

CSIS

CENTER FOR STRATEGIC &
INTERNATIONAL STUDIES



Project on
Nuclear Issues

2014 WINTER CONFERENCE

December 9-10, 2014

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Cover photo: B-52 Stratofortress at Royal Air Force Force Fairford, England on June 11, 2014. Photographer: Staff Sgt. Nick Wilson <http://www.af.mil/news/photos.aspx?igphoto=2000804026>

CSIS

**CENTER FOR STRATEGIC &
INTERNATIONAL STUDIES**

Dear Winter Conference Participants

Since 2003, the PONI conference series has provided a forum for rising experts in the field to advance the debate on nuclear issues by presenting insights from their independent research and their professional experiences. PONI conferences are unique in the high value they place on featuring the next generation of nuclear experts, as discussion panels feature some of the best and brightest graduate students, post-docs, and young professionals.

PONI holds three regional conferences per year and a year-end capstone event that includes selected presentations from the preceding three. Today's event marks the third conference of the 2014-15 PONI Conference Series, which will conclude with the Capstone Conference on March 4, 2015 at U.S. Strategic Command, Offutt Air Force Base in Omaha, Nebraska.

Through panel presentations, expert keynotes, group discussions, and a crisis simulation, we believe this conference will enrich the conversation over nuclear issues and help develop the next generation of nuclear experts. Please remember that all proceedings at the conference are *strictly off-the-record*. Your consideration for abiding by this rule is very much appreciated and will undoubtedly foster more candid and fruitful discussions.

Thank you again for joining us. Enjoy the conference!

Sincerely,
The PONI Staff

PONI 2014 Winter Conference

CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES

DAY ONE AGENDA | Tuesday, December 9, 2014

8:30 CONFERENCE CHECK-IN & BREAKFAST

9:00 CONFERENCE WELCOME

Clark Murdock, Director, Project on Nuclear Issues and Senior Adviser, Defense and National Security Group, Center for Strategic and International Studies

9:10 PANEL 1: THE POLITICS AND CULTURE OF US NUCLEAR WEAPONS POLICY

Panel Moderator: Linton Brooks, Non-Resident Senior Advisor, Center for Strategic and International Studies

Panel Reviewer: Clark Murdock, Director, Project on Nuclear Issues and Senior Adviser, Defense and National Security Group, Center for Strategic and International Studies

Under Pressure: Congress, Sequestration, and the Trillion-Dollar Triad

Bradley Harris, Program Assistant and Junior Lobbyist, Friends Committee on National Legislation

U.S. Nuclear Deterrent: Does Size Matter?

Greg Terryn, Herbert Scoville Jr. Peace Fellow, Center for Arms Control and Non-Proliferation

The Cusp of Excellence: Nuclear Bomber Culture

Major Charles Goetz, B-2 Instructor Pilot, 13th Bomb Squadron, Whiteman AFB, MO

10:40 BREAK

11:00 PANEL 2: MODERN PROLIFERATION CONCERNS IN THE MIDDLE EAST AND GLOBAL SOUTH

Panel Moderator: Eileen Vergino, Deputy Director, Center for Global Security Research, Lawrence Livermore National Laboratory

Panel Reviewer: Edward Ifft, Foreign Affairs Officer, U.S. Department of State

IBSA, Iran and Global (Nuclear) Governance

Michal Onderco, Max Weber Fellow, EUI & Assistant Professor, EUR

Transparency Challenges with Middle Eastern Emerging Nuclear Countries

Fareed Yasin, Masters Candidate, Nuclear Engineering, University of Tennessee

Consequences of Iranian Proliferation: Dominoes in the Middle East?

Evan Thompson, Masters Candidate, Security Studies, Georgetown University

12:00 LUNCH & DISCUSSION: YOUNG & OLD: THE FUTURE OF THE NUCLEAR ENTERPRISE

Sarah Minot, Program Coordinator and Research Associate, Project on Nuclear Issues, Center for Strategic and International Studies

Angela Weaver, Program Coordinator and Research Assistant, Defense and National Security Group, Center for Strategic and International Studies

1:40 BREAK

2:00 PANEL 3: TECHNICAL DEVELOPMENTS AND THE FUTURE OF U.S. NUCLEAR WEAPONS

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

Panel Reviewer: Bryan Fearey, Director, National Security Office, Los Alamos National Laboratory

Improving Nuclear Life Extension Program Management: A B61-12 Case Study

Lauren Rutledge, Maintenance & Readiness Analyst, LMI Government Consulting

Hedge Math: Outlining Theoretical Limits on Minimum Stockpile Size across Nuclear Hedging Strategies

Jarret Lafleur, Engineer and Systems Analyst, Homeland Security and Defense Systems Center, Sandia National Laboratories

Employment of Hypersonic Glide Vehicles: Proposed Criteria for Use

Abel Olguin, Technical Systems Analyst, Sandia National Laboratories

3:20 BREAK

3:40 PANEL 4: CASE STUDIES IN NUCLEAR NONPROLIFERATION AND STRATEGY

Panel Moderator: Doug Shaw, Associate Dean for Planning, Research and External Relations and Assistant Professor of International Affairs, The George Washington University's Elliott School of International Affairs

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

Going monadic? Debating the Future of France's Aircraft-delivered Nuclear Weapons

Nicolas Giacometti, MScEcon in Strategic Studies, Aberystwyth University

India-US Strategic Partnership: Implications for South Asia

Saira Bano, PhD Candidate, Centre for Military and Strategic Studies, University of Calgary

India's Export Controls Risk a Diversion of WMD Materials

Shawna Russo, Intern, Proliferation Prevention Program, Center for Strategic and International Studies

5:00 RECEPTION

6:15 DINNER & EVENING KEYNOTE

The Honorable Deborah Lee James, Secretary of the Air Force

7:45 END OF DAY ONE

DAY TWO AGENDA | Wednesday, December 10, 2014

8:30 CONFERENCE CHECK-IN AND BREAKFAST

9:00 PANEL 5: MAINTAINING A BALANCE

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

Panel Reviewer: John Harvey, Former Principal Deputy Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs

America's Delicate Dance between Deterrence and Assurance

John Warden, WSD-Handa Fellow, Pacific Forum, Center for Strategic and International Studies

Assessing Risk and the Human Factor in Avoiding Nuclear Catastrophe

Elise Rowan, Communications Officer, Nuclear Threat Initiative

The Goldilocks Zone of Ballistic Missile Defense

Dean Ensley, Masters Candidate, Security Policy Studies, The George Washington University

10:20 BREAK

11:10 PANEL 6: NONPROLIFERATION POLICY, POLITICS, AND MODELING

Panel Moderator: Clark Murdock, Director, Project on Nuclear Issues and Senior Adviser, Defense and National Security Group, Center for Strategic and International Studies

Panel Reviewer: Bob Servant, Senior Technical Advisor, J5, United States Strategic Command

Congress & US Nonproliferation Policy: A Case Study of the CTBT

Rizwan Asghar, PhD Candidate, Political Science, University of New Mexico

Baruch to Barack: Hegemony and the Politics of the Nuclear Nonproliferation Regime

Rebecca Davis Gibbons, PhD Candidate, International Relations, Georgetown University

Addressing Challenges to Contemporary Nonproliferation Models and Methods through Bayesian Analysis and Agent Based Modeling

Royal Elmore, Visiting Student Fellow, Texas A&M University and Los Alamos National Laboratory

12:10 LUNCH

12:45 OPTIONAL CRISIS SIMULATION

The Future of the NATO-Russia Relationship

3:00 CLOSING REMARKS

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

SPEAKER BIOGRAPHIES

CONFERENCE WELCOME

Dr. Clark Murdock, Director, Project on Nuclear Issues and Senior Adviser, Defense and National Security Group, 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 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 PhD in political science from the University of Wisconsin at Madison.

PANEL 1: THE POLITICS AND CULTURE OF U.S. NUCLEAR WEAPONS POLICY

Panel Moderator: Linton Brooks, Non-Resident Senior Advisor, Center for Strategic and International Studies

Linton F. Brooks is an independent consultant on national security issues, a senior adviser at CSIS, a distinguished research fellow at the National Defense University, and an adviser to four of the U.S. Department of Energy (DOE) national laboratories. He served from July 2002 to January 2007 as administrator of DOE’s National Nuclear Security Administration, where he was responsible for the U.S. nuclear weapons program and for DOE’s international nuclear nonproliferation programs. Ambassador Brooks has five decades of experience in national security, much of it associated with nuclear weapons. His government career has included service as deputy administrator for nuclear nonproliferation at the National Nuclear Security Administration, assistant director of the U.S. Arms Control and Disarmament Agency, chief U.S. negotiator for the Strategic Arms Reduction Treaty, director of defense programs and arms control on the National Security Council staff, and a number of U.S. Navy and Defense Department assignments as a 30-year career naval officer. Ambassador Brooks holds degrees in physics from Duke University and in government and politics from the University of Maryland and is a distinguished graduate of the U.S. Naval War College. He has been associated with the CSIS Project of Nuclear Issues (PONI) since its inception.

Panel Reviewer: Dr. Clark Murdock, Director, Project on Nuclear Issues and Senior Adviser, Defense and National Security Group, Center for Strategic and International Studies

Bradley Harris, Program Assistant and Junior Lobbyist, Friends Committee on National Legislation (FCNL)

Bradley Harris is one of four registered lobbyists from the arms control community on nuclear weapons issues. In this role he aims to reduce the cost and quantity of U.S. nuclear weapons, while ensuring that the United States government has the tools and resources it needs to secure nuclear materials around the world. Previously, Harris managed Susan Rzucidlo's campaign for State Representative in Pennsylvania. His interest in nuclear issues stems from his past work at Liberty in North Korea (LiNK) and the Committee for Human Rights in North Korea (HRNK). In 2011, Harris spent eight days in North Korea as a part of an academic exchange program. He graduated from Tufts University in 2013, majoring in Political Science and Economics.

Greg Terryn, Herbert Scoville Jr. Peace Fellow, Center for Arms Control and Non-Proliferation

Greg Terryn serves as a Herbert Scoville Jr. Peace Fellow at the Center for Arms Control and Non-Proliferation. As a Scoville Fellow, Terryn studies U.S. nuclear modernization plans, the Iran nuclear deal, and U.S.-Russia relations. Terryn recently graduated Summa Cum Laude with a BA in Public Policy from the Gerald Ford School of Public Policy at the University of Michigan.

Major Charles Goetz, B-2 Instructor Pilot, 13th Bomb Squadron, Whiteman AFB, MO

Air Force Major Charles Goetz, a 2004 graduate of the U.S. Air Force Academy attended Pilot Training at Columbus AFB, MS where upon graduation was assigned to Barksdale AFB, LA flying B-52 Bombers. In 2011, he was selected to fly the B-2 Stealth Bomber and is currently an Instructor Pilot in the 13th Bomb Squadron, Whiteman AFB, MO. Major Goetz's responsibilities include commanding a two-person; \$2.4B long-range precision strike aircraft in support of the Global Strike mission prepared to execute both conventional and nuclear operations. He holds an MBA, and multiple certificates in nuclear weapons employment and planning from the Defense Threat Reduction Agency and Sandia Laboratories.

PANEL 2: MODERN PROLIFERATION CONCERNS IN THE MIDDLE EAST AND GLOBAL SOUTH

Panel Moderator: Eileen Vergino, Deputy Director, Center for Global Security Research, Lawrence Livermore National Laboratory

Eileen Vergino is the Deputy Director for the Center for Global Security Research (CGSR) at the Lawrence Livermore National Laboratory (LLNL). As the Deputy Director she is responsible for helping to plan and implement studies in the Center, with an emphasis on examining the ways in which technology can enhance international security. Vergino also serves as the Associate Program Leader for International Cooperation in the E Program. In this role she oversees and initiates international science and technology partnerships designed to further US nonproliferation objectives, including collaborative projects in Russia and the Former Soviet Republics, the Middle East, North Africa and Asia. Vergino served as the primary contact and science advisor, representing LLNL with the U.S. Department of State for International Science and Technology Center (ISTC) and Science and Technology Center of the Ukraine (STCU). As science advisor she routinely provided scientific support to the State Department, including recommendations for project funding, initiating new regional projects through the Science Centers, as well as working with her counterparts from the European Union, Japan, Korea, Norway, and Canada. Vergino is the former Director of Education Programs at LLNL, and was responsible for creating, planning, developing, and implementing education outreach programs for regional and national impact for students and teachers from elementary school through graduate degree programs.

Panel Reviewer: Dr. Edward Ifft, Adjunct Professor, Center for Security Studies, Georgetown University

Dr. Ifft, a retired member of the Senior Executive Service, is a Foreign Affairs Officer at the State Department. He has served on the U.S. delegations to the SALT, TTBT, START and CTBT negotiations, was the Senior State Representative to both the START and CTBT negotiations, and served as Deputy U.S. Negotiator to START. Dr. Ifft has served as Deputy Director of the On-Site Inspection Agency and Senior Advisor to the Defense Threat Reduction Agency. He served for three years as Executive Secretary of the U.S.-USSR Space Cooperation Agreement. He was U.S. Commissioner (Acting) for the ABM Treaty for two years. He has authored numerous journal articles and chapters in two books published by the United Nations.

Michal Onderco, Max Weber Fellow, European University Institute and Assistant Professor, Erasmus University Rotterdam

Michal Onderco is the Max Weber Fellow at the European University Institute and Assistant Professor at Erasmus University Rotterdam. He received his PhD from Vrije Universiteit Amsterdam, with a dissertation on the drivers of responses to norm violators in international politics. Onderco's research is interested in politics of international institutions, Global South, and nuclear proliferation. His work appeared in *International Studies Quarterly*, *Nonproliferation review*, and *European Security*, among others. Onderco received his BA in International Politics and History from Jacobs University Bremen, and LLM in Law and Politics of International Security from VU University Amsterdam. In 2012-2013, Onderco was a Fulbright visiting researcher at Saltzman Institute for War and Peace Studies at Columbia University. His book *Iran's Nuclear Program and the Global South: The Foreign Policy of India, Brazil, and South Africa* is forthcoming in 2015.

Fareed Yasin, MS Candidate in Nuclear Engineering, University of Tennessee

Fareed Yasin holds a BS in Nuclear Engineering from the University of Tennessee. After graduating, he stayed at the University of Tennessee, where he is pursuing his Master's Degree in Nuclear Engineering, which he will complete in May 2015. Yasin has a well-rounded background with experience in both industry and academia. During his undergraduate career, Yasin worked as a three term co-op as a Nuclear Core Designer at Dominion Power. Currently, he is working under Dr. Howard Hall and Dr. Joe Stainback where he is coupling his industry knowledge with his current academic research in the field of nuclear security, with an emphasis in nuclear security culture in emerging nuclear countries. Yasin's current research focuses on addressing issues associated with sustainability as well as policy issues surrounding these emerging nuclear countries as they strive for peaceful nuclear operation.

Evan Thompson, MA Candidate in Security Studies, Georgetown University

Evan Thompson is a second year Master's candidate in Security Studies at Georgetown University, with concentrations in Unconventional Weapons and Nonproliferation. Thompson began his career in nonproliferation while studying International Affairs as an undergraduate at the University of Georgia. In his senior year, Thompson worked with the Center for International Trade and Security as a Security Leadership Fellow. The research he conducted at CITS on 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 U.S. Department of State's Office of Export Control Cooperation, and he transitioned to the non-profit CRDF Global in September. He will graduate from Georgetown in Spring 2015 and hopes to continue in the field of nonproliferation and international security.

LUNCH DISCUSSION: YOUNG & OLD: THE FUTURE OF THE NUCLEAR ENTERPRISE

Sarah Minot, Program Coordinator and Research Associate, Project on Nuclear Issues, Center for Strategic and International Studies

Sarah Minot is the program coordinator and research associate for the Project on Nuclear Issues (PONI) at CSIS. She holds an MA in conflict resolution from Georgetown University and a BA in political science and international relations from the College of Wooster.

Angela Weaver, Program Coordinator and Research Assistant, Defense and National Security Group, Center for Strategic and International Studies

Angela Weaver is the research assistant and program coordinator for the Defense and National Security Group at CSIS. She has authored articles on U.S. nuclear weapons policy and deterrence. She received a BA in history from Wake Forest University, where she focused on international affairs, defense and national security policy, and interstate conflict.

PANEL 3: TECHNICAL DEVELOPMENTS AND THE FUTURE OF U.S. NUCLEAR WEAPONS

Panel Moderator: 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.

Panel Reviewer: 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. Fearey's 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.

Lauren Rutledge, Maintenance & Readiness Analyst, LMI Government Consulting

Lauren Rutledge is currently an Analyst at LMI, a government consulting firm in McLean, VA, where she focuses on Maintenance and Readiness issues to find logistics, policy, and program management solutions for Department of Defense clients. Previously, Rutledge worked as a Nonproliferation Graduate Fellow at the National Nuclear Security Administration in the Office of Defense Programs (Stockpile Stewardship), where she served as integration and strategic planning lead for Nuclear Enterprise modeling, weapons safety authorization, and Analysis of Alternatives initiatives. Rutledge holds an MPA in National Security and

Nuclear Policy from The George Washington University's Trachtenberg School of Public Policy and Public Administration, and a BS in Communication Studies from the University of Miami.

Dr. Jarret Lafleur, Engineer and Systems Analyst, Homeland Security and Defense Systems Center, Sandia National Laboratories

Jarret Lafleur is an engineer and systems analyst in the Homeland Security and Defense Systems Center at the California site of Sandia National Laboratories. He conducts research related to defense systems and multi-attribute decision analysis, particularly on topics of system performance, cost, strategic risk, and security. Dr. Lafleur recently completed Sandia's Weapon Intern Program and participated in the 2013 CSIS Nuclear Scholars Initiative. Dr. Lafleur earned his PhD in Aerospace Engineering from the Georgia Institute of Technology in 2012, focusing on the conceptual design and analysis of manned and unmanned spacecraft and spacecraft programs, with particular emphasis on techniques for integrating flexibility into system design decisions. While at Georgia Tech, he was supported in part by fellowships from the Department of Defense, National Science Foundation, and Astronaut Scholarship Foundation, and was selected for the institute's Sam Nunn Security Program in 2009. Dr. Lafleur has also engaged in engineering design and analysis work at the U.S. Naval Undersea Warfare Center, NASA Jet Propulsion Laboratory, NASA White Sands Test Facility, and NASA Johnson Space Center.

Abel Olguin, Technical Systems Analyst, Sandia National Laboratories

Abel Olguin is a Technical Systems Analyst at Sandia National Laboratories in his native Albuquerque, NM. Olguin obtained his BS in Mechanical Engineering from the University of New Mexico and MS in Mechanical Design from Kettering University. He spent 6 years working as a design engineer with Lockheed Martin, where he worked for the Atlas V, the Targets and Countermeasures, and the Airborne ISR/Senior Scout programs. Olguin has worked for the last 4 years at Sandia, first in the Nuclear Safety Assurance organization, and is currently working in the Systems Studies/Analysis group.

PANEL 4: CASE STUDIES IN NUCLEAR NONPROLIFERATION AND STRATEGY

Panel Moderator: Dr. Doug Shaw, Associate Dean for Planning, Research and External Relations and Assistant Professor of International Affairs, The George Washington University's Elliott School of International Affairs

Douglas B. Shaw serves as Associate Dean for Planning, Research, and External Relations at The George Washington University's Elliott School of International Affairs, with a concurrent appointment as Assistant Professor of International Affairs. As Associate Dean, he supports the Elliott School's research enterprise, including eight institutes and centers, strategic initiatives, the offices of Public Affairs, Graduate Admissions, and Graduate Student Career Development. As a faculty member, he teaches courses and conducts research on nuclear proliferation and international security. Dr. Shaw previously served as Director of Policy Planning for Georgetown University President John J. DeGioia. Dr. Shaw joined the White House Office of Presidential Personnel the day after the 1993 inauguration of President Bill Clinton and held appointments in both Clinton Administrations. At the U.S. Arms Control and Disarmament Agency, he was commended by the President for his involvement with the successful global diplomatic campaign to indefinitely extend the Nuclear Non-Proliferation Treaty. Subsequently, Dr. Shaw worked at the U.S. Department of Energy where he received a Meritorious Service Award for "significant improvements of safeguards and security of tons of weapons usable nuclear materials" in Ukraine.

Panel Reviewer: 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.

Nicolas Giacometti, MScEcon in Strategic Studies, Aberystwyth University

Nicolas Giacometti holds a Masters in European External Security and Defense Policy from Sciences Po and an MScEcon in Strategic Studies from Aberystwyth University where he wrote his Master's thesis on the articulation between ballistic missile defense and nuclear deterrence in French Defense strategy. Giacometti has worked in several defense-related institutions including the Institute for Higher National Defence Studies, the nuclear deterrence unit in the French Ministry of Defence's strategic affairs directorate, the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, and the Armaments and Aerospace Capabilities Directorate at NATO HQ. He regularly publishes articles on defense/nuclear issues for websites and reviews and has participated in conferences on nuclear deterrence, nuclear disarmament, and non-proliferation at Sciences Po Strasbourg.

Saira Bano, PhD Candidate, Centre for Military and Strategic Studies (CMSS), University of Calgary

Saira Bano is a PhD candidate in Centre for Military and Strategic Studies (CMSS) at the University of Calgary, Canada. Her research focuses on the nuclear nonproliferation regime, nuclear weapons issues in South Asia, especially India, and nonproliferation policies of states, such the US, Pakistan, Israel and India. Bano's PhD dissertation, grounded in regime theory, analyses the India-United States Civilian Nuclear Agreement, and explores its implications for the nuclear non-proliferation regime. She has won several academic and research awards. She was awarded the prestigious Joseph-Armand Bombardier Canada Graduate Scholarship Doctoral by the Social Sciences and Humanities Research Council. Bano was also awarded Graduate Research Award by the Simons Foundation.

Shawna Russo, Intern, Proliferation Prevention Program, Center for Strategic and International Studies

A native of Albuquerque, New Mexico, Shawna Russo is a graduate of the Monterey Institute of International Studies, where she earned her MA in Nonproliferation and Terrorism Studies. She earned her BA in International Relations with a concentration in Security Studies from Tufts University. Russo has previously interned for a variety of think tanks such as the Center for Nonproliferation Studies, the Stimson Center, and the Breakthrough Institute. She has researched a broad range of security issues from counter-terrorism to UN peacekeeping to nonproliferation. Russo currently resides in the Washington, D.C.-area, where she is pursuing various opportunities in nonproliferation and political violence research.

EVENING KEYNOTE

The Honorable Deborah Lee James, Secretary of the Air Force

Deborah Lee James is the 23rd Secretary of the Air Force and is responsible for the affairs of the Department of the Air Force, including the organizing, training, equipping and providing for the welfare of its more than 690,000 active duty, Guard, Reserve and civilian Airmen and their families. She also oversees the Air Force's annual budget of more than \$110 billion. Ms. James has 30 years of senior homeland and national security experience in the federal government and the private sector. Prior to her current position, Ms. James served as President of Science Applications International Corporation's Technical and Engineering Sector, where she was responsible for 8,700 employees and more than \$2 billion in revenue. For nearly a decade, Ms. James held a variety of positions with SAIC to include Senior Vice President and Director of Homeland Security. From 2000 to 2001, she was Executive Vice President and Chief Operating Officer at Business Executives for National Security, and from 1998 to 2000 she was Vice President of International Operations and Marketing at United Technologies. During the Clinton Administration, Ms. James served in the Pentagon as the Assistant Secretary of Defense for Reserve Affairs. Prior to her Senate confirmation in 1993, she served as an assistant to the Assistant Secretary of Defense for Legislative Affairs. From 1983 to 1993, she worked as a professional staff member on the House Armed Services Committee, where she served as a senior advisor to the Military Personnel and Compensation Subcommittee, the NATO Burden Sharing Panel, and the Chairman's Member Services team. Ms. James earned her BA in Comparative Area Studies from Duke University and her MIA from Columbia University School of International and Public Affairs.

PANEL 5: MAINTAINING A BALANCE

Panel Moderator: 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.

Panel Reviewer: Dr. John Harvey, Former Principal Deputy Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs

In July 2009, Dr. Harvey reported as the Principal Deputy to the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological. As a member of the Senior Executive Service, he advised the ATSD on formulation of policy and plans and oversight of nuclear matters, chemical and biological defense programs, chemical weapons demilitarization, treaty management and the Defense Threat Reduction Agency. From March 2001 to July 2009, Dr. Harvey served as Director, Policy Planning Staff of the NNSA. He was responsible

for analysis of program and policy options relating to NSC-directed policy reviews, the work of the Nuclear Weapons Council, external advisory boards, and interagency working groups. Dr. Harvey received his BA in physics from Rutgers University and his MS and PhD degrees in experimental elementary particle physics from the University of Rochester.

John Warden, WSD-Handa Fellow, Pacific Forum, Center for Strategic and International Studies

John K. Warden is a WSD-Handa fellow at the Pacific Forum CSIS where he works on East Asia security issues including U.S. alliances, Japan's island disputes, extended deterrence, and nonproliferation. He received his MA in Security Studies from Georgetown University, where he also served as a research assistant and as the editor-in-chief of the Georgetown Security Studies Review. Previously, Warden worked as a program coordinator and research assistant at the Center for Strategic and International Studies, contributing to projects on nuclear deterrence, arms control, and U.S. alliances. He served as executive director for working groups on US-Russian arms control and U.S.-China nuclear relations, managed a project on the U.S. nuclear posture, coordinated a U.S.-Japan-ROK Track-II dialogue, and twice directed the Nuclear Scholars Initiative, including editing the accompanying journals. Warden has published articles in *The Diplomat*, *Infinity Journal*, *The National Interest*, *PacNet*, and *Proceedings Magazine*. He earned his BA in Political Science and History from Northwestern University.

Elise Rowan, Communications Officer, Nuclear Threat Initiative

As communications officer, Elise Rowan contributes to the Nuclear Threat Initiative's (NTI) public education and outreach to reduce the threats from nuclear, chemical and biological weapons. Prior to joining NTI in 2011, Rowan held positions with the Senate Foreign Relations Committee, the U.S. Department of State's Office of Weapons of Mass Destruction Terrorism, and the Ploughshares Fund, where she co-authored articles for *The Hill* and *Foreign Policy*. Rowan has also worked with the Stimson Center's Managing Across Boundaries Program, where she contributed to Stimson's efforts to match states needing assistance in UNSCR 1540 implementation with states capable of providing assistance. Earlier in her career, Rowan worked for an Indianapolis, IN-based nonprofit organization in marketing, outreach and public relations. Rowan holds an MA in Security Policy Studies with concentrations in Transnational Security Policy and Strategic Communication from The Elliott School of International Affairs at The George Washington University. She holds a BS in International Business Management and French from Butler University in Indianapolis. Rowan is a member of Women in International Security and the 2014 class of the PONI Nuclear Scholars Initiative.

Dean Ensley, MA Candidate in Security Policy Studies, The George Washington University

Dean Ensley is currently pursuing an MA in Security Policy Studies at The George Washington University, with specializations in Defense Analysis and Science and Military Technology in Asia. He graduated from Georgetown University in 2013 with a BSFS in International Politics and a Certificate in European Studies. Ensley presently works at the Streit Council and has previously worked at the Congressional Taskforce on Terrorism and Unconventional Warfare, the National Defense University's Center for the Study of Weapons of Mass Destruction, and the Truman National Security Project. In his free time Ensley enjoys running Tough Mudders and marathons, rock climbing, and speaking about his experience as a Third Culture Kid.

PANEL 6 NONPROLIFERATION POLICY, POLITICS, AND MODELING

Panel Moderator: Dr. Clark Murdock, Director, Project on Nuclear Issues and Senior Adviser, Defense and National Security Group, Center for Strategic and International Studies

Panel Reviewer: Bob Servant, USSTRATCOM J5 Senior Technical Advisor

Rizwan Asghar, PhD Candidate in Political Science, University of New Mexico

Rizwan Asghar is a PhD Candidate and Graduate Assistant at the University of New Mexico in the Department of Political Science, specializing in the fields of International Relations and Public Policy. He has previously worked as visiting fellow at Monterey Institute of International Studies, California and Sandia National Labs, New Mexico. Rizwan has also published extensively in Pakistan's leading English newspapers and magazines. His research interests include nuclear security and disarmament, and nuclear terrorism.

Rebecca Davis Gibbons, PhD Candidate in International Relations, Georgetown University

Rebecca Davis Gibbons is a PhD candidate in international relations at Georgetown University. Her dissertation, "Baruch to Barack: American Hegemony and the Politics of the Nuclear Nonproliferation Regime" examines variation in cooperation with nonproliferation efforts among members of the Treaty on the Nonproliferation of Nuclear Weapons (NPT). In 2013-2014, Gibbons was a Stanton Nuclear Security Fellow at the RAND Corporation. She currently provides contract support to the Air Force's Strategic Stability & CWMD office (AF/A10-S).

Royal Elmore, Visiting Student Fellow, Texas A&M University and Los Alamos National Laboratory
Dr. Royal Elmore recently completed his PhD in Nuclear Engineering at Texas A&M University. While pursuing his PhD, Dr. Elmore was a visiting Student Fellow at Los Alamos National Laboratory in the National Security Office. He received his MSc in Nuclear Engineering and MSc in Mechanical Engineering from the University of Wisconsin-Madison in 2011. He received his 2006 undergraduate degrees in Mechanical Engineering and Political Science from Iowa State University. Dr. Elmore has received graduate research support from several sources, including the United States National Science Foundation and Nuclear Nonproliferation International Safeguards fellowships.

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About the Project on Nuclear Issues

The role of nuclear weapons in international security has changed since the end of the Cold War, but the need to maintain technical and policy expertise to deal with nuclear challenges remains the same. For a host of reasons, including the declining emphasis on nuclear weapons in the post-Cold War international security environment, expertise on nuclear issues became an acute challenge, particularly among younger generations. For this reason, CSIS launched the Project on Nuclear Issues (PONI) in 2003 to develop the next generation of nuclear experts. Since that time PONI has grown tremendously, from a small club involving a few dozen people to a large, multi-faceted program with over 1,100 members. The project has three primary objectives. First, PONI aims to build and sustain a networked community of young nuclear experts from across the nuclear enterprise, including in the laboratories, military, industry, academia, and policy world. Second, the project seeks to help develop the next generation of leaders with both the necessary subject matter expertise and the professional skills to be effective in shaping and implementing policy. Third, PONI works to mobilize the wide-ranging nuclear expertise within its membership ranks to generate new ideas and advance the public debate on all issues concerning nuclear weapons.

To that end, PONI maintains an enterprise-wide membership base, hosts four major conferences and several smaller events each year, maintains an online blog, holds live debates on critical nuclear weapons issues, runs a six-month academic program for young experts, organizes bilateral exchanges involving young experts from the U.S. and abroad, oversees a working group of top young professionals, and distributes bi-weekly news and event announcements to members. In all that it does, PONI seeks to create forums for knowledge transfer between generations and between sectors, as sustaining these interactions will be crucial to the development and implementation of effective nuclear policy, both now and in the future.



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