

PUBLIC POLICY AND NUCLEAR THREATS

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BOOT CAMP 2014

**SPEAKERS**

# BRIAN BOYER

Brian D. Boyer is the Project Leader of International Safeguards in the Nuclear Engineering and Nonproliferation Division at Los Alamos National Laboratory in Los Alamos, NM. He has been employed at Los Alamos since 2006 in the field of nuclear nonproliferation specializing in international safeguards especially in the areas of enrichment safeguards, safeguards by design, and reactor safeguards. From 2002 to 2006 he worked at Brookhaven National Laboratory as a nonproliferation and safeguards specialist helping to create a safeguards approach with the International Atomic Energy Agency (IAEA) for the Chernobyl Shelter, and building a course for the IAEA at Brookhaven to train IAEA inspectors in the mechanics of doing complementary access activities for the Additional Protocol to the Nuclear Nonproliferation Treaty. He worked from 1997 to 2002 at the IAEA as a Nuclear Safeguard Inspector doing inspections in Europe at various types of facilities including reactors such as TRIGA and MTR research reactors and RBMK, LWR and CANDU power reactors, reprocessing facilities, MOX fuel fabrication, and gas centrifuge enrichment plants and as a Nuclear Safeguards Analyst in the Section for System Studies. He holds a Ph.D. in Nuclear Engineering from the Pennsylvania State University.



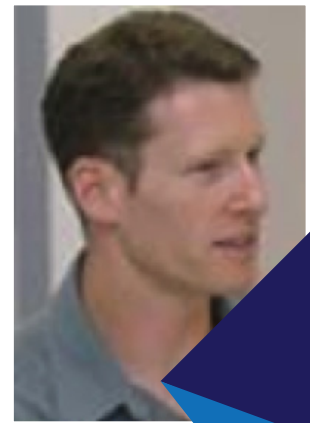
# LINTON BROOKS

Ambassador Linton Brooks is an independent consultant on national security issues, a Senior Advisor at the Center for Strategic and International Studies, a Distinguished Research Fellow at the National Defense University, a member of the National Academy of Sciences Committee on International Security and Arms Control and an advisor to six of the Department of Energy national laboratories. He served from July 2002 to January 2007 as Administrator of the U.S. Department of Energy's National Nuclear Security Administration, where he was responsible for the U.S. nuclear weapons program and for the Department of Energy's international nuclear nonproliferation programs. His government service includes service as Deputy Administrator for Nuclear Nonproliferation at the National Nuclear Security Administration, Assistant Director of the United States 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 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.



# ROBERT BROWN

Robert L. Brown is assistant professor of political science at Temple University, where he will teach courses on international relations theory and international security. He received his Ph.D. in political science from UC San Diego in June 2008 after completing his dissertation on why countries use international organizations to cooperate on nuclear and chemical weapons but not for biological weapons. His research interests more broadly include international relations theory, international organizations, international security issues, nuclear deterrence, and sovereignty issues. He has an M.A. in international affairs from the George Washington University's Elliott School, where his studies focused on security regimes in Northeast and Southeast Asia, and a B.A. in political science with a minor in Japanese studies from the University of California, where his studies focused on Northeast Asian political economy and development. He has also interned at the Center for Strategic and International Studies (CSIS) in Washington, D.C., and worked previously at The Nautilus Institute on nuclear and Northeast Asian security issues.





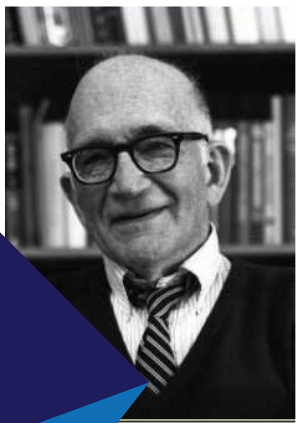
## CLARK CULLY

Clark Cully is the Chief of Staff in the Office of Global Strategic Affairs. This office develops the Department of Defense's policies regarding space, cyber, missile defense, and nuclear issues. Dr. Cully previously served as an analyst in the Office of Nuclear Policy, where he focused on extended deterrence in Asia, nuclear command and control, and prompt global strike. Dr. Cully has also completed assignments in Afghanistan, detailed to the Senate Appropriations staff, and with the Director of Defense Research and Engineering. Prior to joining DoD, he worked for the NNSA's Office of Nonproliferation R&D, as a fellow at the National Academy of Sciences, and as a researcher at Fermi National Accelerator Lab. Dr. Cully is a Term Member of the Council on Foreign Relations, and has participated in the Presidential Management Fellowship, MIT's Seminar XXI Program, the Program for Emerging Leaders at NDU, the CSIS Nuclear Scholar Program, the U.S.-Japan Leadership Program, and the Manfred Wörner Seminar. Dr. Cully has a Ph.D. in particle physics from the University of Michigan and bachelor's degrees in physics and math from Calvin College.



## JAY DAVIS

Jay Davis is the President of the Hertz Foundation, which funds graduate education in the applied physical sciences and engineering. Jay is a nuclear physicist trained at the Universities of Texas and Wisconsin. In 1988 at the Lawrence Livermore National Laboratory, Davis founded the Center for Accelerator Mass Spectrometry (CAMS), the world's most versatile and productive AMS laboratory. At CAMS, he created tools and programs for research in the geosciences, toxicology, nutritional sciences, oncology, archaeology, and nuclear forensics. In national security activities, he was a senior member of the NEST program and served as an inspector in Iraq for UNSCOM after the First Gulf War participating in the discovery and assessment of the Iraqi nuclear weapons program. From 1998 to 2001, Davis left LLNL to serve as the founding Director of the Defense Threat Reduction Agency of the Department of Defense. Among his honors are Phi Beta Kappa, an Atomic Energy Commission Postdoctoral Fellowship, and being twice awarded the Distinguished Public Service Medal, DoD's highest civilian award. He is a Fellow of the American Physical Society and has served on its Panel on Public Affairs. He chairs the Nuclear and Radiation Studies Board of the National Academy of Sciences. Jay's current interests are in graduate education, nuclear forensics, and management of change in organizations.



## SIDNEY DRELL

Sidney D. Drell is a senior fellow at the Hoover Institution and professor of theoretical physics (emeritus) at the SLAC National Accelerator Laboratory, Stanford University. He also co-founded CISAC, and jointly directed it from 1983 to 1989. He served as SLAC's deputy director until retiring in 1998 and is a theoretical physicist and arms control specialist. He has been active as an adviser to the executive and legislative branches of government on national security and defense technical issues for more than four decades.

Drell is one of the original members of JASON, a group of academic scientists who consult for the government on issues of national importance, and a member of the governing board of LANS, which he currently manages, at the Los Alamos National Laboratory. Most recently, he was a member of the advisory committee to the National Nuclear Security Administration, and chaired the senior review board for the Intelligence Technology Innovation Center. He has served as chair of the Panel on Nuclear Weapons Safety of the House Armed Services Committee, the Technology Review Panel of the Senate Select Committee on Intelligence, and the U.C. President's Council

# MASSIMILIANO FRATONI

Massimiliano Frantoni is assistant professor in the Department of Nuclear Engineering at the University of California, Berkeley. He received a Laurea in Nuclear Engineering from Università di Roma "La Sapienza" (Italy), and a MSc and a PhD from the University of California, Berkeley. Prior to joining the Nuclear Engineering Department at UCB, he held a Research Scientist position at the Lawrence Livermore National Laboratory and a faculty position at The Pennsylvania State University. Dr. Fratoni has a decennial experience in reactor design and analysis, spanning a large variety of reactor concepts, like advanced high temperature reactors, small modular fast reactors, liquid fuel reactors, advanced light water reactors, and molten salt reactors. His main research interests lie in advanced fuel cycles for maximizing natural utilization and minimizing nuclear waste.



# OLLI HEINONEN

Olli Heinonen is a Senior Fellow at the Harvard Kennedy School of Government's Belfer Center for Science and International Affairs. His research and teachings include: nuclear non-proliferation and disarmament, verification of treaty compliance, enhancement of the verification work of international organizations, and transfer and control of peaceful uses of nuclear energy. Before joining the Belfer Center in September 2010, Olli Heinonen served 27 years at the International Atomic Energy Agency in Vienna. Heinonen was the Deputy Director General of the IAEA, and head of its Department of Safeguards. Prior to that, he was Director at the Agency's various Operational Divisions, and as inspector including at the IAEA's overseas office in Tokyo, Japan. Prior to joining IAEA, he was a Senior Research Officer at the Technical Research Centre of Finland Reactor Laboratory in charge of research and development related to nuclear waste solidification and disposal. He is co-author of several patents on radioactive waste solidification. Heinonen studied radiochemistry and completed his PhD dissertation in nuclear material analysis at the University of Helsinki.



## KEYNOTE SPEAKER

SIDNEY DRELL CONTINUED

that oversees Los Alamos, Lawrence Berkeley, and Lawrence Livermore National Laboratories.

From 1992 to 2001, Drell served as a member of the President's Foreign Intelligence Advisory Board. He has also been a member of the Commission on Maintaining U.S. Nuclear Weapons Expertise and the President's Science Advisory Committee and has consulted for the National Security Council, the U.S. Arms Control and Disarmament Agency, and the Congressional Office of Technology Assessment.

Drell received his AB from Princeton University, his PhD from the University of Illinois in physics, and honorary degrees from the University of Illinois, the Weizmann Institute of Science, and the University of Tel Aviv.



## LAURA HOLGATE

Laura S. H. Holgate is the Senior Director for Weapons of Mass Destruction Terrorism and Threat Reduction for the office of the Weapons of Mass Destruction Coordinator at the National Security Council. In this role, she oversees and coordinates the development of national policies and programs to reduce global threats from nuclear, biological and chemical weapons; detect, identify, secure and eliminate nuclear materials; prevent malicious use of biotechnology; and secure the civilian nuclear fuel cycle. From 2001 to 2009, Holgate was the Vice President for Russia/New Independent States Programs at the Nuclear Threat Initiative. The Nuclear Threat Initiative is a public charity devoted to reducing toward zero the risk that nuclear, biological or chemical weapons will ever be used, and to preventing their proliferation. Working closely with governments and international organizations, Ms. Holgate led NTI's activities to secure and eliminate fissile materials, develop new employment for former weapons workers, reduce risks of the nuclear fuel cycle, and enhance national threat reduction programs. She holds an AB from Princeton University in politics, an SM from the Massachusetts Institute of Technology in political science, and two years on the research staff at Harvard University's Center for Science and International Affairs at the Kennedy School of Government, where she authored several articles and book chapters.



## NEIL JOECK

Neil Joeck is a Visiting Scholar at the Institute for International Studies at the University of California, Berkeley. He was the National Intelligence Officer for South Asia in the Office of the Director for National Intelligence from 2009 to 2011, in which capacity he provided intelligence support to the White House on Afghanistan, Pakistan, and India. He also served from 2004 to 2005 as Director for Counter Proliferation Strategy at the National Security Council, where he was responsible for India and Pakistan proliferation issues, the Bush-Putin Bratislava summit, the Nonproliferation Treaty Review Conference, and Department of Homeland Security and multilateral regime (CWC, BWC, MTCR) issues. From 2001-2003, he was a member of the Policy Planning Staff at the Department of State. He received the Meritorious Honor Award for his work on Afghanistan following September 11. Dr. Joeck completed his assignments with the US Government while employed at the Lawrence Livermore National Laboratory (LLNL) from 1987 to 2013. For his contributions to US national security, LLNL named him a Distinguished Member of the Technical Staff in 2012. Dr. Joeck received a Ph.D. and MA in political science from UCLA (1986), an MA from the Paterson School of International Affairs at Carleton University in Canada (1976), and a BA from the University of California, Santa Cruz (1973).



## KIM KNIGHT

Kim Knight is a staff scientist at Lawrence Livermore National Laboratory focused on nuclear forensic research through analysis of nuclear and associated materials for clues about the origins, locations or processes. A geochemist by training, she was and remains endlessly fascinated with radioactive materials. She is presently involved in the development of new techniques and methods which can be applied to improve interpretation of these types of materials, additionally leading several collaborative technical efforts in the area of nuclear forensics, including with colleagues in the former Soviet Union. She has been involved in the design and delivery of many training courses in technical nuclear forensics, as well as the development and revision of international guidelines as a participant in IAEA consultancies and workshops. Dr. Knight received her Ph.D. from the University of California, Berkeley in 2006, working as a post-doctoral researcher at The University of Chicago and Argonne National Laboratory prior to joining LLNL in 2008.



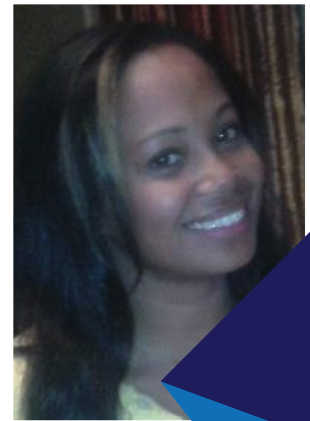
# HANS KRISTENSEN

Kristensen is Director of the Nuclear Information Project at the Federation of American Scientists in Washington, D.C., where he researches and writes about the status and operations of nuclear forces of the nine nuclear-armed states. He is a frequent advisor to the news media on the status of nuclear forces and policy. Kristensen is co-author of the bi-monthly FAS Nuclear Notebook column in the Bulletin of the Atomic Scientists and the World Nuclear Forces overview in the SIPRI Yearbook, both of which are some of the most widely used reference material on the status of the world's nuclear arsenals. Recent publications include: "Falling Short of Prague: Obama's Nuclear Weapons Employment Policy," Arms Control Today, September 2013; Trimming Nuclear Excess: Options for Further Reductions of U.S. and Russian Nuclear Forces (FAS, December 2012); and From Counterforce to Minimal Deterrence: A New Nuclear Policy on the Path Toward Eliminating Nuclear Weapons (FAS/NRDC, April 2009). Prior to his current position, Kristensen was a consultant to the Nuclear Program at the Natural Resources Defense Council in Washington, D.C. (2003-2005), and Program Officer at the Nautilus Institute in Berkeley, CA (1998-2002). He was born in Denmark.



# CHANTELL MURPHY

Chantell Murphy is a PhD candidate at the University of New Mexico and Doctoral Research Assistant at Los Alamos National Laboratory. She is currently devoting her research to developing methodologies to implement Acquisition Path Analysis. Her work is sponsored by NA-241's Next Generation Safeguards Initiative (NGSI) and supports the IAEA's efforts to further develop and implement the State-level Concept.



# JAMES NEWTON

James Newton is a Supervisory Special Agent in the United States Federal Bureau of Investigation.





## JOSEPH PILAT

Joseph F. Pilat is a Program Manager in the National Security Office at Los Alamos National Laboratory and Global Fellow of International Security Studies at the Wilson Center. Dr. Pilat served as representative of the Secretary of Defense to the Fourth Review Conference of the Nuclear Non-Proliferation Treaty (NPT), and as an adviser to the US Delegation at the 1995 NPT Review and Extension Conference. Dr. Pilat also served as representative of the Secretary of Defense to the Open Skies negotiations. He has been Special Assistant and Assistant for Nonproliferation Policy in the Office of the Deputy Assistant Secretary of Defense for Negotiations Policy, a Senior Research Associate in the Congressional Research Service and a Research Associate at the International Institute for Strategic Studies. Dr. Pilat has taught in the Department of Government at Cornell University and the College of William and Mary, and in the Department of History at Georgetown University. He has been a Senior Associate Member of St. Antony's College, University of Oxford, a Visiting Fellow at Cornell's Peace Studies Program and a Philip E. Mosely Fellow at the Center for Strategic and International Studies. Dr. Pilat has lectured widely at academic and policy institutions worldwide and has written numerous articles and opinion pieces for US and European scholarly journals and newspapers; he is the author or editor of many books.



## DANIEL PINKSTON

Daniel Pinkston is North East Asia Deputy Project Director with the International Crisis Group in Seoul. He focuses on inter-Korean relations, domestic politics, regional security, nonproliferation and the reform process in North Korea. Pinkston is formerly Director of the East Asia Nonproliferation Project at the Center for Nonproliferation Studies in Monterey, California, and has been Associate editor of *The Nonproliferation Review* since 2004. Pinkston has a master's degree in Korean studies from Yonsei University and a PhD in international affairs from the University of California, San Diego.



## BRAD ROBERTS

Brad Roberts is a consulting professor and William Perry Fellow at the Center for International Security and Cooperation at Stanford University in Palo Alto, California. From April 2009 to March 2013 he served as Deputy Assistant Secretary of Defense for Nuclear and Missile Defense Policy. In this role, he served as policy director of the Obama administration's Nuclear Posture Review and Ballistic Missile Defense Review. Prior to joining the administration, Dr. Roberts was a member of the research staff at the Institute for Defense Analyses and adjunct professor at George Washington University. His most recent publication is *Extended Deterrence and Strategic Stability in Northeast Asia* (Tokyo: National Institute for Defense Studies, 2013).

# LAURA ROCKWOOD

Laura Rockwood is a former Section Head for Non-Proliferation and Policy Making in the Office of Legal Affairs of the International Atomic Energy Agency (IAEA). During her 28 years at the IAEA, she was involved in all aspects of the negotiation, interpretation and implementation of IAEA safeguards, and was the principal author of the document that became the Model Additional Protocol. She participated in negotiations on the Trilateral Initiative and the Plutonium Management and Disposition Agreement, as well in as the Director General's Expert Group on Multilateral Approaches to the Nuclear Fuel Cycle and three NPT Review Conferences. Rockwood recently joined Harvard University's Kennedy School Belfer Center Managing the Atom Project as a Senior Research Fellow. Rockwood has been the recipient of the Distinguished Service Award from the Institute of Nuclear Materials Management (INMM), which is awarded for long-term noteworthy accomplishments in, and service to, the nuclear materials management profession. Prior to working for the IAEA she was employed by the US Department of Energy as a trial attorney in radiation injury cases, and as counsel in general legal matters. She received her BA degree from the University of California, Berkeley and her Juris Doctor degree from the University of California's Hastings College of Law. She is a member of the State Bar of California and of the Washington DC Bar Association.



# SCOTT SAGAN

Scott D. Sagan is the Caroline S.G. Munro Professor of Political Science, the Mimi and Peter Haas University Fellow in Undergraduate Education, and Senior Fellow at the Center for International Security and Cooperation and the Freeman Spogli Institute at Stanford University. He also serves as the co-chair of the American Academy of Arts and Sciences' Global Nuclear Future Initiative. Sagan is the author of *Moving Targets: Nuclear Strategy and National Security* (Princeton University Press, 1989), *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton University Press, 1993), and with co-author Kenneth N. Waltz, *The Spread of Nuclear Weapons: An Enduring Debate* (W.W. Norton, 2012).



# MARK SCHANFEIN

Mark Schanfein joined Idaho National Laboratory (INL) in September 2008, as their Senior Nonproliferation Advisor, after a 20-year career at Los Alamos National Laboratory where, in his last role, he served as Program Manager for Nonproliferation and Security Technology. He served as a technical expert on the ground in the DPRK during the disablement activities resulting from the 6-Party Talks. Mark has eight years of experience working at the International Atomic Energy Agency in Vienna, Austria, in the Department of Safeguards where he served four years as a safeguards inspector and as Inspection Group Leader in Operations C, and four years as the Unit Head for Unattended Monitoring Systems (UMS) in Technical Support. In this position he was responsible for the installation of all IAEA unattended systems in nuclear fuel cycle facilities worldwide. With over 30 years of experience in international and domestic safeguards, his current focus is on conducting R&D to develop the foundation for effective international safeguards on pyroprocessing facilities and other novel safeguards challenges.







## ADAM SCHEINMAN

In 2013 President Obama announced his nomination of Adam M. Scheinman as Special Representative of the President for Nuclear Nonproliferation, with the rank of Ambassador. Prior to his confirmation, Mr. Scheinman served as Senior Advisor for Nuclear Nonproliferation in the Bureau of International Security and Nonproliferation at the U.S. Department of State. From 2009 to 2013, he served as Director for Nonproliferation on the White House National Security Staff. From 1999 to 2009, he held a number of positions in the Department of Energy's National Nuclear Security Administration, including Assistant Deputy Administrator and Policy Director in the Office of Nonproliferation and International Security; Director in the Office of Export Control Policy and Cooperation in the Office of Arms Control and Nonproliferation; and Senior Advisor for Arms Control, Nonproliferation, and Outreach in the Office of Defense Nuclear Nonproliferation. From 1995 to 1999, he served as Foreign Affairs Analyst in the Office of International Policy and Analysis Division at the Department of Energy. From 1990 to 1995, he was a policy analyst and program coordinator for several non-governmental organizations that focus on arms control and nonproliferation. He received a B.A. from Cornell University and an M.A. from the George Washington Elliot School of International Affairs.



## JOHN SCOTT

John Scott started at Los Alamos National Laboratory in 1998 as a postdoc in the weapon design division after completing his Ph.D. in nuclear engineering at U.C. Berkeley. After becoming a staff member in 2000, he joined the team responsible for the W88. He later served as a system point of contact for the W88, and lead of the LANL secondary design team for Reliable Replacement Warhead project. In 2007, John served as a deputy group leader leading the B61 while simultaneously serving as a system point of contact for the B61. John served as the LANL member of the ASC Predictive Science Panel from 2009 to 2013 and has been the project leader for weapons performance metrics in the Advanced Certification program since 2009. Currently, John serves as the Laboratory program lead to develop the capability to certify a primary with a re-use pit and he is the leader for Integrated Design and Assessment group with the Theoretical Design Division.



## WILLIAM TOBEY

William Tobey is a Senior Fellow at the Belfer Center for Science and International Affairs. He was most recently Deputy Administrator for Defense Nuclear Nonproliferation at the National Nuclear Security Administration. There, he managed the U.S. government's largest program to prevent nuclear proliferation and terrorism by detecting, securing, and disposing of dangerous nuclear material. Mr. Tobey also served on the National Security Council Staff in three administrations, in defense policy, arms control, and counter-proliferation positions. He has participated in international negotiations ranging from the START talks with the Soviet Union, to the Six Party Talks with North Korea. He also has extensive experience in investment banking and venture capital.