



U.S. NAVAL WAR COLLEGE
Est. 1884
NEWPORT, RHODE ISLAND

March 22-24, 2016

Maritime Strategy

EMC Chair Symposium

Program of Events & Biographies



The U.S. Naval War College expresses appreciation to the Naval War College Foundation,
in the preparation and presentation of this symposium.

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PROGRAM OF EVENTS

This third maritime-centric EMC Chair symposium is a follow-up to the release of the 2015 “A Cooperative Strategy for 21st Century Seapower.” The symposium will explore maritime strategy, concepts essential to implement the maritime strategy, and international reactions to it. Participants from DOD, academia, and the policy community will convene in Newport to discuss maritime issues. The implications are important for understanding the types of missions combatant commanders will execute and the types of equipment and training the sea services must provide to support these missions.

TUESDAY, MARCH 22 (Attire – Military: Service Dress Blue or equivalent, Civilian: Coat and Tie)

5:30 p.m. Bus departs hotel for Naval War College

6:00 Welcome Reception – Luce-Mahan Flag Passageway

7:00 Opening Dinner – Mahan Rotunda

Keynote Address

Mr. David E. Sanger, *The New York Times*

9:30 Bus departs Naval War College

WEDNESDAY, MARCH 23 (Attire – Military: Service Dress Blue or equivalent, Civilian: Coat and Tie)

8:00 a.m. Vans depart hotel for Naval War College

8:30 Registration and Coffee

9:00 Welcoming Remarks

- Dr. Derek S. Reveron, EMC Informationist Chair, U.S. Naval War College
- RADM P. Gardner Howe III, USN, President, U.S. Naval War College

9:15 Keynote Address

VADM Charles D. Michel, USCG, Vice Commandant, U.S. Coast Guard

10:00 Break

10:15 Panel 1: International Perspectives on Maritime Strategy

The 2007 maritime strategy and its 2015 update stress the importance of partnering with navies around the world to provide maritime security. The 2015 revision of the Cooperative Strategy devotes an entire section to international partnerships because, “By expanding our network of allies and partners and improving our ability to operate alongside them, naval forces: foster the secure environment essential to an open economic system based on the free flow of goods, protect U.S. natural resources, promote stability, deter conflict, and respond to aggression.” The panel will investigate this strategic approach to global maritime security, and discuss the effectiveness and limitations of the strategy. By bringing together international officers to reflect on the strategy and global role of the U.S. Navy, panelists will consider the challenges and opportunities for an internationalist maritime strategy.

- ADM Nirmal Verma, IN (Ret.), U.S. Naval War College
- ADM Guillermo E. Barrera Hurtado, ARC (Ret.), U.S. Naval War College
- RAdm Christopher Parry, CBE, University of Reading
- CDRE Lee Cordner, RAN (Ret.), The University of Adelaide

Moderated by CAPT Anthony Cowden, USN, U.S. Naval War College

12:00 Lunch Address

Dr. Thomas Hughes, School of Advanced Air and Space Studies

1:00 p.m. Address

Dr. Andrew C. Winner, U.S. Naval War College

1:15 Panel 2: Reflections on Maritime Strategy

The panel will review how the U.S. Navy, Marine Corps, and Coast Guard refreshed the 2007 Cooperative Strategy to keep pace with changing times. Panelists will explain the advantages and drawbacks of how the sea services make strategy, draw lessons from the making of the 2007 maritime strategy, and furnish insight into how the services can execute the 2015 strategy in contested waters. The panel will shed light on how the U.S. Navy can reconnect maritime strategy to larger national purposes.

- CAPT Peter D. Haynes, USN, U.S. Special Operations Command
- Mr. Bryan McGrath, The FerryBridge Group
- CDR Andrea H. Cameron, USN, U.S. Naval War College
- Mr. Peter M. Swartz, CNA

Moderated by Dr. James Holmes, U.S. Naval War College

2:45 Break

3:00 Panel 3: Navy Force Development

The 2015 maritime strategy calls for the Navy to possess a wide-ranging set of capabilities including: all domain access, deterrence, sea control, power projection, and maritime security. Along with these capabilities, the updated strategy brings forward several concepts which, if implemented successfully, will enable the Navy to leverage partnerships with other services and countries, better prepare its people to implement the strategy in the future, and develop needed capabilities in the “electromagnetic-cyber” environment. This panel will offer perspectives on what force structure elements will be needed to achieve these objectives taking into account the growing threats around the world combined with budget realities.

- Dr. Henry Hendrix II, Center for a New American Security
- Ms. Lena S. Andrews, PhD candidate, Massachusetts Institute of Technology
- Prof. Jeffrey E. Kline, Naval Postgraduate School
- Mr. Paul S. Giarra, Global Strategies & Transformation

Moderated by Prof. Roger H. Ducey, U.S. Naval War College

4:30 Reception at Naval War College Museum

6:00 Vans depart Naval War College for hotel

THURSDAY, MARCH 24 (Attire – Military: Service Dress Blue or equivalent, Civilian: Coat and Tie)

8:00 a.m. Vans depart hotel for Naval War College

8:30 Panel 4: New Perspectives on Maritime Strategy

This panel will offer perspectives from young scholars to illustrate how strategic theory interacts with the 21st century’s challenges. Serving as a bridge between today’s strategy documents and the future, these scholars will offer new perspectives on maritime strategy.

- Dr. Lukas Milevski, Changing Character of War Programme, University of Oxford
- Mr. Adam Elkus, PhD student, George Mason University
- Mr. Nicholas C. Prime, PhD candidate, King’s College London

Moderated by Dr. Peter A. Dombrowski, U.S. Naval War College

10:00 Break

10:15 Address

Dr. Carol Atkinson, University of Southern California

10:45 Break

11:00 Panel 5: Maritime Warfare

“A Cooperative Strategy for 21st Century Seapower” declares that “the Sea Services operate in the world’s oceans to protect the homeland, build security globally, project power, and win decisively. This ability to maneuver globally on the seas and to prevent others from using the sea against our interests constitutes a strategic advantage for the United States.” Yet the ability to maneuver is increasingly challenged as adversaries employ anti-access/area-denial concepts and weapons against the U.S. and its partners. Consequently, new concepts are needed to employ naval forces in denied areas. The aim of this panel is to investigate how the sea services will operationalize concepts of maritime warfare.

- Mr. Bryan Clark, Center for Strategic and Budgetary Assessments
- Dr. Francis G. Hoffman, National Defense University
- Dr. William F. Bundy, U.S. Naval War College
- CDR Benjamin Armstrong, USN, PhD candidate, King’s College London

Moderated by Prof. Richard Crowell, U.S. Naval War College

12:30 p.m. Lunch Address

Dr. Sarah C. M. Paine, U.S. Naval War College

1:30 Panel 6: Humanitarian Assistance and Disaster Relief

Humanitarian organizations, international agencies, and militaries increasingly find themselves faced with complex emergencies and natural disasters in urban settings. Future climate change projections place coastal mega-cities at even greater risk than they are today. The high population density and intricate physical infrastructures contained within urban environments present a multitude of challenges to civilian-military coordination efforts and can significantly hinder effective responses. The U.S. Armed Forces routinely supports the U.S. Agency for International Development in responding to major disasters overseas that threaten the safety and well-being of U.S. citizens, as well as those of other countries. America’s Sea Services possess a broad range of rapidly deployable capabilities that have proven critical to life-saving and relief efforts during complex crises, when other responding organizations’ capabilities have been exceeded or are unable to provide a comprehensive response given the magnitude of the disaster. This panel will explore the challenges that exist during urban emergencies and possible strategies, concepts, training opportunities, and organizational changes that the U.S. Sea Services can institute to improve the efficacy of civilian-military humanitarian responses in these environments.

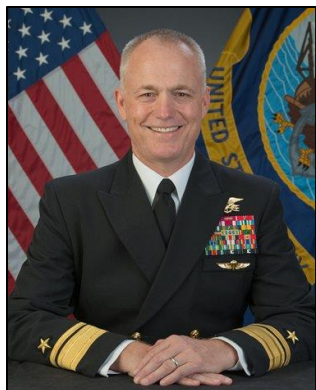
- Dr. Michael D. Lappi, Harvard Humanitarian Initiative
- Dr. Ronak B. Patel, Stanford University School of Medicine
- Dr. Joseph DiRenzo III, U.S. Coast Guard Research and Development Center
- Ms. Julia Brooks, Harvard Humanitarian Initiative

Moderated by Prof. David Polatty, U.S. Naval War College

3:00 Concluding Remarks

3:30 Vans depart Naval War College for hotel or airport

U.S. NAVAL WAR COLLEGE LEADERSHIP



REAR ADMIRAL P. GARDNER HOWE III is the 55th President of the U.S. Naval War College. Rear Adm. Howe is a native of Jacksonville, Fla. He was commissioned in 1984 following his graduation from the United States Naval Academy.

Howe's operational assignments have included a full range of duties in the Naval Special Warfare and joint Special Operations communities. He commanded Naval Special Warfare Unit Three in Bahrain, Naval Special Warfare Group Three in San Diego, and Special Operations Command, Pacific in Hawaii. His service overseas includes multiple deployments to the western Pacific and Southwest Asia, and participation in Operations Earnest Will, Provide Promise, Enduring Freedom, and Iraqi Freedom.

His key joint and staff assignments include current operations officer at Special Operations Command, Pacific; chief staff officer, Naval Special Warfare Development Group; assistant chief of staff for Operations, Plans and Policy at Naval Special Warfare Command; director of Legislative Affairs for U.S. Special Operations Command; and assistant commanding officer, Joint Special Operations Command.

Howe graduated from the Naval Postgraduate School in 1995 with a master of arts in national security affairs (special operations / low-intensity conflict), and from the National War College in 2002 with a master of arts in national security.



DR. LEWIS M. DUNCAN currently serves as Provost of the U.S. Naval War College, the preeminent advanced military education school in the world. As Provost, Dr. Duncan serves as the College's chief operating officer, overseeing the continuum of professional military education programs, residential and online, as well as operational administration of the institution.

Dr. Duncan is internationally recognized as an accomplished research scientist in experimental space physics and radiophysics, and as a leading scholar in study of the societal and ethical implications of emerging technologies.

Additionally, he serves on the Board of Directors of the Center for the Advancement of Science in Space, responsible for management of the U.S. National Laboratory of the International Space Station. He also is an

Associated Fellow of the United Nations Institute for Training and Research, supporting the United Nations Operational Satellite Applications Technology (UNOSAT) program.

Previously, Dr. Duncan served for ten years as President of Rollins College. He also served as Dean of the Thayer School of Engineering and Professor of Engineering Sciences at Dartmouth College.

Dr. Duncan received his B.A. (1973) in physics and mathematics, M.A. (1976) and Ph.D. (1977) in space physics, all from Rice University. Among his past honors, he received the Alan Berman Award from U.S. Naval Research Laboratory and is a member of Phi Beta Kappa, Sigma Xi, Tau Beta Pi, and Phi Kappa Phi.

EMC INFORMATIONIST CHAIR



DEREK REVERON is a Professor of National Security Affairs and the EMC Informationist Chair at the U.S. Naval War College in Newport, R.I. He specializes in strategy development, non-state security challenges, intelligence, and U.S. defense policy. He has authored or edited nine books. The latest are *China and Cybersecurity* (co-edited by Oxford University Press, 2015), *US Foreign Policy and Defense Strategy* (co-authored by Georgetown University Press, 2015), and *Cyberspace and National Security* (edited by Georgetown University Press, 2012).

Dr. Reveron has lectured on strategy and international security in more than twenty countries, primarily in South America and East and Southern Africa.

As a serving officer in the Navy Reserves, he has served with the Joint Staff, Supreme Headquarters Allied Powers Europe, U.S. Southern Command, Naval Forces Central Command, and NATO Training Mission-Afghanistan.

Dr. Reveron is a faculty affiliate at the Belfer Center for Science and International Affairs at Harvard University where he co-teaches a course on contemporary national security challenges at the Kennedy School of Government. He also teaches at the Extension School at Harvard University.

Before joining the Naval War College faculty in 2004, Dr. Reveron taught political science at the U.S. Naval Academy. During graduate school, he formulated, implemented and evaluated democracy promotion programs for the NGO Heartland International.

He graduated from the College of Naval Command Staff through the College of Distance Education Fleet Seminar Program and completed the Maritime Staff Operators Course at the Naval War College. He received an MA in political science and a Ph.D. in public policy analysis from the University of Illinois at Chicago.

KEYNOTE SPEAKERS

(in order of appearance)

DAVID SANGER is National Security Correspondent and senior writer for *The New York Times*. He is also the author of two *Times* bestsellers on foreign affairs: *The Inheritance: The World Obama Confronts and the Challenges to American Power* (2009) and *Confront and Conceal: Obama's Secret Wars and Surprising Use of American Power* (2012). He has served as the *Times*' Tokyo Bureau Chief, Washington Economic Correspondent, White House correspondent during the Clinton and Bush Administrations and Chief Washington Correspondent.

Mr. Sanger has twice been a member of *Times* teams that won the Pulitzer Prize, first for the investigation into the causes of the Challenger disaster in 1986, and later for investigations into the struggles within the Clinton administration over technology exports to China. He is also a senior fellow in the Press and National Security at the Belfer Center at Harvard's Kennedy School of Government, where he co-teaches "Central Challenges in American National Security, Strategy and the Press." He is a member of the Council on Foreign Relations and the Aspen Strategy Group.

VICE ADMIRAL CHARLES MICHEL assumed the duties as the 30th Vice Commandant in August 6, 2015. As the Vice Service Chief and Chief Operating Officer, Vice Admiral Michel executes the Commandant's Strategic Intent, manages internal organizational governance and serves as the Component Acquisition Executive. Prior to this appointment, Vice Admiral Michel served as the Deputy Commandant for Operations, responsible for establishing and providing operational strategy, policy, guidance and resources to meet national priorities for U.S. Coast Guard missions, programs and services. His previous flag officer assignments include Deputy Commander, U. S. Coast Guard Atlantic Area; Director, Joint Interagency Task Force South; Military Advisor to the Secretary of Homeland Security; and Director for Governmental and Public Affairs, U. S. Coast Guard. A native of Brandon, Florida, he graduated from the U. S. Coast Guard Academy with a Bachelor of Science degree in Marine Engineering (with high honors) in 1985. In 1992, he graduated summa cum laude from the University of Miami School of Law as the salutatorian, receiving membership in the Order of the Coif. Tours of duty afloat included serving as Commanding Officer, USCGC RESOLUTE; as Executive Officer, USCGC DAUNTLESS; as Commanding Officer, USCGC CAPE CURRENT; and as Deck Watch Officer, USCGC DECISIVE. Vice Admiral Michel also served as Chief of the Office of Maritime and International Law, Washington, DC; Staff Attorney, Eighth Coast Guard District, New Orleans, Louisiana; head of the Operations Division, Office of Maritime and International Law, Washington, DC; and as Legislative Counsel for the Office of Congressional and Governmental Affairs, Washington, DC. Vice Admiral Michel's awards include the Coast Guard Distinguished Service Medal, Defense Superior Service Medal, the Legion of Merit, the Meritorious Service Medal, the Coast Guard Commendation Medal, the Coast Guard Achievement Medal, and the Coast Guard Letter of Commendation Ribbon. Vice Admiral Michel was also awarded the Distinguished Service Medal of the Colombian Navy. Vice Admiral Michel was the American Bar Association Young Lawyer of the Year for the Coast Guard in 1995, the Judge Advocate's Association Career Armed Services Attorney of the Year for the Coast Guard in 2000, and is currently a member of the Florida Bar.

TOM HUGHES is an Associate Professor at the School of Advanced Air and Space Studies, the Air Force's advanced school for strategy education. A historian by training, he is the author of "Over Lord: General Pete Quesada and the Triumph of American Tactical Air Power in World War II" (Free press, 1995), and of "Admiral Bill Halsey: A Naval Life" (Harvard, 2016). He had published many articles and book chapters, lectured at every US military war college, and lead battlefield staff rides for senior military leaders in the continental United States, Europe, the Mediterranean region, and Southeast Asia.

DREW WINNER is the Chair of the Strategic and Operational Research Department and a Professor of Strategic Studies at the Naval War College, Newport, Rhode Island. His areas of focus are South Asia, counterproliferation and nonproliferation, the Middle East, maritime partnerships, and maritime strategy. He is director of the Indian Ocean Studies Group at the Naval War College. In June 2007, he was awarded the Navy Meritorious Civilian Service Award for his work on the Navy's new maritime strategy. Prior to his current appointment, he was a senior staff member at the Institute for Foreign Policy Analysis. Prior to joining the Institute, he held various positions at the U.S. Department of State on the staff of the Under Secretary of State for Arms Control and International Security Affairs and in the Bureau of Political-Military Affairs where he worked on nonproliferation, security in the Persian Gulf including negotiating access and prepositioning agreements, arms transfer policy, NATO enlargement, and security assistance. He also worked in the Office of the Secretary of Defense on conventional arms control. He is co-editor with Peter Dombrowski of *The Indian Ocean and US Grand Strategy: Ensuring Access and Promoting Security*, Georgetown University Press, 2014. He is also the co-author of *Indian Naval Strategy in the 21st Century*, Routledge, 2009. He holds a Ph.D. from the University of Maryland, College Park, an M.A. from The Johns Hopkins University Paul H. Nitze School of Advanced International Studies (SAIS), and an A.B. from Hamilton College.

CAROL ATKINSON is Professor of the Practice of International Relations at the University of Southern California. She holds a Ph.D. in political science from Duke University and is a 1984 graduate of the US Air Force Academy. She retired from the US Air Force in 2005. Dr. Atkinson is author of *Military Soft Power: Public Diplomacy Through Military Educational Exchanges* (Rowman & Littlefield, 2014). The book examines the long term impacts of exchange programs hosted by the U.S. military's war and staff colleges. It provides evidence for how the United States extends its influence or "soft power" worldwide through social networks developed at the United States' elite military schools. Dr. Atkinson is herself an exchange participant having spent the fall of 2013 as a Fulbright Senior Research Fellow at the G.S. Rakovski National Defense College in Sofia, Bulgaria. In her spare time, she tries to run as many miles as possible and enjoys hiking, camping, and cross-country skiing. You can learn more about her here: <https://sites.google.com/site/drcarolatkenson/home>

SALLY PAINE is William S. Sims Professor of History and Grand Strategy in the Strategy & Policy Department of the U.S. Naval War College. Nine years of research in Australia, China, Japan, Russia, and Taiwan form the basis for her publications: *Wars for Asia, 1911-1949* (Cambridge, 2012, Gelber prize longlist; Leopold Prize and PROSE award for European & World History), *The Sino-Japanese War of 1894-1895* (Cambridge, 2003), and *Imperial Rivals: China, Russia, and Their Disputed Frontier* (M. E. Sharpe, 1996, Jelavich prize). She has also written: *Nation Building, State Building, and Economic Development* (edited, M.E. Sharpe, 2010); *Modern China: Continuity and Change 1644 to the Present* (co-author with Bruce A. Elleman, Prentice Hall, 2010); and five naval books: *Naval Blockades and Seapower: Strategies and Counter-Strategies 1805-2005*, *Naval Coalition Warfare: From the Napoleonic War to Operation Iraqi Freedom*, *Naval Power and Expeditionary Warfare: Peripheral Campaigns and New Theaters of Naval Warfare*, *Commerce Raiding: Historical Case Studies, 1755-2009*, and *Navies and Soft Power: Historical Case Studies of Naval Power and the Nonuse of Military Force* (co-edited with Bruce A. Elleman, Routledge, 2006-11; Naval War College Press 2014-15). Her degrees include: B.A. Latin American Studies, Harvard University; M.I.A. Columbia University School for International and Public Affairs; certificates from both the East Asian and Russian Institutes; M.A. Russian, Middlebury College; and Ph.D. history, Columbia University.

PANEL 1: INTERNATIONAL PERSPECTIVES ON MARITIME STRATEGY

NIRMAL VERMA was commissioned into the Indian Navy in 1970. The Admiral assumed charge as the 20th Chief of the Naval Staff on August 31, 2009 and retired from service in 2012 on completion of a career spanning over four decades.

The Admiral's four decades of service afforded him varied experience in command, staff and training assignments, afloat as well as ashore. He had the privilege of commanding three ships during his naval career, including the coveted command of an aircraft carrier.

Admiral Verma's career has provided him vast amalgamated experience at the national and international level. Early in his career, he was a member of the naval crew that commissioned India's first Kashin class destroyer in the erstwhile Soviet Union. Admiral Verma attended mid and senior level professional courses at the Royal Naval Staff College, Greenwich, UK and the Naval Command Course at the Naval War College, Newport, RI, USA respectively. The Admiral is a post graduate in Defence Studies from Chennai University, India.

In his assignments as a Flag Officer, the Admiral has steered the development of maritime capability, formulation of induction policy, guided the HRD program of the Indian Navy, and structured the framework of transformation of the Navy's combat capability and infrastructure development.

Admiral Nirmal Verma is a recipient of the Param Vishisht Seva Medal and Ati Vishisht Seva Medal, awarded to him by the Government of India for his meritorious service.

Post retirement from the Navy, the Admiral was nominated by the Government of India as the High Commissioner to Canada. He relinquished charge in November 2014.

The Admiral is currently the U.S. Chief of Naval Operations Distinguished International Fellow at the Naval War College, Newport, RI.

GUILLERMO BARRERA graduated from the Colombian Naval Academy in 1971. He has a Bachelor of Science degree in Electrical Engineering and a Bachelor of Arts degree in Naval Sciences, both from the Colombian Naval Academy. He holds a Master of Science degree in Electrical Engineering from the U.S. Naval Postgraduate School. He completed the Advanced Management course at the University of Los Andes (Colombia) and also the Business High Management Program of the University of La Sabana (Colombia). He completed the Naval Command College, class of 1993 at the U.S. Naval War College in Newport, Rhode Island.

Admiral Barrera's service on board naval ships includes tours on Destroyer Escort "Boyacá," Destroyer "Santander," Destroyer "7 de Agosto," Missile Frigate "Caldas" and Missile Frigate "Almirante Padilla." He commanded Riverine Patrol Boat "Fritz Hagale," Buoy Tender "Gorgona" and Missile Frigate "Almirante Padilla."

His shore assignments include: officer of the Cadet's Battalion and Commandant of the Cadet's Battalion at the Colombian Naval Academy; operations officer in the Colombian Naval Caribbean Forces; Director of Naval communications; General Aide to the Commander of the Colombian Navy; Commander of the Colombian Coast Guard.

Selected for Flag Rank in December 1998, Admiral Barrera was Naval Attaché in Venezuela, Chief of Department J5 in the Joint Staff of the Military Forces of Colombia, Commander of the Colombian Naval Caribbean Forces, Chief of Operations of the Colombian Navy and from August 2006 until August 2010 he served as Commander of the Colombian Navy (CNO) with the rank of four star Admiral. His last tour in active duty was the Defense Attaché of Colombia in Washington, DC.

Admiral Barrera's awards include the "Order of Boyacá," "Order of Democracy" from the Colombian Senate, "Distinguish Services in Public Order," eight military Orders, three academic medals, 49 military and civilian decorations and 8 foreign awards, including the U.S. "Legion Of Merit," Commander Grade.

Admiral Barrera retired from active duty in September 1st, 2011. From October 2011 to November 2013 he was the first "CNO Distinguished International Fellow" at the US Naval War College in Newport, Rhode Island. Since December 2013 he is "Professor and Distinguished International Fellow" at the U.S. Naval War College.

CHRIS PARRY spent 36 enjoyable, rewarding years in the Royal Navy as an aviator and warfare officer. He commanded the destroyer HMS GLOUCESTER, the Amphibious Assault Ship HMS FEARLESS, the UK's Amphibious Task Group and the Maritime Warfare Centre. He also had five senior Joint and UK Ministry of Defence appointments, with responsibility for operational and developmental issues relating to all three Services.

As well as sailing every sea, he experienced regular operational tours and combat operations in Northern Ireland, the Gulf and the Falklands, where he was mentioned in dispatches for his part in rescuing 16 SAS from a glacier in South Georgia and the detection and disabling of the submarine SANTA FE. As a Rear Admiral, he was responsible for determining the future strategic context for operations and leading the conceptual development of all three armed forces out to 2030.

Nowadays, he runs his own strategic forecasting company, advising governments, leading commercial companies and banks about strategic issues, future trends and systemic risk. He is an internationally recognized authority on existing and emerging aspects of the marine and maritime environment. From 2009-2010, he was the founding Chair of the UK's Marine Management Organization and continues to be busily engaged in offshore sustainable development, most notably in renewable energy.

A regular broadcaster and commentator in UK national newspapers and various magazines, he is an active author, most recently with the best-selling *Down South - a Falklands War Diary*, published in February 2012, and the influential *Super Highway: Sea Power in the 21st Century*, published in May 2014. In November 2015, he won the Maritime Foundation's Maritime Media Award. He read Modern History at Jesus College, Oxford, and is currently completing a PhD in the psychology of leadership and decision-making.

LEE CORDNER is a strategic analyst who has worked as a policy adviser, consultant, practitioner and educator. His research interests include maritime security and strategy, international policy analysis and development, strategic risk management, and organizational behaviour. Lee is with the *Indo-Pacific Governance Research Centre* (IPGRC), University of Adelaide, Australia. He is a Visiting Research Fellow at the Naval War College, USA and with the S. Rajaratnam School of International Studies (RSIS), Singapore and was a resident Visiting International Fellow at the Institute for Defence and Strategic Analyses (IDSA), India January-April 2014. Lee is a member of the Council for Security Cooperation in the Asia-Pacific (CSCAP) and co-chaired a Study Group on offshore oil and gas safety and security in the Asia-Pacific. He is a member of the Indian Ocean Research Group (IORG). He is widely published on Indo-Pacific maritime security and strategy matters.

Lee was formerly a Principal Research Fellow (Associate Professor) at the *Australian National Centre for Ocean Resources and Security* (ANCORS), University of Wollongong, Australia; and founding CEO of *Future Directions International Pty Ltd* (FDI), an independent strategic think-tank based in Perth, Australia. He served full-time in the Royal Australian Navy for 33 years and commanded several warships including *HMAS Sydney* during the 1991 Gulf War and *HMAS Adelaide* as senior Captain in the Fleet. He continues Reserve service in the rank of Commodore as an Operational Member of the Defence Seaworthiness Board; he recently completed 47 years naval service. He has a Doctor of Philosophy in Politics and International Studies (University of Adelaide) and masters' degrees in International Relations (Naval War College & Salve Regina University, USA) and Public Administration (University of Canberra). He lives in beautiful Kiama, Australia.

TONY COWDEN joined the National Security Affairs Department in September 2014. He was commissioned in 1984 through the University of Michigan Naval ROTC program. His initial assignment was to *USS MacDonough* (DDG-39), and in 1987 he reported to *USS Moosbrugger* (DD-980). In 1989 he left active duty and affiliated with the Navy Reserve. As a reservist he has commanded NR FFG Support Unit 101 and served as OIC of NR USFF Joint Task Force 700. While serving in the OPNAV Navy Command Center Unit, Captain Cowden was recalled to active duty in November 2001 for two years to serve as Navy Liaison to the Joint Staff and Battle Watch Captain, Navy Operations Center, in support of *Operations Noble Eagle, Enduring Freedom, and Iraqi Freedom*. In April 2009 Captain Cowden returned to the active duty component and was assigned to be Chief, Naval Forces Division, U.S. Military Training Mission, Riyadh, Kingdom of Saudi Arabia. Since then he attended the Naval War College as a student in the College of Naval Warfare and as a Gravelly Scholar, and served as Assistant and then Deputy Chief of Staff for Theater Security Cooperation, COMSEVENTHFLT. Captain Cowden earned a BA from the University of Michigan in history, an MS degree from the University of New Haven in computer science, an MA degree from the Naval War College in National Security and Strategic Studies, and is the author of *The Naval Institute Almanac of the U.S. Navy* (Naval Institute Press, 2004).

PANEL 2: REFLECTIONS ON MARITIME STRATEGY

PETE HAYNES graduated in 1986 from the University of Notre Dame with a BA in History, and received his commission through the NROTC program. He graduated from the Naval Postgraduate School with distinction in 1998 with an MA in National Security Affairs and in 2013 with a PhD in Security Studies, the latter as the first selectee in OPNAV N3/N5's new PhD program. In July 2015, the U.S. Naval Institute Press released his critically acclaimed *Toward a New Maritime Strategy: American Naval Thinking in the Post-Cold War Era*.

Operationally, he did tours in VAW-116, which included supporting Operations Desert Storm (1991) on board USS *Ranger* and Southern Watch (1999) on board USS *Constellation*, respectively. He commanded VAW-112 in 2005, which supported Operation Iraqi Freedom while flying off USS *Carl Vinson*, and was awarded the CNO's Airborne Early Warning Excellence Award.

Ashore, served as a flight instructor at VAW-110 (1991–94); flag aide to commander, U.S. Naval Forces Central Command/U.S. Fifth Fleet in Bahrain (1994–96); desk officer, Ukraine and Russia, Joint Staff J5 (2001–03); branch chief, OPNAV N513 Strategy and Concepts (2006); branch chief, OPNAV N511 Advanced Concepts (2010–11); and director, Strategy and Plans (J5) for the Djibouti-based Combined Joint Task Force - Horn of Africa, where he operationalized the command's new role as the supported U.S. commander for East Africa (2012). Currently, he is the deputy director, Strategy, Plans, and Policy (J5), Strategy and Concepts, at U.S. Special Operations Command.

He has 2,900 flight hours, 500 carrier landings, and 70 combat flights. Awards include the Defense Superior Service Medal, Legion of Merit, Defense Meritorious Service Medal, Meritorious Service Medal (two), Air Medal (four; one with Combat "V"), Joint Service Commendation Medal, and the Navy/Marine Corps Commendation Medal (three; one with Combat "V").

BRYAN MCGRATH is the Managing Director of The FerryBridge Group LLC (FBG), a niche consultancy specializing in naval and national security issues, including national and military strategy, strategic planning, executive communications, strategic communications and emerging technologies.

A retired Naval Officer, Bryan spent 21 years on active duty including a tour in command of USS BULKELEY (DDG 84), a guided-missile destroyer homeported in Norfolk, Virginia. In command, he received the "Admiral Elmo Zumwalt Award for Inspirational Leadership" from the Surface Navy Association and his ship earned the USS ARIZONA Memorial Trophy signifying its selection as the Fleet's most combat-ready warship. His final duties ashore included serving as Team Lead and Primary Author of the US Navy's 2007 Maritime Strategy "*A Cooperative Strategy for 21st Century Seapower*".

In his spare time, Bryan is a widely-published commentator in the fields of national and maritime strategy, with policy papers published at major think tanks, and articles placed in nationally marketed periodicals. He is a frequent panelist at symposia that deal with naval issues and is frequently quoted by major press organizations.

Bryan earned a BA in History from the University of Virginia in 1987, and an MA in Political Science (Congressional Studies) from The Catholic University of America. He is a graduate of the Naval War College.

In 2012, he was the Director of the Navy Policy Team for the Romney Presidential Campaign.

In addition to his consulting work, Bryan is an Adjunct Fellow at the Hudson Institute and is the Assistant Director of the Hudson Center for American Seapower.

ANDREA CAMERON is a Permanent Military Professor in the National Security Affairs Department teaching policy analysis. She is also a member of the NWC Civilian-Military Humanitarian Response Program (HRP) which partners with leading universities and humanitarian organizations in order to advance civilian-military engagement and coordination during complex emergencies and disasters. Operationally, CDR Cameron has completed tours in both the carrier and amphibious fleets in addition to her assignment to an Embedded Training Team for the Afghanistan National Army. She was a Surface Warfare Officer and a Human Resources Officer in the Navy specializing in readiness, training, education, development, manpower, and policy. CDR Cameron is currently completing a Ph.D. in Security Studies from the Naval Postgraduate School with research in civil-military engagement during humanitarian assistance/disaster relief. She also holds a Doctorate in Educational Technology from Pepperdine University, a M.A. in Human Resource Development from The George Washington University, a M.S. in Military Operational Art and Science from the Air Force Command and Staff College, and a B.A. degree in Political Science from Marquette University.

PETER SWARTZ is a Principal Research Scientist at CNA and the author of CNA's 17-volume *U.S. Navy Capstone Strategies* series, analyzing U.S. Navy policy, strategy and operations from 1970 to 2010. He has conducted numerous studies for the U.S. Navy, Marine Corps, and Coast Guard, especially analyses of historical operational history to draw out insights applicable to current and future strategy and operations. He is also the CNA scientific analyst to the U.S. Navy OPNAV staff's Strategy and Policy Division (N51), where he contributes to the Navy Strategic Enterprise.

He served for 26 years as a U.S. Navy officer, principally in billets capitalizing on his expertise in counter-insurgency, naval strategy, and international and inter-service relationships. During his time in the Navy, he served two tours in-country as an advisor to the Vietnamese Navy (including a stint on VADM Elmo R. Zumwalt's COMNAVFORV/NAVADVGRU staff); was a principle conceptualizer and drafter of the Navy's Maritime Strategy during the 1980s (for part of that time on the staff of Secretary of the Navy John Lehman); directed Defense Operations at the U.S. Mission to NATO as the Berlin Wall was coming down; and was a special assistant to Chairman of the Joint Chiefs of Staff General Colin Powell during the first Gulf War.

In addition to his work at CNA, he also mentors other researchers analyzing Navy policy and strategy and co-chairs an informal Strategy Discussion Group. His most recent non-CNA publication is an analysis of current U.S. Navy policy and strategy in *The Routledge Handbook of Naval Strategy and Security* (2016).

He holds an M.Phil. degree in Political Science from Columbia University, an M.A. in International Relations from the Johns Hopkins Nitze School of Advanced International Studies (SAIS), and a B.A. in International Relations from Brown University.

JIM HOLMES is professor of strategy at the Naval War College and senior fellow at the University of Georgia School of Public and International Affairs and a former U.S. Navy surface warfare officer.

Jim is a Phi Beta Kappa graduate of Vanderbilt University (B.A., mathematics and German) and completed graduate work at Salve Regina University (M.A., international relations), Providence College (M.A., mathematics), and the Fletcher School of Law and Diplomacy at Tufts University (M.A.L.D. and Ph.D., international affairs), where he was the A. Eiken Hohenberg Scholar. He earned the McGinnis Family Award in 1994, signifying the top graduate in his Naval War College class.

His most recent books (with long-time coauthor Toshi Yoshihara) are *Strategy in the Second Nuclear Age* and *Red Star over the Pacific*. Designated an *Atlantic Monthly* Best Book of 2010, *Red Star over the Pacific* has been named to the Navy Professional Reading List as essential reading. Copies have been placed aboard every major ship, squadron, and shore installation in the U.S. Navy. Translations have appeared through the Chinese Academy of Social Sciences, Beijing, and through houses in Japan, South Korea, and Germany. An additional translation is underway in Taiwan. Under contract are *Naval Diplomats: The U.S. Asiatic Fleet* and *Japanese Sea Power in the 21st Century*.

He has been a visiting scholar at National Chengchi University, Taiwan, and the Institute for Defense Studies & Analyses, India. He has testified before the U.S.-China Economic and Security Review Commission and spoken at such institutions as Brown, Duke, Harvard, and Vanderbilt universities; the Lowy Institute for International Policy, Sydney; the Aspen Institute, Berlin; the Woodrow Wilson International Center for Scholars, Washington, DC; the French Institute of International Relations (ifri), Paris; the Clingendael Institute of International Relations, The Hague; and the Chinese Council for Advanced Policy Studies, Taipei. In October 2013 he addressed the International Fleet Review in Sydney, Australia.

PANEL 3: NAVY FORCE DEVELOPMENT

JERRY HENDRIX is a Senior Fellow and the Director of the Defense Strategies and Assessments Program at the Center for a New American Security.

A retired Captain in the United States Navy, his staff assignments include tours with the Chief of Naval Operation's Executive Panel (N00K), where his efforts centered on Homeland Defense, Naval Aviation, and Navy Missile Defense, the Office of the Undersecretary of Defense for Policy (Force Development) where he served as Executive Secretary for the Irregular Warfare Quadrennial Defense Review cell, and the OSD Office of Net Assessment where he assisted the Director on topics related to forecasting future capabilities and alternative security environments. From 2011-2012 he served as the Director and Designated Federal Officer of the Secretary of the Navy's Advisory Panel. In this position he assisted the Advisory Panel in their deliberations on the Department's energy policy and its approach to the Asia Pacific region. He also contributed to the 2012 Department Posture Statement to the Congress. Following the fall, 2011 Navy Inspector General's Report on the state of the Naval History and Heritage Command, he was verbally ordered by the Secretary to assume the position of Director of Naval History.

Hendrix previously served as the Navy Fellow to the Weatherhead Center for International Affairs at Harvard University where he focused on the use of naval power as an instrument of coercive diplomacy. He has been awarded a Bachelor Degree in Political Science from Purdue University, Masters Degrees from the Naval Postgraduate School (National Security Affairs) and Harvard University (History) and received his doctorate from King's College, London (War Studies). His awards include two Legion of Merit awards, and the Defense Superior Service Medal. He has twice been named the Samuel Eliot Morison Scholar by the Navy Historical Center in Washington, DC, and was also the Center's 2005 Rear Admiral John D. Hays Fellow. He also held the Marine Corps' General Lemuel C. Shepherd, Jr. Fellowship. He authored the book Theodore Roosevelt's Naval Diplomacy and received a number of awards, including the United States Naval Institute's Author of the Year and the Navy League's Alfred T. Mahan Award for Literary Achievement.

LENA ANDREWS is a PhD candidate in International Relations at the Massachusetts Institute of Technology, where she is a member of the Security Studies Program. Her research interests include U.S. civil-military relations, grand strategy, and military innovation. Before coming to MIT, Lena was a Senior Program Specialist at the U.S. Institute of Peace in Washington, DC, where she worked on a range of issues, including the Arab-Israeli conflict, Afghanistan, Pakistan, and Iraq. Lena holds a B.A. in Political Science and Philosophy from Tufts University.

JEFF KLINE is a retired naval officer with 26 years of service. Jeff is currently a Professor of Practice in the Operations Research department and holds the Chair of Systems Engineering Analysis at the Naval Postgraduate School. He teaches Joint Campaign Analysis, executive risk assessment and coordinates maritime security education programs offered at NPS. Jeff supports applied analytical research in maritime operations and security, theater ballistic missile defense, and future force composition studies. He has served on several Naval Study Board Committees. His NPS faculty awards include the Superior Civilian Service Medal, 2011 Institute for Operations Research and Management Science (INFORMS) Award for Teaching of OR Practice, 2009 American Institute of Aeronautics and Astronautics Homeland Security Award, 2007 Hamming Award for interdisciplinary research, 2007 Wayne E. Meyers Award for Excellence in Systems Engineering Research, and the 2005 Northrop Grumman Award for Excellence in Systems Engineering. He is a member of the Military Operations Research Society and the Institute for Operations Research and Management Science.

PAUL GIARRA is the President of Global Strategies & Transformation, a professional services firm and strategic planning consultancy providing national security strategic analysis, defense concept development, military transformation expertise, defense industry strategic planning, and applied history as a planning tool.

Mr. Giarra is a strategic planner and national security analyst for Japan, China, East Asia, and NATO futures. As a military transformation expert, he has supported transformation and experimentation in the Office of the Secretary of Defense; at U.S. Joint Forces Command; at the U.S. Pacific Command; at NATO Headquarters; and at NATO Allied Command Transformation. He is a frequent contributor to and commentator on China military futures, the U.S. Navy's maritime strategy, and the U.S.-Japan alliance, and taught net assessment best practices to international students at the U.S. Naval Postgraduate School.

Paul Giarra is also a Non-Resident Senior Fellow in the Asia-Pacific Security Program at the Center for a New American Security (CNAS).

During his Naval career, Mr. Giarra was a Naval aviator; a naval strategic planner; a political-military strategic planner for Far East, South Asia and Pacific issues; and managed the U.S.-Japan alliance in the Office of the Secretary of Defense. He is a graduate of Harvard College; the U.S. Naval War College; and the National War College-equivalent National Institute for Defense Studies in Tokyo.

ROGER DUCEY joined the NSA faculty in 2002 teaching the Policy Analysis courses and serving as the senior Air Force advisor to the Naval War College. He retired after almost 30 years of service at the end of 2006. Since then he has taught the Leadership Concepts courses. Just prior to coming to the Naval War College, he commanded the 319th Air Expeditionary Group (Provisional) deployed to Shaikh Isa Air Base, Bahrain in support of Operation ENDURING FREEDOM from October 2001 to March 2002 and served as the 319th Support Group Commander at Grand Forks Air Force Base, North Dakota. He began his military career as a missile launch officer, attended undergraduate pilot training, and flew KC-135A, R, R/T, and EC-135 aircraft. He served as operations officer and commander of the 99th Air Refueling Squadron, deputy commander, 19th Operations Group, and commanded squadron deployments in support of Operations RESTORE HOPE, RESTORE DEMOCRACY, DELIBERATE FORCE, and DENY FLIGHT. He served in various staff positions at Headquarters, Strategic Air Command and served as Deputy Chief, Aircrew Operations and Training Division, Headquarters, Air Mobility Command. He holds a Bachelors of Business Administration Degree in International Finance from the University of Miami and Master's Degrees in Aviation Management from Embry-Riddle Aeronautical University and in National Security and Strategic Studies from the U.S. Naval War College.

PANEL 4: NEW PERSPECTIVES ON MARITIME STRATEGY

LUKAS MILEVSKI is a member of the Changing Character of War Programme at the University of Oxford, where he holds a Smith Richardson Strategy and Policy Fellowship for 2015-16 to research and write a manuscript on contemporary Baltic defense from a strategic and historical perspective. He received his PhD from the University of Reading in 2014, where he studied strategy under Colin S. Gray. The 2010 recipient of the RUSI Trench Gascoigne essay competition first prize, he has since 2011 published, in a variety of military and strategic studies journals, articles based in both the theory and the history of the breadth of strategy-related topics. Milevski's first book, *The Evolution of Modern Grand Strategic Thought*, will be published by Oxford University Press in 2016.

ADAM ELKUS is a PhD student in Computational Social Science at George Mason University. Adam studies computational modeling of strategy and decision-making, and combines traditional theories and methods in strategy and defense with computational and cognitive theories of decision and choice and computer models. He is also a widely published analyst on defense and national security affairs, with work published by Foreign Policy, Slate, Armed Forces Journal, Infantry Journal, and other publications on topics in both historical and contemporary conflict. Finally, Adam is also a columnist at War on the Rocks and writes frequently on defense and technology for a variety of other publications.

NICK PRIME is a PhD Candidate in the Department of War Studies, King's College London. His thesis research focuses on the U.S. Naval War College's contribution to the scholarly study of strategy in the first decades of the Cold War. Drawing from the published and unpublished writings, personal papers and correspondence of German-American historian Dr. Herbert Rosinski, Admirals J.C. Wylie and Henry Eccles, his research explores the development of the 'control theory' of strategy. Nicholas also holds a Master of Arts from the Department of War Studies, King's College London and a Bachelor of Arts from the Department of History, University of Birmingham (UK).

PETER DOMBROWSKI is a professor of strategy in the Center of Naval Warfare Studies at the Naval War College. Previous positions include chair of the Strategic Research Department, director of the Naval War College Press, editor of the *Naval War College Review*, co-editor of *International Studies Quarterly*, Associate Professor of Political Science at Iowa State University and defense analyst at ANSER, Inc. He has also been affiliated with research institutions including the East-West Center, The Brookings Institution, the Friedrich Ebert Foundation, and the Watson Institute for International Studies at Brown University among others. Dr. Dombrowski is the author of over sixty books, monographs, articles, book chapters and government reports. Awards include a Chancellor's Scholarship for Prospective Leaders from the Alexander von Humboldt Foundation, the Navy Meritorious Civilian Service Medal, and the Navy Distinguished Civilian Service Medal. He received his B.A. from Williams College and an M.A. and Ph.D. from the University of Maryland.

PANEL 5: MARITIME WARFARE

BRYAN CLARK joined CSBA in 2013. Prior to that, he was Special Assistant to the Chief of Naval Operations and Director of his Commander's Action Group, where he led development of Navy strategy and implemented new initiatives in electromagnetic spectrum operations, undersea warfare, expeditionary operations and personnel and readiness management.

Mr. Clark served in the Navy headquarters staff from 2004 to 2011, leading studies in the Assessment Division and participating in the 2006 and 2010 Quadrennial Defense Reviews. His areas of emphasis were modeling and simulation, strategic planning and institutional reform and governance. Prior to retiring from the Navy in 2007, Mr. Clark was an enlisted and officer submariner, serving in afloat and ashore submarine operational and training assignments including tours as Chief Engineer and Operations Officer at the Navy's nuclear power training unit. Mr. Clark holds a Master of Science in National Security Studies from the National War College and a Bachelor of Science in Chemistry and Philosophy from the University of Idaho. He is the recipient of the Department of the Navy Superior Service Medal and the Legion of Merit.

FRANK HOFFMAN is currently a Senior Research Fellow at the Institute for National Strategic Studies at the National Defense University. He has been at NDU since 2011, and focuses his research on national security strategies, defense policy, military theory, future of conflict, and joint force development. Prior to this position, he worked for over 30 years with the U.S. Marines and the Department of the Navy (DON). Dr. Hoffman was a Research Fellow at the Center for Emerging Threats and Opportunities in Quantico, VA from 2001 to July 2009. While working there, he led numerous Marine research studies and was a chapter author for FM 3-24, the counterinsurgency manual. He has twice served as a senior political appointee, with his last appointment as Deputy Director of the Office of Program Appraisal in the DON, from August 2009 to June 2011. He was appointed to the Senior Executive Service in October 2009.

His active military service included tours with the 2d and 3d Marine Divisions as an infantry officer (1978 to 1986). He retired from the Marine Corps Reserve in 2001 as a Lieutenant Colonel.

He is a frequent contributor to professional journals, having published over 100 articles and essays, and authored *Decisive Force: The New American Way of War* (Praeger 1996). His latest chapter on strategic adaptation was published in *Lessons Encountered, Learning from the Long War* (NDU Press) in 2015. His awards include the DON Distinguished Civilian Service Medal, the Navy Superior Civilian Service Medal, the Navy Commendation Medal (with gold star), and the Navy Achievement Medal.

Dr. Hoffman graduated from the Wharton School (BS Economics) in 1978. He holds Master's degrees from George Mason University (M.Ed) and the US Naval War College where he graduated with Highest Distinction in 1994. He earned his PhD from the Department of War Studies, King's College London.

WILL BUNDY teaches graduate warrior-scholars and conducts research on emerging warfare concepts. Dr. Bundy earned his Doctor of Philosophy Degree at Salve Regina University, a Master of Arts Degree with Distinction at the U.S. Naval War College, and undergraduate degrees at the University of Hawaii and Leeward Community College. He is a graduate of the Baltimore City College.

Dr. Bundy served in the Navy as a career submarine officer. He served as the third African-American naval officer to command a submarine with the distinction of being the first to advance from the enlisted ranks to earn a commission and become a submarine skipper. He is one of the Centennial Seven African-American submarine skippers who served during the first 100 years of the Submarine Service. Dr. Bundy served in seven submarines including attack, nuclear attack and nuclear fleet ballistic missile submarines. Dr. Bundy earned the Defense Meritorious Service Medal, the Navy Meritorious Service Medal with Gold Star, the Navy Commendation Medal with Silver Star indicating six awards, and 12 other personal awards, campaign medals, unit commendations and service awards. He participated in Submarine

Strategic Deterrent Patrols in fleet ballistic missile submarines and participated in Navy Expeditionary service in Atlantic and Pacific Fleet attack submarines during his 30 year career. He also served as the Director of Naval Officer Candidate School, on the staff of Commander Submarine Group FIVE and Squadron THREE, and in the Nuclear Operations Division – CTF 144 Staff of the Commander, U.S. Atlantic Command.

Dr. Bundy has directed over 15 Navy and Joint concept development workshops and war games, was a significant contributor to the Maritime Ballistic Missile Defense Concept of Operations, and has written numerous Compass Check white papers on integrated air and missile defense and undersea warfare. He designed and facilitated the Navy's Integrated Air and Missile Defense War Game Series and the SSGN Capabilities Study. During his tenure as mentor for the GRAVELY Naval Warfare Research Group, formerly the Halsey CHARLIE Research Group, more than 84 warrior-scholars have completed the program and formed the GRAVELY network.

Dr. Bundy is an adjunct professor in the graduate school at Salve Regina University, and a lecturer on Leadership at Providence College.

Dr. Bundy earned the Navy Superior Civilian Service Award in August 2010 and was recognized as the 1993 Black Engineer of the Year for Achievement in Government. He also received the 1994 U.S. Navy League Dalton L. Baugh Award for Inspirational Leadership.

BJ ARMSTRONG is a PhD candidate with the Department of War Studies, King's College London. He has served as an HH-46D and MH-60S search and rescue and special warfare pilot, including as the Office-in-Charge of an amphibious gunship detachment, as well as in the Pentagon on the staff of the Secretary of the Navy. He is a graduate of the U.S. Naval Academy and holds an MA in Military History from Norwich University as well as a diploma from the Naval Command & Staff distance learning program of the Naval War College. He is a member of the Editorial Board of the U.S. Naval Institute and has lectured widely on naval history and military professionalism including at U.S. Special Operations Command, University of Chicago, and Oxford University. His two books, "21st Century Mahan: Sound Military Conclusions for the Modern Era" and "21st Century Sims: Innovation, Education, and Leadership for the Modern Era," are available from the Naval Institute Press.

DICK CROWELL is an associate professor of joint military operations at the U.S. Naval War College in Newport, Rhode Island. He specializes in information operations and cyberspace operations. Additionally, he is an associate of the Center on Irregular Warfare and Armed Groups (CIWAG). He is currently researching the emerging concepts of cyber control, cyber denial, and disputed cyber control in contemporary conflict.

Professor Crowell is a retired naval aviator with nearly 30 years of flying, staff and planning experience. He served as the assistant air operations officer for the Commander Naval Air Forces Atlantic Fleet, the operations officer for the NATO Multi-Service Electronic Warfare Support Group, and a program manager for the Commander Navy Recruiting Command. Before joining the Naval War College faculty, he taught joint professional military education phase 2 at the Joint Forces Staff College (JFSC) and information operations at the Joint Command, Control and Information Operations School at JFSC.

He earned a Master of Arts in National Security and Strategic Studies from the Naval War College and a Bachelor of Science from Massachusetts Maritime Academy. richard.crowell@usnwc.edu

PANEL 6: HUMANITARIAN ASSISTANCE AND DISASTER RELIEF

MIKE LAPPI is the Director of Field Operations and the program lead for civilian-military affairs at the Harvard Humanitarian Initiative in Cambridge, MA. Dr Lappi has extensive national and international experience in the fields of humanitarian assistance and disaster response having served in Africa, the Caribbean, Latin America, the Middle East, Southeast Asia, and the United States. Most notably, he provided critical leadership to the American Red Cross during Hurricane Katrina and Rita relief efforts, as well as to Partners In Health, the Clinton Health Access Initiative, and the US Department of Defense following the earthquake in Haiti. In addition to these efforts, Dr Lappi serves on the Board of Directors for the Lone Survivor Foundation in support of rehabilitation and recovery programs for returning veterans and their families.

As a Naval Medical Officer, Dr Lappi has served in several senior leadership positions during his 17 yrs of active and reserve duty, including tours as the Joint Special Operations Task Force Surgeon, Afghanistan, and the Naval Special Warfare Task Unit Surgeon, Horn of Africa. He currently serves as the Reserve Specialty Leader for Undersea Medicine and is a Captain in the United States Navy.

Dr Lappi has degrees from the University of Miami (BS), The Ohio State University (MS, PhD), Ohio University (DO), and the Harvard School of Public Health (MPH), as well as a diploma from the United States Naval War College (Command and Staff Program). He is Board Certified in Occupational and Environmental Medicine, a Fellow of the American College of Occupational and Environmental Medicine, and holds appointments at the Harvard Medical School, Harvard School of Public Health, Cambridge Health Alliance, and the U.S. Naval War College.

RONAK PATEL earned his medical degree from the University of California, San Francisco and completed his residency at the Harvard-Affiliated Emergency Medicine Residency Program, Brigham and Women's Hospital and Massachusetts General Hospital. He earned his MPH from the Johns Hopkins Bloomberg School of Public Health. He founded and led the Urbanization and Crisis Program at the Harvard Humanitarian Initiative before moving to Stanford University.

Dr. Patel's work focuses primarily on the challenges and opportunities presented by rapid urbanization for the health and well-being of vulnerable populations and for humanitarian crises. His research focuses on exposing and disaggregating cumulative risks and developing tools and interventions to mitigate these risks to health and development. His recent work has included projects on disaster microinsurance for local market recovery in India, slum upgrading impacts, resilience to urban violence in Columbia, social cohesion and disaster risk reduction in Haiti, fragile cities and indicators for vulnerability and early crisis in urban slums in Kenya. He works through community based organizations (CBOs) and aid agencies to collect data and implement projects for marginal. In addition to numerous publications and presentations, he has led or participated on multiple expert working groups to develop policies and programs for reducing urban vulnerability, improving operational effectiveness and health outcomes and building resilience.

JOE DiRENZO is the Coast Guard's Director of Research partnerships. He is a retired Coast Guard officer, who spent nine years in the Navy, in both the submarine and surface warfare communities. In 1991 he transitioned to the United States Coast Guard and was assigned to several cutters including command of USCGC JEFFERSON ISLAND. Following his change of command in May of 1999, Dr. DiRenzo was detailed as the inaugural Coast Guard Liaison Officer assigned to the CONSTELLATION Battle Group and PELELIU ARG deployed to the Arabian Gulf. In 2000 Dr. DiRenzo was detailed to the Atlantic Area staff Portsmouth Virginia, serving initially as the Operation's Division Regional Strategic Assessment Coordinator, then as the Anti-Terrorism Coordinator. He further served as the Assistant Chief, than Chief of Operational Planning. In 2013 Dr. DiRenzo was named Senior Advisor to the Atlantic Area Commander for Science, Technology, Innovation and Research. In October 2015 Dr.

DiRenzo moved to New London Connecticut and assumed his current position on the staff of the USCG Research and Development Center.

Dr. DiRenzo is one of the most published authors in the history of the Coast Guard. A five-time winner of the service's prestigious JOC Alex Haley award he has published over 300 articles since his retirement on various maritime terrorism and port security topics in publications such as Marine News, the Maritime Reporter, PROCEEDINGS, the American Legion magazine, National Defense and Undersea Warfare. He has lectured at numerous military and law enforcement venues involving maritime transportation security issues and was the keynote speaker at Dalhousie University's Maritime Security Conference.

Dr. DiRenzo is a 1982 graduate of the United States Naval Academy, holds a Master's in Business Administration from California Coast University, and is a graduate of both the Naval War College and Marine Corps Command and Staff College. He completed his Doctor of Philosophy in Business Administration (Homeland Security Specialization) in 2007 at Northcentral University in Prescott AZ. He is currently an Adjunct Professor at the Joint Forces Staff College, in Norfolk VA and teaches for American Military University and Northcentral University. Dr. DiRenzo is married to retired Navy Nurse Corps Captain Karen DiRenzo. They have two children Joe, a Coast Guard Lieutenant and Lauren an Elementary School teacher.

JULIA BROOKS is a legal research associate at the Harvard Humanitarian Initiative (HHI), where she specializes in international humanitarian law and policy for the Advanced Training Program on Humanitarian Action (ATHA) of the Humanitarian Academy at Harvard. She previously worked in Berlin, Germany at the Foundation "Remembrance, Responsibility & Future", Adelphi Research & Consult, the German Parliament, and the U.N. High Commissioner for Refugees as a senior fellow with Humanity in Action. She has also served in Sarajevo at the Office of the High Representative in Bosnia and Herzegovina, and in The Hague at the International Criminal Tribunal for the former Yugoslavia. She holds a Master of Arts in Law and Diplomacy from the Fletcher School of Law and Diplomacy at Tufts University, specializing in public international law, human security and transitional justice, and a Bachelor of Arts in Public Policy from Brown University, magna cum laude.

DAVE POLATTY has served as a civilian faculty at the U.S. Naval War College (NWC) since 2008 and teaches a number of courses on strategic and operational planning. He specializes in military planning, humanitarian assistance/disaster relief, command and control, and maritime security.

He routinely lectures on military strategy, U.S. military concepts and doctrine, the Navy and joint planning processes, operational art and design, command and control, maritime security, humanitarian assistance/disaster relief, noncombatant evacuation operations, and operational assessment.

Professor Polatty is co-founder and co-director of the NWC College of Operational & Strategic Leadership – Harvard School of Public Health "Joint Civilian-Military Humanitarian Working Group," which was established in May 2014 to explore academic and research collaboration areas that can improve coordination, synchronization, and integration of humanitarian responses during disaster.

He graduated from the U.S. Naval Academy in 1992, earning a BS in History. He graduated with highest distinction from the U.S. Naval War College in 2006, earning a MA in National Security Strategic Studies and receiving the Navy League William S. Sims Award. Professor Polatty is a fourth generation Naval Officer and in addition to his civilian faculty position, serves part-time as a Captain in the U.S. Navy Reserve. He has commanded four reserve units - U.S. Forces Korea, U.S. Naval Forces Southern Command/U.S. FOURTH Fleet, U.S. Strategic Command Center for Combating WMD, and is currently assigned to U.S. European Command J3. While on active duty from 1992 to 2003, he served as both a Surface Warfare Officer and Naval Flight Officer.

SHORT HISTORY OF THE U.S. NAVAL WAR COLLEGE

Founded in Newport, Rhode Island on October 6, 1884, the U.S. Naval War College is the oldest war college in the world. Commodore Stephen B. Luce, the first president, organized the War College as a place to study the highest aspects of the military profession, defining it as “a place of original research on all questions relating to war and to statesmanship connected with war, or the prevention of war.” These foundations were built upon by Captain Alfred Thayer Mahan, second president of the College, who was selected by Luce to initiate the course in Naval History. Of all the men who were to influence the institution in its early years, none was to have a more profound impact. Mahan’s views deeply affected such leaders as Henry Cabot Lodge and Theodore Roosevelt and through them and others helped shape the United States’ destiny at the turn of the twentieth century. Mahan’s Naval War College lectures, published as *The Influence of Sea Power Upon History, 1660–1783* (1890), gained worldwide acclaim and first established the U.S. Naval War College as an internationally respected institution. Other early faculty members made pioneering contributions to areas of enduring interest for the College. Among them were Charles Stockton, who drafted the first international law code for naval warfare in 1898, and William McCarty Little, who developed the art of naval war gaming between 1886 and 1914.

Functioning continuously since 1884, the War College numbers among its graduates such distinguished naval officers as Admirals Sims, Spruance, King, Nimitz, and Halsey, in addition to many others who today are holding prominent positions, such as General Mark A. Milley (Chief of Staff of the Army), Admiral Paul Zukunft (Commandant of the U.S. Coast Guard), Admiral William E. Gortney (Commander, U.S. Northern Command), General Robin Rand (Commander, Air Force Global Strike Command), and General David M. Rodriguez (Commander, U.S. Africa Command).

From its initial single course of instruction, the Naval War College has evolved into four resident colleges with more than 500 students graduating annually. The student body consists of U.S. military officers from all branches of the armed forces, career civilians from a variety of government agencies, and international naval officers. The College of Naval Warfare (CNW) is the senior U.S. school, and its counterpart for senior international officers is the Naval Command College (NCC). The College of Naval Command and Staff (CNC&S) and the Naval Staff College (NSC) are for mid-grade U.S. officers and civilians, and international officers, respectively. Each of these colleges offers a course of study which is ten months long.

The curriculum is divided into trimesters which examine Strategy and Policy (the study of fundamental military strategy with emphasis on maritime applications, foreign policy, and their interrelationships), National Security Affairs (contemporary national and international security studies encompassing international relations, foreign policy analysis, and leadership studies), and Joint Military Operations (the study of the application of military forces to the national and maritime strategies in joint and combined operations).

Also part of the curriculum, the Electives Program offers approximately 105 separate courses which complement the core curriculum. Courses include subjects ranging from military theory, operations, tactics, and logistics to area studies and international relations, management, philosophy, and law. The objective of the electives program is to provide students with a variety of professionally relevant subjects in addition to those in the prescribed curriculum. The program also utilizes the talent of the faculty and



staff by offering them the opportunity to teach independent courses in their fields of specialization, thereby diversifying and enriching the entire curriculum.

In addition to the four resident colleges, the Naval War College extends its academic program off-campus through the College of Distance Education in a series of correspondence and web-based courses and an off-campus Fleet Seminar Program. Annually, over 2000 students are enrolled in the College of Distance Education. Each year the War College also offers three, 12-day Reserve Officer Courses in National Security Affairs, Strategy and Policy, and Joint Military Operations to reserve officers selected by the Chief of Naval Reserve.

The Center for Naval Warfare Studies (CNWS) serves as a focal point, stimulus, and major source of naval strategic and campaign thought; links strategic concerns with technological developments; and integrates strategic campaign, and tactical warfighting concepts, and tests and evaluates these concepts through gaming methodologies. Over the last decade the CNWS has contributed to the development and articulation of the *Cooperative Strategy for 21st Century Seapower* and has been at the forefront of efforts to assess the nature of the changing national security environment. Studies, simulations, conferences and participation in national or international policy forums by members of CNWS have explored the whole spectrum of political-military issues ranging from the national security strategy interservice and interagency coordinated actions, multinational cooperation, oceans law and policy, and naval policies and strategies. The departments of the CNWS have responsibility for student and staff research and gaming and for policy and strategy analysis for the unified and service commands and agencies of the U.S. government.

The work begun more than one hundred years ago by Luce and Mahan continues today. As graduates well know, the curriculum is both demanding and rewarding. For the military professional, the unique education provided by the Naval War College is unrivaled. In recognition of the academic rigor and educational excellence of its program, the College has been accredited since 1991 by the New England Association of Schools and Colleges to award a Master of Arts degree in National Security and Strategic Studies.

THE NAVAL WAR COLLEGE FOUNDATION

For 45 years, the Naval War College Foundation has worked to enrich and further enhance Naval War College programs. The Foundation provides financial support to Board of Trustee-approved projects at the College for which public funds are not available. These projects range from enabling faculty research and curriculum development to providing nationally-recognized speakers for the College's evening lecture series and academic awards to recognize outstanding student achievement.

The Foundation is very proud to currently endow five academic chairs for the College. The Foundation also provides financial support for specific symposia and conferences including the Current Strategy Forum; Center on Irregular Warfare & Armed Groups; Center for Cyber Conflict Studies; China Maritime Studies Institute; Ethics; Women, Peace, and Security; and present and future worldwide international law conferences.

The Foundation is a non-profit 501(c)(3) organization. Funds are derived from individual and corporate membership contributions and grants received from individuals, other foundations and organizations.

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