NAVAL SPACE SUMMIT
9-11 July 2024
“Critical Capabilities for the Next War”
From the Under Secretary of the Navy

On behalf of the Secretary of the Navy, welcome to the second annual Naval Space Summit. Thank you for making this event a priority and joining here together at the Naval Postgraduate School (NPS) in beautiful Monterey, California.

I want to extend a sincere thank you to Vice Admiral Ann Rondeau (Ret.), Vice Admiral Karl Thomas, and their teams for putting together this critical forum for addressing today’s threats and tomorrow’s strategic challenges.

Last year’s inaugural Naval Space Summit focused on challenges to, and opportunities for, current and future naval operations in the space domain. Building on these tenets, we are focusing on strengthening our warfighting capabilities from undersea to space. The theme of this year’s Naval Space Summit is:

“Critical Capabilities for the Next War”

This Summit will bring together senior leaders — leveraging their knowledge and vision — for a focused dialogue on space capabilities as force multipliers. Space is a rapidly evolving warfare domain that may prove to be the most important to the Joint Force. Without space capabilities, our naval forces face significant risk while conducting critical missions around the globe. There is an ever-increasing demand for military and commercial space capabilities to support naval operations as our nation, and our Allies and partners, face adversaries that have both the capability and capacity to hold our forces at risk from ever greater distances.

Recognizing the dynamic progress of the militarization and commercialization of space, the topics and speakers have been selected to facilitate high-level discussions about space-related naval force manning, training, equipping, resourcing, and warfighting. With that in mind, the themes for the next three days are:

Day 1 — Naval, Civil, and Commercial Space – Technology Partners
Day 2 — Naval Space Capability Supporting Distributed Maritime Operations
Day 3 — DoD Space and C-C5ISR in Support of Maritime Operations

Thank you again for joining us, and thank you to the presenters for their work and dedication in advancing national security through new, resilient designs in the space domain.

Sincerely,

Erik K. Raven
Under Secretary of the Navy

Schedule of Events
Naval Space Summit 2024 | Monterey, California

Day 1 | TUESDAY, 9 JULY 2024

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<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
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<td>0700</td>
<td>Registration in King Hall</td>
<td>OPNAV, N2N6</td>
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<tr>
<td>0745</td>
<td>Introduction &amp; Welcome</td>
<td>VADM Karl Thomas, USN</td>
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<tr>
<td>0800</td>
<td>Naval Postgraduate School Space Education and Programs</td>
<td>VADM Ann E. Rondeau, USN (Ret.)</td>
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<td>0800</td>
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<td>Dr. Jim Newman, Dr. Clay Moltz, Dr. Wenschel Lan</td>
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<td>Maj Dillon Pierce, LT Conor Murtha</td>
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<td>LT Jeremy Lopez-Vazquez, LT Charles Bibbs</td>
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<td>0845</td>
<td>US-Allied Space Collaboration</td>
<td>CAPT Adam Walker, USN</td>
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<td>0930</td>
<td>U.S. Space Force Commercial Space Office</td>
<td>Mr. Steve “Bucky” Butow</td>
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<tr>
<td>1030</td>
<td>Defense Space Technology Update</td>
<td>Mr. Jeremy Leader</td>
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<tr>
<td>1115</td>
<td>LUNCH — provided by the Naval Postgraduate School Foundation</td>
<td>Mr. Steve “Bucky” Butow</td>
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<td>MIU Space</td>
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<td>1330</td>
<td>Naval Space R&amp;D/S&amp;T Update</td>
<td>Mr. Bernard Kelm</td>
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<td>1430</td>
<td>Space Acquisition Support to the Warfighter</td>
<td>RADM Douglas Small, USN</td>
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<td>1520</td>
<td>Day 1 Wrap Up /Due-Outs / Tasked Stakeholders</td>
<td>OPNAV N2N6</td>
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<tr>
<td>1645</td>
<td>No-Host Social — All Invited</td>
<td>Trident Room/Rose Garden</td>
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**Day 2**  
**WEDNESDAY, 10 July 2024**

**Location:**  
Bldg. 302: Glasgow Hall, Room 102 (TS/SCI)

**Theme:**  
Naval Space Capability Supporting Distributed Maritime Operations

**Audience:**  
USN & USMC GO/FO/SES, AOs, MSOs

**Day 2 Schedule of Events**

**0700 – 0745**  
Registration in Glasgow Hall, Room 115 (Operations Center)

**0745 – 0800**  
Introduction and Welcome  
VADM Karl Thomas, USN

**0800 – 0830**  
Under Secretary of the Navy Opening Remarks  
The Honorable Erik K. Raven

**0830 – 0900**  
Space Support to Joint & Naval Acquisition  
Col Eric Felt, USSF

**0900 – 0945**  
Space Force Design Update  
Dr. Russell Partch

**0945 – 1005**  
BREAK

**1005 – 1050**  
Proliferated Warfighter Space Architecture  
Mr. Dan Hanna

**1050 – 1130**  
National Support to Title 10 Operations  
Dr. Didi Kuo

**1130 – 1300**  
LUNCH - provided by the Naval Postgraduate School Foundation

**1300 – 1345**  
Keynote: Space Operational Plans & Challenges  
Gen. Stephen N. Whiting, USSF

**1345 – 1430**  
Tactical Edge Targeting/Long Range Fires Update  
Ms. Kelly McCool

**1430 – 1510**  
USMC Space Support to Naval Operations  
HQMC-CD&I TBA / LtCol Michael Golchert

**1510 – 1530**  
BREAK

**1530 – 1630**  
Panel: Warfighting Dependencies on Space  
Moderator: VADM Karl Thomas, USN

**1630**  
Day 2 Wrap-Up / Due Outs / Tasked Stakeholders  
VADM Karl Thomas, USN

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**Day 3**  
**THURSDAY, 11 July 2024**

**Location:**  
Bldg 302: Glasgow Hall Basement, Classroom 3 & 4, Room E8-06 (SAP)

**Theme:**  
DoD Space and C-ISR in Support of Maritime Operations

**Audience:**  
Cleared USN & USMC GO/FO/SES, AOs, MSOs

**Day 3 Schedule of Events**

**0730 – 0800**  
Registration in Glasgow Hall, Room 115 (Operations Center)

**0800 – 0815**  
Administrative / Security Briefing  
Mr. Brian Howes

**0815 – 0830**  
Introduction and Welcome  
The Honorable Erik K. Raven

**0830 – 0915**  
Keynote: Space Capabilities for the Next War  
Lt. Gen. Douglas A. Schiess, USSF

**0915 – 0945**  
DoD Off / Def Space Ops Update  
USSF TBA

**0945 – 1005**  
BREAK

**1005 – 1050**  
Fleet Space Capabilities, Authorities & Challenges  
CAPT David Tebbe, USN

**1050 – 1130**  
Classified Topic  
CAPT Alan Brechbill, USN

**1130 – 1300**  
LUNCH - provided by the Naval Postgraduate School Foundation

**1300 – 1400**  
Senior Leader Discussion

**1400 – 1415**  
Conference Wrap Up / Due Outs / Tasked Stakeholders  
VADM Karl Thomas, USN

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**Schedule of Events**

**Naval Space Summit 2024 | Monterey, California**

NAVAL POSTGRADUATE SCHOOL  
NAVAL SPACE SUMMIT 9-11 JULY 2024  
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The Honorable Erik K. Raven
Under Secretary of the Navy

The Honorable Erik K. Raven assumed the responsibilities of the Under Secretary of the Navy on 13 April, 2022. He serves as the Department of Navy’s Chief Operating Officer and Chief Management Officer. He is responsible for providing oversight and policy for defense and naval strategy, intelligence and intelligence-related activities, sensitive activities, special access programs, space activities, critical infrastructure, small business programs, and the naval audit service. Additionally, he is responsible for business operations, performance management, and risk management within the Department.

Mr. Raven has served in a variety of legislative senior leadership positions in the federal government. Before his nomination, Mr. Raven was the principal advisor to the Democratic Chairs and Vice-Chairs of the Committee on Appropriations and Subcommittee on Defense on budget matters relating to the Department of Defense and intelligence community.

Mr. Raven also served as an advisor in the offices of Senators Feinstein, Kennedy, and Byrd, advising on defense, foreign affairs, homeland security, veterans, space, and transportation policy issues.

Mr. Raven holds a master’s degree in the History of International Relations from the London School of Economics, and a Bachelor of Arts in International Relations from Connecticut College.

Admiral James W. Kilby
Vice Chief of Naval Operations

Adm. James W. Kilby is a native of Pound Ridge, New York, and a 1986 graduate of the United States Naval Academy.

Kilby’s sea tours include USS Sampson (DDG 10), USS Philippine Sea (CG 58) and two tours aboard USS San Jacinto (CG 56). He commanded USS Russell (DDG 59) where he received the Vice Adm. James B. Stockdale Award for inspirational leadership. His major command was aboard USS Monterey (CG 61) and included its maiden Ballistic Missile Defense (BMD) deployment in 2011.

His shore tours include the Naval Postgraduate School; two tours in the Chief of Naval Operations’ Surface Warfare Directorate, N96; Navy Personnel Command’s Surface Warfare Division, PERS-41; and the Aegis BMD Program Office in the Missile Defense Agency.

Kilby’s flag assignments include Commander, Naval Surface and Mine Warfighting Development Center; Commander, Carrier Strike Group 1; director of Warfare Integration, N9; Deputy Chief of Naval Operations for Warfighting Requirements and Capabilities, N9; Deputy Commander, U.S. Fleet Forces Command; and Commander, Task Force EIGHT ZERO.

Kilby assumed the duties of Vice Chief of Naval Operations, Jan. 5, 2024.
Lt. Gen. Douglas A. Schiess is the Commander, U.S. Space Forces - Space; and United States Space Command’s Combined Joint Force Space Component Commander, Vandenberg Space Force Base, California. General Schiess leads thousands of joint and combined personnel across 70 tactical units with a mission to plan, integrate, conduct and assess global space operations in order to deliver combat relevant space effects in, from, and to space for Combatant Commanders, Coalition partners, the Joint Force and the nation. The General plans and executes space operations through two command and control deltas and exercises operational control of assigned and attached U.S. Space Forces including all or portions of six operational deltas. Additionally, Lt. Gen. Schiess controls five distinct and geographically dispersed operations centers, including the Combined Space Operations Center at Vandenberg SFB, California; the National Space Defense Center at Schriever SFB, Colorado; the Missile Warning Center at Cheyenne Mountain Space Force Station, Colorado; the Joint Overhead Persistent Infrared Planning Center at Buckley SFB, Colorado; and the Joint Navigation Warfare Center at Kirtland AFB, New Mexico.

Lt. Gen. Douglas A. Schiess is the Commander, U.S. Space Forces - Space; and United States Space Command’s Combined Joint Force Space Component Commander, Vandenberg Space Force Base, California. General Schiess leads thousands of joint and combined personnel across 70 tactical units with a mission to plan, integrate, conduct and assess global space operations in order to deliver combat relevant space effects in, from, and to space for Combatant Commanders, Coalition partners, the Joint Force and the nation. The General plans and executes space operations through two command and control deltas and exercises operational control of assigned and attached U.S. Space Forces including all or portions of six operational deltas. Additionally, Lt. Gen. Schiess controls five distinct and geographically dispersed operations centers, including the Combined Space Operations Center at Vandenberg SFB, California; the National Space Defense Center at Schriever SFB, Colorado; the Missile Warning Center at Cheyenne Mountain Space Force Station, Colorado; the Joint Overhead Persistent Infrared Planning Center at Buckley SFB, Colorado; and the Joint Navigation Warfare Center at Kirtland AFB, New Mexico.

Lt. Gen. Douglas A. Schiess entered the Air Force as a Distinguished Graduate of the Air Force Reserve Officer Training Corps at the University of California, Los Angeles in 1992, and transferred to the United States Space Force in 2022. He has commanded the 4th Space Operations Squadron at Schriever AFB, Colorado; the 45th Operations Group at Cape Canaveral Air Force Station, Florida; the 21st Space Wing at Peterson AFB, Colorado; and the 45th Space Wing at Patrick AFB, Florida. He deployed to Al Udeid Air Base, Qatar, in support of operations Enduring Freedom, Resolute Support, and Inherent Resolve. His staff assignments include Headquarters Air Force Space Command, Headquarters Space Operations Command, the Air Staff and Office of the Secretary of the Air Force. Prior to his current assignment, Lt. Gen. Schiess was the Commander, Combined Force Space Component Command and Vice Commander, Space Operations Command.
Lieutenant General Karl Thomas, USN  
Deputy Chief of Naval Operations for Information Warfare, N2N6

Lieutenant General Karl Thomas assumed the commission through the Naval Reserve Officer Training Corps at Rensselaer Polytechnic Institute in 1986 with a degree in Management Systems. He earned a Master’s of Science degree in Information Technology from the Naval Postgraduate School in Monterey, California.

A carrier aviator in the E-2C Hawkeye, he served at sea as a division officer in Carrier Airborne Early Warning Squadron (VAW) 114; as ship’s navigator aboard USS New Orleans (LPH 11) and USS Essex (LHD 2); as a department head in VAW 117; and as executive officer and commanding officer of VAW 117 during Operation Iraqi Freedom. After graduating nuclear power school, Thomas served as executive officer for both USS Dwight D. Eisenhower (CVN 69) and USS George Washington (CVN 73), delivering the first permanently forward-deployed nuclear aircraft carrier to Japan. He commanded the U.S. 6th Fleet Command Ship, USS Mount Whitney (LCC 20); USS Abraham Lincoln (CVN 72) during the ship’s refueling complex overhaul (RCOH); and USS Carl Vinson (CVN 70) in support of Operation Inherent Resolve.

On shore, Thomas served as a fleet replacement instructor in VAW 110; as flag aide for both commander, Fighter Airborne Early Warning Wing Pacific and the director of Naval Reactors; in the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (OUSD AT&L) (Unmanned Warfare) coordinating the Unmanned Air Systems Task Force; and as executive assistant to the director, Air Warfare (N98).

As a flag officer, his tours include director, 21st Century Sailor Office (N17); Task Force 70/Commander, Carrier Strike Group 5, deploying on USS Ronald Reagan (CVN 76) out of Yokosuka, Japan; and assistant deputy chief of naval operations for Operations, Plans, and Strategy (N3/5B). Most recently, Thomas commanded forward deployed naval forces as commander, U.S. 7th Fleet, from July 2021 to February 2024.

He assumed duties as deputy chief of naval operations for Information Warfare (N2N6) and the 69th director of Naval Intelligence in February 2024.

Lieutenant General Brian W. Cavanaugh, USMC  
Commanding General, Fleet Marine Force, Atlantic

Lieutenant General Brian W. Cavanaugh assumed the duties as Commanding General, Fleet Marine Force, Atlantic; Commander, Marine Forces Command; and Commander, Marine Forces Northern Command on 30 August 2022.

A native of Baltimore, Maryland, Lieutenant General Cavanaugh earned his commission through the United States Naval Academy in 1990 and was designated a Naval Aviator in 1992. He served with HMH-462, HMH-362, and HMX-1. He commanded HMH-362 in Iraq during Operation IRAQI FREEDOM and MAG-36 during multiple disaster relief efforts in Asia.

As a General Officer, he served as Deputy Commander, U.S. Marine Forces Pacific; Deputy Director for Operations, Joint Staff J-3; Assistant Deputy Commandant, Programs, Headquarters Marine Corps, Programs and Resources Department; and as Commanding General, 1st Marine Aircraft Wing.

Lieutenant General Cavanaugh’s other staff assignments include instructor at Officer Candidates School; Aide-de-Camp to the Chief of Naval Operations; Joint Doctrine Branch Chief, Joint Staff; Executive Assistant, Vice Director Joint Staff; Director of the Commandant of the Marine Corps’ Safety Division; and Marine Military Assistant to the 75th Secretary of the Navy.

Lieutenant General Cavanaugh’s education includes a BS in Mechanical Engineering from the United States Naval Academy, an MBA from Webster University and a Master of Science in National Resource Strategy from the National Defense University’s Industrial College of the Armed Forces. He is also an MIT Seminar XXI Fellow.

Lieutenant General Cavanaugh has accumulated over 3,000 flight hours, primarily in the CH-53D/E.
**Vice Admiral Blake L. Converse, USN**
Deputy Commander, U.S. Pacific Fleet

Vice Adm. Blake Converse is a native of Pennsylvania and graduated from Penn State University in 1987 with a Bachelor of Science in Mechanical Engineering. He also holds Master of Science degrees in Space Systems Engineering and Applied Physics from the Naval Postgraduate School.

His career as a nuclear submarine warfare officer includes assignments aboard USS Lapon (SSN 661), USS Olympia (SSN 717), and USS Minneapolis-St.-Paul (SSN 708) as the executive officer. Command assignments include commanding officer, USS Louisiana (SSBN 743) from February 2006 to February 2009 and commander, Submarine Squadron 6 from October 2012 to August 2014. Ashore, he served as radiological controls officer on the staff of Commander, U.S. Pacific Fleet Submarine Force; special assistant to Commander, U.S. Joint Forces Command; deputy commander of Submarine Squadron 17; Prospective Commanding Officer Course instructor at Naval Reactors headquarters; and chief of staff to Commander, U.S. Submarine Force.


Converse is currently the deputy commander, U.S. Pacific Fleet.

His personal decorations include the Defense Superior Service Medal, Legion of Merit (five awards), Defense Meritorious Service Medal, Meritorious Service Medal (four awards), Joint Commendation Medal, Joint Achievement Medal, Navy Commendation Medal, Navy Achievement Medal (three awards) and various unit awards. In 2008, he was awarded the Rear Admiral Jack N. Darby award for Inspirational Leadership and Excellence of Command.

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**President, Naval Postgraduate School**

Ann E. Rondeau, Ed.D.
Vice Admiral, U.S. Navy (Ret.)

Retired Vice Adm. Ann E. Rondeau was appointed as President, Naval Postgraduate School on January 29, 2019. She brings to the assignment an unparalleled record of leadership and achievement within the military and academia in the areas of education, training, research, executive development, change management, and strategic planning. Prior to her appointment, Adm. Rondeau served as the sixth president of the College of DuPage. Her most recent military position was as the President of the National Defense University, a consortium of five colleges and nine research centers in Washington, DC.

Rondeau has extensive leadership experience in significant military and educational roles. In 1985, she was selected and served as a White House Fellow in the Reagan Administration and spent two years as National Security Advisor to the U.S. Attorney General. She served in myriad command and operational leadership assignments, including ASW, Ops Intel, Fleet Support, Military Sealift, joint logistics, Installations Management and Training and Education. In staff positions she engaged in plans, operations and policies, political-military affairs, military and maritime strategy as well as intragovernmental and interagency policies, projects and coordination and international military education.

As a Flag Officer, Rondeau served in leadership positions in installations and education and training as the President of National Defense University, Deputy Commander of the U.S. Transportation Command in Illinois, Pentagon Director/Chief of Staff for the U.S. Navy Staff, Commander of the Navy Personnel Development Command in Virginia, Commander of the Naval Service Training Command at Great Lakes, Ill., and Deputy for Shore Installations on Commander Pacific Fleet Staff. Rondeau retired from the U.S. Navy as a three-star admiral in 2012 and was the second woman to have achieved that rank in the Navy. She then served as a partner and later an independent consultant with the IBM Watson group, followed by her present assignment.

President Rondeau’s leadership has served many other purposes, past and present, to include: Board of Directors, United States Institute of Peace; Board of Directors, German Marshall Fund; Admissions Committee, University of Memphis and United States Naval Academy; Board of Directors, The Atlanta Council; Arlington National Cemetery Advisory Committee; Board of Directors, Yorktown Institute; Board of Directors, National Museum of the American Sailor; Board of Directors, Council of Higher Education Accreditation; Board of Directors, Chicago Regional Growth Corporation; Board of Directors, Choose DuPage (regional development organization for Chicago northwest suburbs); Tennessee/Mid-South Economic Development Board; DoD liaison to the Center for the Study of the Presidency; CNA Military Advisory Board (studying energy and environmental impacts on national security); Flag Officer Advisory Council for Arizona State University, Board of Trustees for Princeton Theological Seminary, the National Naval Officers Association Senior Advisory Panel, the Eisenhower Memorial Commission and the National Cold War Veterans Memorial Design Steering Committee among others. Further, she currently serves as an Independent Director for Quanta West, LLC and LUMA Energy, LLC and as a consultant for Quanta Services, Inc (PWR).

Rondeau holds a B.A. from Eisenhower College (NY), an M.A. from Georgetown University (DC) and an Ed.D. from the College of Education at Northern Illinois University in DeKalb. She also holds an honorary Doctorates in Public Service from Carthage College (Kenosha, WI) and in Humane Letters from Rosalind Franklin University of Medicine and Science (Chicago, IL).
Mr. Steve “Bucky” J. Butow
Director of the Space Portfolio at the Defense Innovation Unit

Steve “Bucky” Butow is the Director of the Space Portfolio at the Defense Innovation Unit (DIU). He joined the team in 2015 as an early plank owner when DIU was known as the Defense Innovation Unit Experimental (DIUx) and helped establish the organization’s operating locations in Silicon Valley, California; Boston, Massachusetts; and Austin, Texas.

In his reserve capacity, Butow is a Brigadier General serving as the Commander of the California Air National Guard where he leads 4,900 Airmen assigned to five wings and a headquarters staff. Prior to this assignment, he was a Special Assistant to the Director, Air National Guard.

Butow is a former Commander of the 129th Rescue Wing at Moffett Federal Airfield in California, where his responsibilities included organizing, training, equipping, and maintaining 970 combat-ready forces and $1 billion dollars of special mission aircraft and equipment supporting the U.S. Air Force’s combat rescue and personnel recovery missions. He has previously served as the Deputy Director of the Joint Search and Rescue Center for U.S. Central Command in 2005, and as Chief of Personnel Recovery for U.S. Air Forces Central in 2007 supporting Operations IRAQI and ENDURING FREEDOM. Prior to joining DIU, Butow was the Vice Chief of the Joint Staff, California Military Department with responsibilities including cybersecurity, incident awareness and innovation. He has more than 3,500 flying hours in T-37, T-38, C-130, HC-130 and MC-130P aircraft.

As a researcher with the Search for Extraterrestrial Intelligence (SETI) Institute, Butow worked on instrument concepts for Mars surface soil analysis at NASA Ames Research Center in Mountain View, California. He later served as co-principal investigator for a series of airborne science missions for which he was recognized for outstanding achievement and contributions to the Space Science Division in 1999 and received an Ames Honor Award as a member of an Astrobiology Mission Project Team in 2000.

Butow graduated from San Jose State University with a B.A. in Physics & Astronomy and earned a M.S. in Management with specialization in Air and Space Strategic Studies from the University of Maryland. He has also completed executive courses at Harvard's John F. Kennedy School of Government and was a member of the National Leadership Preparedness Initiative (NPLI) Cohort 16. Butow is a lifetime member of the Honor Society of Phi Kappa Phi for academic achievement.