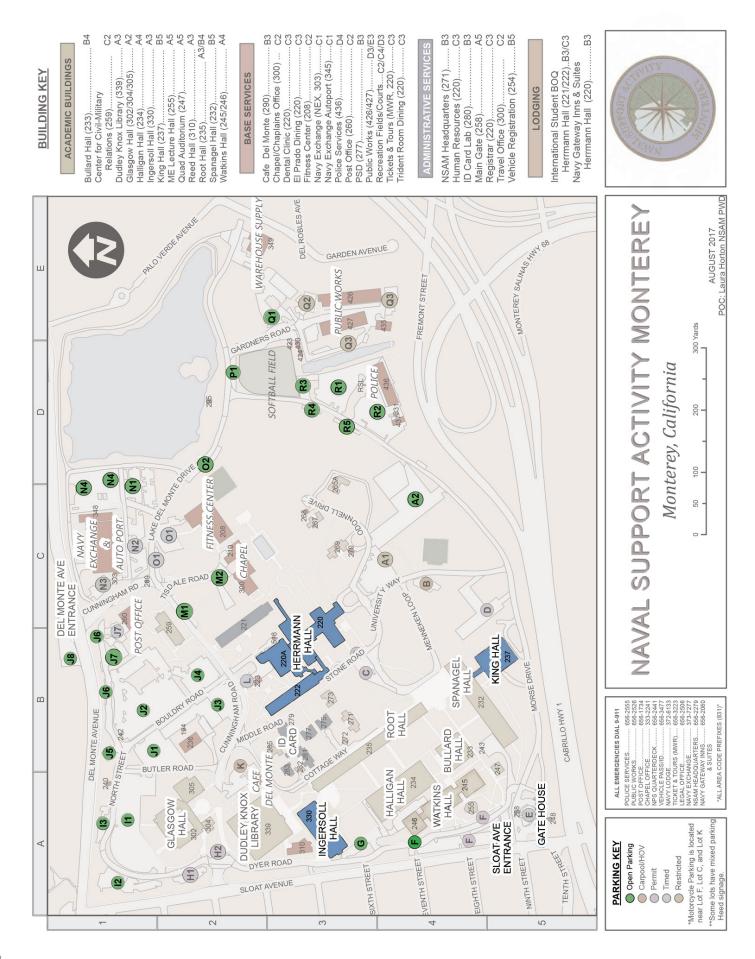
This tutorial is aimed at non-cyber focused engineers and engineering managers and will

start by demystifying the cyberspace domain, the way that computing devices actually work, common cyberspace defenses, and some common attacks. The tutorial will describe the advantages of doing cybersecurity analysis earlier in the lifecycle by an overview of a powerful analysis technique. The tutorial will next extend traditional Aircraft Survivability concepts and tools into cyberspace by introducing Aircraft Cyber Combat Survivability that is currently in development. The tutorial will conclude with weapon systems cybersecurity within current acquisition rules.

Dr. Bill "Data" Bryant is a cyberspace defense and risk leader with a diverse background in operations, planning, and strategy. He is a thought leader in the cyber defense of weapon systems and other non-traditional cyber-physical systems with multiple published works coupled with numerous operational and strategic assignments building these capabilities in complex organizations. Dr. Bryant has an unusually diverse background including more than 25 years in the Air Force where he was a fighter pilot, planner, and strategist. He helped create Task Force Cyber Secure and served as its deputy director; he also served as the Air Force deputy Chief Information Security Officer and developed and successfully implemented numerous proposals and policies to improve the cyber defense of weapon systems.

Col. William "\$" Young, Jr. is an accomplished strategist and leader with 28 years in the United States Air Force. He currently serves as the Special Advisor to the US Air Force Warfare Center Commander for Spectrum Warfare. He recently commanded the 53rd Electronic Warfare Group (EWG) at Eglin Air Force Base. The 53 EWG is responsible for the secure development, testing, and distribution for nearly all mission data software supporting USAF combat aircraft. Colonel Young possesses a PhD in Engineering Systems from MIT. Col. Young is also a Military Fellow and consultant for MIT Lincoln Laboratory for the lab's Cyber System Assessments Group.





NDIR 102

SAVE THE DATE 2020 NDIA JOINT

ARMAMENTS AND ROBOTICS CONFERENCE & EXHIBITION

Advancing Combat Lethality

Join NDIA's Armaments and Robotics Divisions at this inaugural event for briefings, speeches, exhibits, and demonstrations that investigate the full spectrum of capabilities within armament and robotic systems. You won't want to miss this future-focused, hands-on opportunity to explore nextgeneration technologies that will serve as critical force multipliers on the multi-domain battlefield.

April 27 – 30 | Columbus, GA | NDIA.org/JARCE20



GIVING THE ARMY AN EDGE

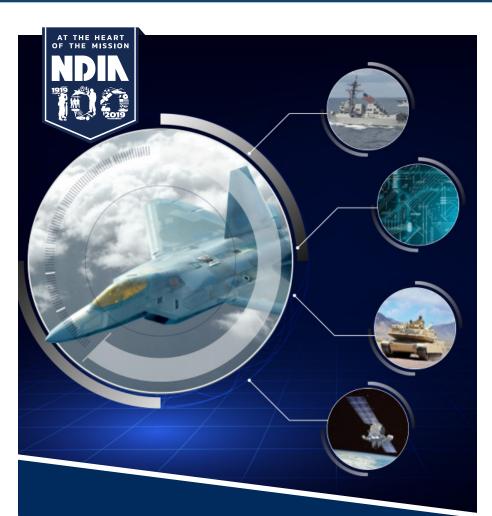
The U.S. Army seeks its next-generation aircraft and the AVX Aircraft and L3Harris compound, coaxial helicopter (CCH) answers all requirements with a mindset to exceed. Our cutting-edge technologies provide faster, lighter and more lethal capability.

Designed to defeat tomorrow's threats.

#FARACCH Lethal. Survivable. Affordable.



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2020 AIRCRAFT SURVIVABILITY SYMPOSIUM

SAVE THE DATE

Aircraft Survivability in Multi-Domain Operations

Join military, government, industry, and academic leaders for technical discussions about emerging technologies and combat lessons learned as they relate to the aircraft survivability community. Hosted at the Naval Postgraduate School, this three-day symposium's classified venue offers a unique opportunity to foster innovation and conversation through tutorials, presentations, keynotes, and collaboration.

November 3 – 5 | Monterey, CA | NDIA.org

