

PONI 2014 FALL CONFERENCE

Air Force Nuclear Weapons Center
Kirtland AFB
Albuquerque, New Mexico

Day One Agenda: Wednesday, August 27

7:45 SHUTTLE DEPARTS FROM THE SHERATON

8:00 CONFERENCE CHECK-IN & BREAKFAST

8:40 CONFERENCE WELCOME

Clark Murdock, Senior Adviser and PONI Director, Center for Strategic and International Studies

8:50 OPENING REMARKS

Major General Finan, Commander, Air Force Nuclear Weapons Center

9:05 PANEL 1: U.S. BILATERAL RELATIONS WITH CHINA AND RUSSIA

Panel Moderator: Rich Wagner, Nonresident Senior Advisor, Center for Strategic and International Studies

Panel Reviewer: Kerry Kartchner, Senior Advisor for Strategic Communications, Department of International Security and Nonproliferation, Department of State

The Prospects for U.S.-Russian Collaboration after Ukraine

Matthew Fargo, Associate Program Manager, CRDF Global

U.S.-Russian Arms Control Relations: Nuclear Reductions, Treaty Compliance, and Missile Defense

Thomas Karako, Visiting Fellow, Project on Nuclear Issues, Center for Strategic and International Studies

U.S. Ballistic Missile Defense Architecture in Northeast Asia: Maintaining Stability in an Increasingly Unstable Environment

Zachary Hosford, Associate Fellow, Asia-Pacific Security Program, Center for New American Security

Operational-Level Engagement and Confidence/Trust-Building in the U.S.-Chinese Relationship

Tong Zhao, Associate, Nuclear Policy Program, Carnegie Endowment for International Peace

10:35 BREAK

**10:55 PANEL 2: NEW ISSUES FOR NUCLEAR NONPROLIFERATION AND DISARMAMENT
VERIFICATION**

Moderator: Bryan Fearey, Director, National Security Office, Los Alamos National Laboratory

Panel Reviewer: Dale Shirasago, Contractor Support Analyst, Office of the Secretary of Defense for Nuclear Matters

Implications of the U.S. Unilaterally Disarming

Curtis Chambellan, Program Engineer, National Nuclear Security Administration

**How the Evolution of 3-D Printing Presents the Newest Challenge to Nonproliferation
Norms and Global Export Controls**

Aaron Richards, M.S. Candidate in Defense and Strategic Studies, Missouri State University

Strategic Trade Controls and its Challenges: The Plight and Prospects of Transparency

Evan Thompson, Candidate, M.A. in Security Studies, Georgetown University

**Verification and Monitoring Technologies: Developing R&D Strategies for the Full
Lifecycle**

Kelsey Hartigan, Program Officer, Material Security and Minimization & Nuclear Security Project, Nuclear Threats Initiative

**12:25 LUNCH & BREAKOUT DISCUSSION:
SCENARIOS FOR THE “DAY AFTER” FAILED IRANIAN NUCLEAR NEGOTIATIONS****2:30 BREAK****2:50 PANEL 3: DEVELOPING TECHNOLOGIES FOR NUCLEAR WEAPONS ANALYSIS**

Moderator: Brig. Gen. Jim Dawkins, Principal Assistant Deputy Administrator for Military Application, National Nuclear Security Administration

Panel Reviewer: Rick Fellerhoff, Director, Nuclear Weapons Planning Operations and Integration and COO for the NW Program, Sandia National Laboratory

**How to Dismantle an Atomic Bomb (Virtually): Use of Virtual Reality Simulations in
Nuclear Treaty Verification**

Cervando Bañuelos, M.A. Candidate in Nonproliferation and Terrorism Studies, Monterey Institute of International Studies

**An Analysis of Methods to Determine Nuclear Weapons Yield Using Digital Fireball
Films**

Captain David Lynes, B61-12 Senior Test Engineer, Nuclear Capabilities Directorate, Air Force Nuclear Weapons Center

Estimating Fireball Temperature from a Nuclear Detonation Using Digital Film

Major Matthew Gettings, Test Scientist, DTRA-CXTT

Defining a Methodology for Data Analysis Using Streak Films

Major Christopher Lenyk, Test Scientist, Defense Threat Reduction Agency

Neutron Shielding Effectiveness of Multifunctional Composite Materials

Major Anthony D. Marchand, Test Scientist, Defense Threat Reduction Agency

4:20 END OF DAY ONE PANEL DISCUSSIONS

4:30 SHUTTLE DEPARTS FOR THE SHERATON

6:00 RECEPTION

Sheraton Uptown Hotel, Albuquerque

7:00 DINNER & KEYNOTE

Major General Thompson, Director of Plans and Policy, U.S. Strategic Command

8:30 END OF DAY ONE

Day Two Agenda: Thursday, August 28**7:45 SHUTTLE DEPARTS FROM THE SHERATON****8:30 BREAKFAST & BREAKOUT RECAP****9:20 BREAK****9:40 PANEL 4: CASE STUDIES IN NUCLEAR NONPROLIFERATION AND DISARMAMENT AFFAIRS**

Moderator: Hans Kristensen, Director, Nuclear Information Project, Federation of American Scientists

Panel Reviewer: Clark Murdock, Senior Adviser and PONI Director, Center for Strategic and International Studies

Al Qaeda's Nuclear Quest

Bennett Seftel, Research Intern, Defense and National Security Group, Center for Strategic and International Studies

Israel and the CTBT: Creating Conditions for Ratification

Anne-Marie Riitsaar, M.A. in Nonproliferation and Terrorism Studies, Monterey Institute of International Studies

Brazil's Nuclear Ambitions: Addressing Challenges to the Nonproliferation Regime

Lindsay Miller, Research Intern, Project on Nuclear Issues, Center for Strategic and International Studies

Scottish Independence and Trident Nuclear Weapons: Why the United Kingdom Ministry of Defense Should Prepare for Scottish Disarmament

James McKeon, Herbert Scoville Jr. Peace Fellow, Managing Across Boundaries Program, The Stimson Center

11:00 BREAK**11:20 PANEL 5: REGIONAL NUCLEAR DYNAMICS AND SECURITY CONCERNS**

Moderator: Steve Henry, Director of Global Security, Nevada National Security Site

Panel Reviewer: Steve Harper, Dean, Defense Threat Reduction University, and the Commandant, Defense Nuclear Weapons School

Nonproliferation in the Middle East: Russia's Contribution to Multilateral Efforts

Lily Vaccaro, M.A. Candidate in Nonproliferation and Terrorism Studies, Monterey Institute of International Studies

Escalation Links in South Asia: From Sub-Conventional to Nuclear War

Elizabeth Whitfield, Intern, South Asia Program, The Stimson Center

Anticipating Regime Collapse in Pakistan: The Case for Threat Reduction

Kaitlyn Duffy, Research Intern, Project on Nuclear Issues, Center for Strategic and International Studies

Asymmetric Conflict and Tactical Nuclear Weapons in South Asia

Julia Thompson, Research Associate, South Asia Program, The Stimson Center

12:40 LUNCH & KEYNOTE ADDRESS

Major General Finan, Commander, Air Force Nuclear Weapons Center

2:00 DEPART FOR OPTIONAL TOURS

Tour 1: The Defense Threat Reduction Agency Nuclear Weapons Instructional Museum

The DTRA NWIM traces the history and development of the U.S. nuclear stockpile from its beginning to present day. The NWIM contains displays of all stockpiled U.S. nuclear weapons.

Touring the NWIM display will provide visitors with a rare opportunity to view the weapons exhibits and discuss stockpile issues with experienced instructors.

Tour 2: The 58th Special Operations Wing

The 58th SOW mission is to train mission-ready special operations, rescue, missile site support, and DV airlift advanced helicopter, and MC-130 aircrew students. The unit provides people and airlift needed in response to crises around the world and assists civilian authorities in regional rescues.

There are currently four types of aircraft that are flown out of the 58th SOW, to include two variants of helicopters (Huey and Pave Hawk), specialized versions of the C-130, and the CV-22 Osprey tilt-rotor aircraft. This tour will allow visitors to walk around the 58th SOW aircraft and see the Monster Garage, where training equipment is stored.

5:00 END OF CONFERENCE

SPEAKER BIOGRAPHIES

CONFERENCE WELCOME

Dr. Clark Murdock, Senior Adviser and Director of the Project on Nuclear Issues, Center for Strategic and International Studies

Clark Murdock is the senior adviser for the Defense and National Security Group at CSIS and director of the Project on Nuclear Issues (PONI). Joining CSIS in January 2001, Dr. Murdock has completed studies on a wide range of defense and national security issues, including strategic planning, defense policy and governance, and U.S. nuclear weapons strategy and policy. Dr. Murdock is currently leading a “track two” dialogue on nuclear policy issues involving the United States, United Kingdom, and France, and he recently finished directing a study titled “Building the 2021 Affordable Military.” Dr. Murdock has also completed studies on methodological approaches to building force-planning constructs and on nuclear posture implications of U.S. extended deterrence and assurance. His experience in defense and security policy spans decades, including serving in the Office of the Air Force Chief of Staff as Deputy Special Assistant to the Chief for Long-Range Planning. He served for several years on the House Armed Services Committee as a professional staff member and as a senior policy adviser to then-Chairman Les Aspin. Before turning to government services, Dr. Murdock taught for 10 years at the State University of New York at Buffalo. He is an honors graduate of Swarthmore College and holds a Ph.D. in political science from the University of Wisconsin at Madison.

OPENING REMARKS

Major General Sandra Finan, Commander, Air Force Nuclear Weapons Center

Maj. Gen. Sandra E. Finan is the Commander, Air Force Nuclear Weapons Center, Kirtland AFB, NM. The center is composed of a headquarters staff, one wing and two wing-equivalent directorates: the 377th Air Base Wing and Nuclear Capabilities Directorate at Kirtland AFB; and the ICBM Systems Directorate at Hill AFB, UT. The AFNWC comprises more than 3,500 Airmen at 11 locations in the United States and Europe and is responsible for the entire scope of nuclear weapons sustainment functions. General Finan entered the Air National Guard in 1982 as an enlisted cryptographic equipment repairperson. She received her Air Force commission in 1985 as a distinguished graduate of Officer Training School. She has served in a variety of space and nuclear assignments in missile crew operations; training and evaluations; satellite command and control; and satellite operations. The general has held senior staff assignments as the Air Force Global Strike Command Inspector General and the Air Force Space Command Director of Nuclear Operations. Her commands include a space operations squadron and missile wing. General Finan has deployed to the Combined Air Operations Center in Southwest Asia as the Director of Space Forces in support of Operations Iraqi Freedom and Enduring Freedom. Previously, she was the Principal Assistant Deputy Administrator for Military Application, Office of Defense Programs, National Nuclear Security Administration, Department of Energy.

PANEL 1: U.S. BILATERAL RELATIONS WITH CHINA AND RUSSIA

Panel Moderator: Dr. Rich Wagner, Nonresident Senior Advisor, Center for Strategic and International Studies

Dr. Rich Wagner is a physicist whose work has been in science and technology related to nuclear weapons, missile defense, treaty-verification, nonproliferation, countering nuclear terrorism, and information technology for defense and intelligence applications. Between 1963 and 1981, he worked at the Lawrence Livermore National Laboratory, including as the Laboratory's Deputy Director. Between 1981 and 1986 he was Assistant to the Secretary of Defense for Atomic Energy, a Senate-confirmed appointment with responsibility for oversight of all of DOD's activities related to nuclear weapons and chemical and biological defense programs. He has been a member of the Defense Science Board, USSTRATCOM's Strategic Advisory Group, and DOD's Threat Reduction Advisory Committee. He has chaired the Defense Intelligence Agency's and USPACOM's Advisory Boards. In 1992 he was made Commandeur de l'Ordre National de Mèrite by the government of France. Wagner is the 2012 recipient of DOD's Eugene Fubini Award for career contributions in providing advice and guidance to the Department.

Panel Reviewer: Dr. Kerry Kartchner, Senior Advisor for Strategic Communications, Department of International Security and Nonproliferation, Department of State

Dr. Kartchner is currently as Senior Advisor for Strategic Communications in the Department of International Security and Nonproliferation. His principal portfolio in this assignment is academic outreach. He recently completed a detail to the Defense Threat Reduction Agency, where he was Senior Foreign Policy Advisor to the Associate Director for Strategy and Plans. He has previously served as Acting Director of the Office of Strategic Planning and Outreach in the Bureau of International Security and Nonproliferation, as the ISN Bureau Public Diplomacy Officer, and as Senior Advisor for Missile Defense Policy in the Bureau of Arms Control, U.S. Department of State. His current duties focus on developing and executing a broad strategic communications agenda, including nonproliferation and arms control, as well as advanced planning and analysis initiatives related to other aspects of U.S. policy toward weapons of mass destruction.

Dr. Kartchner is the co-editor, along with Jeffrey Larsen, of a volume just published by Stanford University Press, titled *On Limited Nuclear War in the 21st Century*, 2014.

Dr. Kartchner is also a Distinguished Faculty member in Missouri State University's Graduate Department of Defense and Strategic Studies, located near Washington, D.C., where he teaches courses on arms control, strategy, defense planning, and strategic culture. He is the co-editor of a textbook on strategic culture published in 2009 by Palgrave Macmillan, titled *Strategic Culture and Weapons of Mass Destruction*.

His Ph.D. and MA in International Relations are both from the University of Southern California (1984 and 1987). His BA is from Brigham Young University (1980). He is a frequent speaker on topics related to nonproliferation, arms control, and ballistic missile defense.

Mr. Matthew Fargo, Associate Program Manager, CRDF Global

Matthew Fargo is an Associate Program Manager at CRDF Global. His research focuses on transatlantic relations, the future of NATO, science diplomacy and international technical exchanges,

missile defense, nuclear deterrence in the 21st century, command and control, and WMD nonproliferation. Fargo received his B.A. from the University of California, Berkeley, in Near Eastern Studies. He also holds an M.A. in Conflict Resolution from Georgetown University.

Dr. Thomas Karako, Visiting Fellow, Project on Nuclear Issues, Center for Strategic and International Studies

Thomas Karako is a visiting fellow with the International Security Program and the Project on Nuclear Issues at the Center for Strategic and International Studies (CSIS) in Washington, D.C. His research focuses on national security, U.S. nuclear forces, missile defense, proliferation, and public law. He is also an assistant professor of political science and director of the Center for the Study of American Democracy at Kenyon College. During 2010-2011, Karako was an American Political Science Association Congressional Fellow, during which time he worked with the professional staff of the House Armed Services Committee on U.S. strategic forces, nonproliferation, and NATO. At Kenyon College, he taught U.S. foreign and defense policy, national security law, American government, the presidency, and international law. He previously taught national security policy, American government, and constitutional law at Claremont McKenna College and California State University, San Bernardino. He has published widely on national security, state politics, executive-congressional relations and the thought of Niccolo Machiavelli. Karako received his Ph.D. in politics and policy from Claremont Graduate University and his B.A. from the University of Dallas.

Mr. Zachary Hosford, Associate Fellow, Asia-Pacific Security Program, Center for New American Security

Zachary M. Hosford is an Associate Fellow in the Asia-Pacific Security Program at the Center for a New American Security (CNAS). His recent work has focused on the future of the U.S.-Japan and U.S.-ROK alliances, Taiwan security issues, China's military and nuclear force modernization, North Korea's nuclear weapons program, maritime security in the East and South China Seas and Aum Shinrikyo's efforts to create chemical and biological weapons. In 2013, he was awarded the Bacevich Fellow position at CNAS, in memory and in honor of 1LT Andrew J. Bacevich, Jr., USA, and previously served as a Research Associate and as the Special Assistant to the two co-founders of the organization, Kurt Campbell and Michèle Flournoy. He also ran the Next Generation National Security Leaders Program, dedicated to fostering young national security analysts and practitioners. Prior to joining CNAS, Hosford held positions at the Arms Control Association in Washington, D.C. and – through a program organized by George Mason University – the Palestinian Authority's Ministry of Foreign Affairs in the West Bank city of Ramallah. His writing has been published in the *Diplomat*, *World Politics Review*, *Arms Control Today* and *Infinity Journal* and he has been interviewed by various U.S. and Asian media outlets, including *Global Security Newswire*, *McClatchy News*, *Bloomberg Radio*, *Voice of America*, *Kyodo News*, *Jiji Press* and *CCTV*. Hosford earned his M.A. in Security Studies from Georgetown University's Edmund A. Walsh School of Foreign Service and his B.A. from Franklin & Marshall College in Lancaster, PA, where he majored in Scientific and Philosophical Studies of the Mind and minored in Astronomy.

Mr. Tong Zhao, Associate, Nuclear Policy Program, Carnegie Endowment for International Peace

Tong Zhao is an associate in Carnegie's Nuclear Policy Program based at the Carnegie–Tsinghua Center for Global Policy. His research focuses on strategic security issues, including nuclear arms control, nonproliferation, missile defense, strategic stability, and China's security and foreign policy. He was previously a Stanton Nuclear Security Fellow with the Managing the Atom Project and the International Security Program at the Belfer Center for Science and International Affairs at Harvard University. He has previously held a number of other positions, including as a nonresident WSD-Handa Fellow at Pacific Forum CSIS and working for the Office of Foreign Affairs of the People's Government of Beijing Municipality. He currently serves on the Executive Board of the International Student/Young Pugwash. He conducted his Ph.D. research in the Science, Technology, and International Affairs Program at the Sam Nunn School of Georgia Institute of Technology, and was a recipient of the Outstanding Ph.D. Student Award. He has a B.S. in physics and an M.A. in international relations, both from Tsinghua University.

PANEL 2: NEW ISSUES FOR NUCLEAR NONPROLIFERATION AND DISARMAMENT VERIFICATION

Panel Moderator: Dr. Bryan Fearey, Director, National Security Office, Los Alamos National Laboratory

Bryan Fearey is Director of the National Security Office at Los Alamos National Laboratory. He has served at Los Alamos for over 25 years in a variety of roles including Senior National Security Science Advisor. He also served as Arms Control R&D Program Manager for the Department of Defense (DOD) and as U.S. Science Advisor for START and INF Treaty negotiations in Geneva. His current responsibilities include addressing national security technical-policy issues including, inter alia, arms control (CTBT, FMCT, new START, etc.), verification, transparency, nonproliferation, the nuclear deterrent (e.g., NPR), and nuclear energy futures. He has received numerous awards including two Distinguished Performance Awards and three NNSA Awards of Excellence, as well as the highest non-career DOD award for Exceptional Public Service.

Panel Reviewer: Mr. Dale Shirasago, Contractor Support Analyst, Office of the Secretary of Defense for Nuclear Matters

Dale Shirasago currently serves in the Office of the Secretary of Defense Nuclear Matters office as a Contractor support analyst. He has provided vision and direction to reengineer organization and processes to better address United States Interagency issues affecting the Nuclear Command and Control System. He has provided direct operational support to the Office of the Secretary of Defense, Joint Staff, and nuclear combatant commanders; developed operational aspects of nuclear weapons employment policy and managed the development, maintenance, and execution of the strategic war plan. He has built, distributed, and maintained critical decision documents for the president to assist with executing U.S. nuclear forces; provided comprehensive strategic war plans advice and briefings for the president, Secretary of Defense, and Chairman of the Joint Chiefs of Staff. He has operated the nation's large phased array warning radar system that continuously monitored the Pacific approaches to North America which provided real-time warning of sea-launched and intercontinental ballistic missile attacks as well as a missile launch officer. Shirasago has experience in countering nuclear threats includes conducting no-notice inspections on Iraqi missile production facilities and provided expertise to other United Nations weapons inspections

teams including IAEA inspectors. He has served as an analyst in the Strategic, Proliferation, and Military Affairs Office, Bureau of Intelligence and Research, Department of State. He graduated from the United States Air Force Academy with a B.S. in International Affairs and he holds an M.S. in Operations Research from the Air Force Institute of Technology. He served almost 27 years in the United States Air Force.

Mr. Curtis Chambellan, Program Engineer, National Nuclear Security Administration

Curtis Chambellan has been with the Department of Energy/National Nuclear Security Administration since 1984. During that time he has worked in nuclear materials production, the nuclear weapons surveillance program, and nuclear weapons quality assurance. Chambellan is also retired U.S. Army Reserve Colonel. He most recently served two years on active duty at the United States Strategic Command. He has a B.S. degree in Chemical Engineering, an M.S. degree in Industrial Engineering, and an M.S. degree in National Security Strategy.

Mr. Aaron Richards, M.S. Candidate in Defense and Strategic Studies, Missouri State University

Aaron Richards is a second-year Master's student at Missouri State University's Graduate Department of Defense and Strategic Studies program in Fairfax, Virginia. His main focuses include U.S. policy on Iran and nuclear nonproliferation issues emerging from new technologies. Richards will be writing his Master's thesis on how Iran's quest for regional hegemony will impact U.S. defense and foreign policy in the Middle East. In addition, Richards recently was named a Rumsfeld Graduate Fellow and previously interned with the Foreign Policy Initiative as a researcher.

Mr. Evan Thompson, M.A. Candidate in Security Studies, Georgetown University

Evan Thompson is a second-year Master's student of Security Studies at Georgetown University where he concentrates in Unconventional Weapons and Nonproliferation. He began his career in nonproliferation while studying International Affairs at the University of Georgia. In his senior year he worked with the Center for International Trade and Security as a Security Leadership Fellow. The research in strategic trade control violations led to his next fellowship with the Bulletin of the Atomic Scientists as a Leonard M. Rieser Fellow. Thompson continued his work in nonproliferation this summer at the State Department's Office of Export Control Cooperation. He will graduate from Georgetown in 2015 and hopes to continue in the field of nonproliferation and international security in the future.

Ms. Kelsey Hartigan, Program Officer, Material Security and Minimization & Nuclear Security Project, Nuclear Threat Initiative

Kelsey Hartigan is the Program Officer for the Material Security and Minimization Program and the Nuclear Security Project at the Nuclear Threat Initiative (NTI) in Washington, D.C. Her work focuses primarily on monitoring and verification issues, U.S. modernization programs, and how new technologies and innovations can be leveraged for future security challenges. Prior to joining NTI, Hartigan worked as a nonproliferation and defense policy analyst for the National Security Network. She has also worked with the United States Institute of Peace, the International Security and Nuclear Weapons program at the Henry L. Stimson Center, and the U.S. Department of State's Delegation to

the Conference on Disarmament in Geneva, Switzerland. Hartigan is a member of the Institute of Nuclear Materials Management (INMM), the International Network of Emerging Nuclear Specialists, and Women in International Security. She currently serves as Division Deputy for the INMM Nonproliferation and Arms Control Technical Division and was recently elected as a Member at Large for INMM's Northeast Chapter. A graduate of Purdue University, she is currently an M.A. candidate in Security Studies, with a focus on Technology and National Security, at Georgetown University's Edmund A. Walsh School of Foreign Service.

PANEL 3: DEVELOPING TECHNOLOGIES FOR NUCLEAR WEAPONS ANALYSIS

Panel Moderator: Brigadier General James Dawkins, Principal Assistant Deputy Administrator for Military Application, Defense Programs, National Nuclear Security Administration

Brig. Gen. Jim Dawkins, Jr. currently serves within the National Nuclear Security Administration's Defense Programs as the Principal Assistant Deputy Administrator for Military Application (PADAMA). He is responsible for maintaining global nuclear deterrence through effective planning, maintenance, and enforcement of safe, secure, and reliable nuclear weapons stockpile and its associated materials, capabilities, and technologies. In his role as PADAMA, he serves as a bridge between the NNSA and the DOD on joint nuclear operational and infrastructural matters, engaging in frequent dialogue with the various military services concerning weapons issues specific to each service and supporting related programming and budget matters pertinent to the NNSA and the DOD. Brig. Gen. Dawkins was commissioned in 1989 from Air Force Officer Training School. He has commanded at the wing, group and squadron level. Prior to his current position, he was the commander, 5th Bomb Wing, Minot AFB, ND.

Panel Reviewer: Mr. Rick Fellerhoff, Director, Nuclear Weapons Planning Operations and Integration and COO for the NW Program, Sandia National Laboratory

Rick Fellerhoff is the Director for the Nuclear Weapons Planning Operations and Integration and COO for the NW Program at Sandia. He is responsible for successful operation of the Nuclear Weapon Strategic Management Unit, including strategic planning; alignment of scope, schedule and resources; ensuring effective communications and relationships with customers and stakeholders, and implementation of efficient and effective management processes. From 2007 to 2013, Fellerhoff was the Director of Surety Assessment in the Engineering Analysis Center at Sandia. In this role, Fellerhoff led and managed diverse and important set of engineering capabilities serving the Laboratories and NNSA.

Mr. Cervando Bañuelos, M.A. Candidate in Nonproliferation and Terrorism Studies, Monterey Institute of International Studies

Cervando Bañuelos is a second-year Master's candidate at the Monterey Institute of International Studies. He holds a B.S. in Nuclear Engineering with a minor in radiological health engineering from Texas A&M University. For the summer of 2014, Bañuelos was a Nuclear Safeguards intern at Lawrence Livermore National Laboratory as well as a researcher for the James Martin Center for Nonproliferation Studies (CNS). At CNS, Bañuelos is coauthoring a study on the challenges and

feasibility of low-enriched uranium-fueled nuclear submarines while also researching treaty verification protocols. His primary research interest is the study of nuclear forensic methods and their policy applications on international organizations and U.S. national laboratories.

Captain David Lynes, B61-12 Senior Test Engineer, Nuclear Capabilities Directorate, Air Force Nuclear Weapons Center

Captain David D. Lynes is currently responsible for leading a team of ten Air Force military, civilians, and contractors in developing, executing, and reporting on Joint Tests that are conducted on the B61-12, a \$2 billion weapon acquisition. Previously, Capt. Lynes served as a flight test engineer at Nellis AFB in Las Vegas, NV. While there, Capt. Lynes led flight test projects on the HH-60, HC-130, and F-22. In 2010 he deployed with the United States Special Operations Command to Bagram Air Base, Afghanistan as a liaison officer to the Program Executive Officer for Fixed Wing Aircraft. In 2011, Capt. Lynes entered the Graduate School of Engineering and Management, Air Force Institute of Technology (AFIT). While at AFIT, Capt. Lynes' research focused on analyzing historical nuclear test films to gather new data about nuclear weapon effects.

Major Matthew Gettings, Test Scientist, DTRA-CXTT

Major Matthew Gettings graduated from the United States Air Force Academy with a B.S. in Electrical Engineering in May 2003. He was commissioned as a 2nd Lieutenant in the United States Army. Soon after commissioning he completed the U.S. Army Initial Entry Rotary Wing, CH-47D Advanced Graduate Flight Training, and SERE courses. Major Gettings has multiple deployments to Iraq and Afghanistan (2005-2010) where he has flown numerous combat missions. He has served in roles including: platoon leader, air mission commander, and aviation planner at the brigade and corps level. After completing the Aviation Captains Career Course, Major Gettings was reassigned as a Nuclear and Counterproliferation Officer, FA52. In March 2014, he graduated from the Air Force Institute of Technology with a M.S. in Nuclear Engineering. Major Gettings is currently serving as a test scientist assigned to the Defense Threat Reduction Agency in Albuquerque, NM.

Major Christopher Lenyk, Test Scientist, Defense Threat Reduction Agency

Major Christopher Lenyk attended Rensselaer Polytechnic Institute in Troy, New York. He graduated with a Bachelor of Science in Nuclear Engineering in 2002. After commissioning into the Air Force as a 2nd Lieutenant he has served in a variety of technical assignments including high-powered microwave research and development, nuclear treaty monitoring, and foreign space system intelligence.

In March 2014, Christopher graduated from the Air Force Institute of Technology earning a Master's of Science in Nuclear Engineering. He is currently assigned to the Defense Threat Reduction Agency in Albuquerque, New Mexico as a Test Scientist.

Major Anthony Marchand, Test Scientist, DTRA J9-CXTT

Major Anthony Marchand graduated from the University of Minnesota with a B.S. in Astrophysics in May 2001 and was commissioned as a 2nd Lieutenant in the United States Army. Soon after commissioning, he completed the U.S. Army Initial Entry Rotary Wing and CH-47D Advanced Graduate Flight Training at Fort Rucker, AL. Major Marchand is qualified to fly the CH-47D, C-12,

and Dash 7. As the Company Commander of C Company 204 MI BN, then Capt. Marchand deployed his company to Iraq (2006-2007) where he flew numerous combat missions. He has served in numerous Army assignments including: Platoon Leader, Training Officer (S3), Company Commander, Battalion Communications Officer (S6), and Assistant Professor of Military Science at the University of San Francisco. Major Marchand was designated as a Nuclear and Counterproliferation Officer (FA52) in October 2008. In March 2013, he graduated from the Air Force Institute of Technology with a M.S. in Nuclear Engineering. Major Marchand is currently serving as a test scientist assigned to the Defense Threat Reduction Agency (DTRA) in Albuquerque, NM supporting several projects for the DTRA Nuclear Technologies Department.

EVENING KEYNOTE ADDRESS

Major General David D. Thompson, Director of Plans and Policy, U.S. Strategic Command

Maj. Gen. David D. Thompson is Director of Plans and Policy, U.S. Strategic Command, Offutt AFB, NE. He is directly responsible to the USSTRATCOM Commander for the development and implementation of national security policy and guidance; military strategy and guidance; space and weapons employment concepts and policy; and joint doctrine as they apply to the command and the execution of its missions. He is also responsible for the development of the nation's strategic war plan, strategic support plans for theater combatant commanders and contingency planning for the global strike mission. General Thompson was commissioned in 1985 as a graduate of the U.S. Air Force Academy. He is a career space officer with assignments in operations, acquisition, research and development, and 11 levels. The general is also an Olmsted Scholar, graduate of the Senior Acquisition Course and Level III-certified Program Manager. Prior to his USSTRATCOM assignment, General Thompson was the Director of Air, Space and Cyberspace Operations, Air Force Space Command, Peterson AFB, CO.

PANEL 4: CASE STUDIES IN NUCLEAR NONPROLIFERATION AND DISARMAMENT AFFAIRS

Panel Moderator: Mr. Hans Kristensen, Director, Nuclear Information Project, Federation of American Scientists

Hans M. Kristensen is director of the Nuclear Information Project at the Federation of American Scientists where he provides the public with analysis and background information about the status of nuclear forces and the role of nuclear weapons. He specializes in using the Freedom of Information Act (FOIA) in his research and is a frequent consultant to and is widely referenced in the news media on the role and status of nuclear weapons. His collaboration with researchers at NRDC in 2010 resulted in an estimate of the size of the U.S. nuclear weapons stockpile that was only 13 weapons off the actual number declassified by the U.S. government. Kristensen is co-author of the Nuclear Notebook column in the Bulletin of the Atomic Scientists and the World Nuclear Forces overview in the SIPRI Yearbook. The Nuclear Notebook is, according to the publisher, "widely regarded as the most accurate source of information on nuclear weapons and weapons facilities available to the public." Between 2002 and 2005, Kristensen was a consultant to the nuclear program

at the Natural Resources Defense Council in Washington, D.C., where he researched nuclear weapons issues and wrote the report “U.S. Nuclear Weapons in Europe” (February 2005) and co-authored numerous articles including “What’s Behind Bush’s Nuclear Cuts” (Arms Control Today, October 2004) and “The Protection Paradox” (Bulletin of the Atomic Scientists, March/April 2004). Between 1998 and 2002, Kristensen directed the Nuclear Strategy Project at the Nautilus Institute in Berkeley, CA, and he was a Special Advisor to the Danish Ministry of Defense in 1997-1998 as a member of the Danish Defense Commission. He was a Senior Researcher with the Nuclear Information Unit of Greenpeace International in Washington D.C. from 1991 to 1996, prior to which he coordinated the Greenpeace Nuclear Free Seas Campaign in Denmark, Norway, Finland and Sweden.

Panel Reviewer: Dr. Clark Murdock

Mr. Bennett Seftel, Research Intern, Defense and National Security Group, Center for Strategic and International Studies

Bennett Seftel is a Research Intern for the Defense and National Security Group at the Center for Strategic and International Studies. He previously worked for the Berkley Center for Religion, Peace & World Affairs where he focused on the intersection of religion, law, and politics. Seftel obtained his M.A. in International Law and Global Security from Georgetown University and his B.A. in International Studies and Arabic Language from Washington University in St. Louis. His research interests include nuclear deterrence and foreign policy in the Middle East, defense and security strategy, and international law.

Ms. Anne-Marie Riitsaar, M.A. in Nonproliferation and Terrorism Studies, Monterey Institute of International Studies

Anne-Marie Riitsaar, born in Estonia, recently graduated from the Monterey Institute of International Studies where she earned a Master’s degree in Nonproliferation and Terrorism Studies. While studying at the Monterey Institute she worked as a Graduate Research Assistant at the James Martin Center for Nonproliferation Studies (CNS) where she conducted research on a project focusing on illicit trafficking of nuclear materials in the Former Soviet Union and managed the Center’s database on the Non-Aligned Movement. Last summer she served an internship at the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization in Vienna, Austria. Riitsaar’s research interests include nonproliferation regimes and treaties, the Nuclear Weapons Free Zone in the Middle East, Iran’s nuclear program, and international safeguards policies.

Ms. Lindsay Miller, Research Intern, Project on Nuclear Issues, Center for Strategic and International Studies

Lindsay Miller is a Research Intern for the Project on Nuclear Issues at the Center for Strategic and International Studies. She graduated from the University of North Carolina at Chapel Hill with a B.A. in Global Studies and Spanish. Prior to joining CSIS, Miller interned with the Westminster Foundation for Democracy while studying abroad in London. Her research interests include

international politics and social movements; specifically focusing on connections between Latin America and the Middle East. Previously, she has written on transnational political identity construction among the Lebanese diaspora community of Buenos Aires, Argentina.

Mr. James McKeon, Herbert Scoville Jr. Peace Fellow, Managing Across Boundaries Program, The Stimson Center

James McKeon serves as a Herbert Scoville Jr. Peace Fellow with Stimson's Managing Across Boundaries program. He holds a B.S. in Political Science from Northeastern University. Before joining Stimson, he worked as an intern at the White House and as a member of staff for the Scottish National Party (SNP) at the UK Parliament. While working with the SNP, McKeon focused his attention on the defense policies proposed by advocates of Scottish independence. He will be traveling to the UK in September during the independence referendum to finalize his research on the topic.

PANEL 5: REGIONAL NUCLEAR DYNAMICS

Panel Moderator: Mr. Steve Henry, Director of Global Security, Nevada National Security Site

Steve Henry is the Director of Global Security for the Nevada National Security Site. Previously Henry served as the Deputy Assistant Secretary of Defense for Nuclear Matters. Prior to his tenure at DOD, he served as Deputy Division Chief for Nuclear Weapons in the Office of the Joint Chiefs of Staff from 2000 to 2003. Before that position, he served as Associate Deputy Assistant Secretary for Nuclear Weapons Management at the U.S. Department of Energy. Henry laid the foundation for his distinguished civil service career by serving for 20 years in the U.S. Army. Henry holds a B.A. in Business Administration from the University of Oklahoma, an M.S. in Systems Management from the University of Southern California, and an M.A. National Security and Policymaking from the U.S. Naval War College.

Panel Reviewer: Mr. Steve Harper, Dean, Defense Threat Reduction University, and the Commandant, Defense Nuclear Weapons School

Stephen "Steve" Harper is the the Dean, Defense Threat Reduction University, and the Commandant, Defense Nuclear Weapons School, Kirtland AFB, NM, for the Defense Threat Reduction Agency (DTRA), Fort Belvoir, VA. DTRA safeguards the United States and its allies from weapons of mass destruction (chemical, biological, radiological, nuclear, and high yield explosives) by providing capabilities to reduce, eliminate, and counter the threat, and mitigate its effects. The Defense Threat Reduction University provides unique training for students from all levels of DOD, federal and state agencies in nuclear weapons; nuclear and radiological incident command, control, and response; and counterproliferation with emphasis on operational support. Harper retired from the United States Air Force in 2002 and is a former Command Pilot with over 3,800 hours of flying time, primarily in the nuclear-rolled B-52. His nuclear-related assignments include Commander of the 325th Bomb Squadron, Fairchild AFB, WA, which had 25 mission-ready crews and over 220 flight crewmembers trained to perform nuclear global strike missions under the Single Integrated Operations Plan; Inspection Team Chief for the ACC/IG Silver Team, Office of the Inspector

General, Air Combat Command, Langley AFB, VA, where he was responsible for the inspection and certification of nuclear units; Chief, Treaty and Threat Reduction Division, J5, Plans and Policy, United States European Command, which developed, coordinated and executed theater policies and procedures for arms control, nuclear operations and counterproliferation of weapons of mass destruction, and where he served as U.S. Co-chairman for the Joint Theater Surety Management Group. He also served as Director for Plans and Policy at Air University, Maxwell AFB, AL, where he directed budgeting and planning that supported over 25,000 resident students per year in programs ranging from pre-commissioning to senior officer and NCO professional military education. Harper joined DTRA in August 2004. Harper's military decorations include the Defense Superior Service Medal, the Legion of Merit, and the Meritorious Service Medal with Three Oak Leaf Clusters. Harper holds a B.S. in Psychology and a M.S. in Management. His professional military education includes in-residence Squadron Officer School, Air Command and Staff College, and Air War College.

Ms. Lily Vaccaro, M.A. Candidate in Nonproliferation and Terrorism Studies, Monterey Institute of International Studies

Lily Vaccaro is a masters candidate in nonproliferation and terrorism studies at the Monterey Institute of International Studies has worked as a graduate research assistant at the James Martin Center for Nonproliferation Studies, and is currently Dr. Avner Cohen's Research Assistant and Teaching Assistant. Her research interests include U.S.-Russian relations and multilateral nonproliferation and disarmament.

Ms. Elizabeth Whitfield, Intern, South Asia Program, The Stimson Center

Elizabeth Whitfield recently graduated with highest distinction from the University of North Carolina at Chapel Hill with a B.A. in Peace, War and Defense and a second major in Spanish Linguistics. She is currently interning at the Stimson Center in their South Asia program, where her work focuses on nuclear security in South Asia as well foreign affairs and national security issues in the region more generally. She was a 2013 recipient of the State Department's Critical Language Scholarship for Urdu, which allowed her to study in Lucknow, India at the American Institute of Indian Studies (AIIS). Whitfield is especially interested in the links between terrorism and nuclear security in South Asia, and also recently published a piece on the Stimson Center website about Pakistan's Zarb-e-Azb operation in North Waziristan.

Ms. Kaitlyn Duffy, Research Inter, Project on Nuclear Issues, Center for Strategic and International Studies

Kaitlyn Duffy is a Research Intern for the Project on Nuclear Issues at the Center for Strategic and International Studies. She graduated from Northeastern University in May 2014 with a B.S. in Chemistry and a B.S. in Political Science. Through the cooperative education program at Northeastern, Duffy completed a number of internships, including with the Department of State's Office of the Coordinator for Threat Reduction Programs under Ambassador Bonnie Jenkins. Her previous work experience includes time spent with the Naval Postgraduate School Field

Experimentation group and INTERPOL Washington. In 2012, she spent five weeks in Geneva, Switzerland studying disarmament diplomacy and international negotiations as a member of a program supported by the United Nations Institute for Disarmament Research.

Ms. Julia Thompson, Research Associate, South Asia Program, The Stimson Center

Julia Thompson is a research associate at the Stimson Center's South Asia program and a member of the Nuclear Scholars Initiative Class of 2014. Her current research focus is deterrence stability and crisis escalation in South Asia. Before joining Stimson, Thompson interned at National Defense University's Institute for National Strategic Studies. She received a B.S. in international politics from Georgetown University and an M.A. in war studies from King's College London, where she focused on counter-terrorism and nonproliferation.

AFTERNOON KEYNOTE ADDRESS

Major General Sandra Finan, Commander, Air Force Nuclear Weapons Center