

PUBLIC POLICY
AND
NUCLEAR THREATS

TRAINING THE NEXT GENERATION

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About the Speakers

Marvin L. Adams is the HTRI Professor in the Department of Nuclear Engineering and the director of the Institute for National Security Education and Research at Texas A&M University. His areas of interest include computational transport theory, efficiently massively parallel implementation of coupled-physics calculations, and nuclear reactor analysis and design. Adams is a fellow of the American Nuclear Society. He has been a consultant for the Sandia, Los Alamos, and Lawrence Livermore National Laboratories. He spent more than five years at Lawrence Livermore before joining the faculty at Texas A&M. He received his Ph.D. and M.S.E. in nuclear engineering from the University of Michigan and his B.S. in nuclear engineering from Mississippi State University.

Ambassador Linton F. Brooks is an independent consultant on national security issues, a Senior Advisor at the Center for Strategic and International Studies, and an advisor to two of the Department of Energy weapons 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.

Amb. Brooks has more than four decades of experience in national security, including service as Assistant Director of the 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.

Brooks holds a B.S. in physics from Duke University, where he was elected to Phi Beta Kappa, and an M.A. in government and politics from the University of Maryland. He is a Distinguished Graduate of the U.S. Navy War College and has published a number of prize-winning articles on naval and nuclear strategy.

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, in-

ternational 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.

Tai Ming Cheung is a research fellow and research coordinator at IGCC. His responsibilities include managing the institute's track two program the Northeast Asia Cooperation Dialogue (NEACD), which brings together senior foreign ministry and defense officials as well as academics from the United States, China, Japan, South Korea, North Korea, and Russia for informed discussions on regional security issues. He also teaches at the School of International Relations and Pacific Studies (IR/PS) at UC San Diego. Cheung is a long-time analyst of Chinese defense and national security affairs. He was based in Asia from the mid-1980s to 2002 covering political, economic and strategic developments in greater China. He was also a journalist and political and business risk consultant in northeast Asia. He received his Ph.D. from the War Studies Department at King's College, London University, in 2006.

Bill Daitch is a member of the Senior Executive Service in the Department of Homeland Security. He leads the National Technical Nuclear Forensics Center (NTNFC) in the Domestic Nuclear Detection Office in Washington, D.C. He graduated from the United States Naval Academy in 1983, completed nuclear power and submarine training, and served on nuclear missile submarines in a variety of assignments. He entered the Navy Reserve in 1990, served two tours as Commanding Officer of submarine support detachments, and is currently a Captain serving as the Navy Emergency Preparedness Liaison Officer for Naval District Washington as the focal point for "Defense Support of Civil Authorities" in disaster situations. As a federal civilian he served at the Defense Threat Reduction Agency from 1990 to 2005 as chief of the Nuclear/Radiological Support Branch and other nuclear-related assignments. In April 2005 he transferred from DoD to DHS upon the stand-up of the Domestic Nuclear Detection Office.

Jay Davis is a nuclear physicist trained at the Universities of Texas and Wisconsin. During his career at the Lawrence Livermore National Laboratory, he built accelerators for research in nuclear physics and for materials science in support of the fusion program. He also founded the Center for Accelerator Mass Spectrometry, making possible the application of isotopic tracing and tagging tools to a wide range of problems in the geosciences, toxicology, nutritional sciences and oncology, archaeology, and nuclear forensics. In the national security component of his career, he worked to develop techniques for arms control treaties, was a senior member of the NEST operation, served as an inspector in Iraq for UNSCOM after the First Gulf War, and then served as the founding director of the Defense Threat Reduction Agency. He has more than eighty technical publications in a variety of areas and several patents that form the basis for companies in the bioscience and pharmaceutical sciences area.

In retirement from LLNL since 2002, he now grows grapes, and consults and serves on a variety of foundation and advisory boards, including the Board on Army Science and Technology and the Nuclear and

Radiation Studies Board for the National Academy and Threat Reduction Advisory Committee for the Department of Defense. Among his honors are Phi Beta Kappa, an AEC Postdoctoral Fellowship, Fellowship in the American Physics Society, being picked as one of the Centennial Lecturers for the APS's Centennial Year, and the Distinguished Service Medal of the Department of Defense, DoD's highest civilian award.

Stephan Haggard is currently professor of political science at the School of International Relations and Pacific Studies at UC San Diego. He was interim director of IGCC (1997–99) and is active in the IGCC National Security Fellows program. Haggard's research interests center on the international relations and comparative political economy of East Asia and Latin America. He is currently conducting research on the political and social consequences of globalization. He has written on East Asia's economic growth, the Latin American and East Asian financial crises, democratization, and federalism. His books include *Pathways from the Periphery: The Politics of Growth in the Newly Industrializing Countries* (1990); *The Political Economy of Democratic Transitions* (with Robert Kaufman 1995); *Developing Nations and the Politics of Global Integration* (1995); *The Political Economy of the Asian Financial Crisis* (2000); and *From Silicon Valley to Singapore: Location and Competitive Advantage in the Hard Disk Drive Industry* (with David McKendrick and Richard Doner, 2000). His latest work is *North Korea: Aid, Markets and Reform* (with Marcus Noland, Columbia University Press, 2007). He received his Ph.D. from UC Berkeley.

Chen Kane is a fellow with the CSIS International Security Program. She works on projects related to the proliferation of nuclear weapons, weapons of mass destruction, and the International Atomic Energy Agency. She has served as an adviser to the Jebson Center for Counter-Terrorism Studies at Tufts University and the Crown Center for Middle East Studies at Brandeis University. She worked for six years at the Israel Atomic Energy Commission in the External Relations Division, eventually becoming its director. She has held research positions at the Belfer Center for Science and International Affairs at Harvard University and at the Washington Institute for Near East Policy. Prior to joining the Israel Atomic Energy Commission, Kane served as an officer in the Israel Defense Forces. She holds a B.A. in sociology, anthropology, and political science from Tel Aviv University, where she also completed an M.A. in security studies. She received her M.A.L.D. and a Ph.D. from Tufts University's Fletcher School of Law and Diplomacy.

Kerry Kartchner is senior advisor for strategic planning in the Office of Strategic Planning and Outreach, Bureau of International Security and Nonproliferation, U.S. Department of State. In 2006, he completed a two-year detail to the Advanced Systems and Concepts Office of the Defense Threat Reduction Agency, where he was chief of the Division of Strategy and Policy Studies. Prior to that assignment, he was senior advisor for missile defense policy in the Bureau of Arms Control, U.S. Department of State. His current duties include overseeing the development and execution of a comprehensive public outreach effort on nonproliferation and arms control, as well as advanced planning and outreach initiatives on policies related to deterrence, and weapons of mass destruction.

Kartchner is also an adjunct professor in Missouri State University's Graduate Department of Defense and Strategic Studies, located near Washington, D.C., where he teaches courses on arms control and strategic culture.

Kartchner has more than twenty-five years of experience in the field of national security affairs, with particular emphasis on nuclear weapons policy and arms control. Previous assignments have included serving as the senior State Department representative to the Standing Consultative Commission (for the ABM treaty), and to the Joint Compliance and Inspection Commission (for the START treaty). While serving as senior State Department representative to the Joint Compliance and Inspection Commission, he was chairman and chief U.S. spokesman for the Inspection Protocol Working Group and the Space Launch Issues Working Group.

Kartchner was the recipient of the State Department's first annual Secretary's Award for Public Outreach (2004), and is the recipient of a Meritorious Honor Award (1999) and a Hubert H. Humphrey Arms Control Fellowship (1989), both from the Arms Control and Disarmament Agency. He is the author of the book *Negotiating START: Strategic Arms Reduction Talks and the Quest for Strategic Stability* (New Brunswick: Transaction Books, 1992), as well as a contributor to other journals and edited collections. He has a Ph.D. and M.A. from the University of Southern California (1987 and 1984) and a B.A. in international relations from Brigham Young University (1981). He is a frequent speaker on topics related to arms control, U.S. foreign policy, and ballistic missile defense.

Robert E. Kelley is currently a senior inspector in the IAEA Department of Safeguards. He is a nuclear engineer from the United States who has worked in the U.S. Nuclear Complex for more than thirty years. He has worked in nuclear nonproliferation efforts at Livermore, Los Alamos and was director of the Remote Sensing Laboratory in Las Vegas, Nevada. Kelley has field experience as an inspector and chief inspector including four years inspecting Iraq's clandestine nuclear weapons program in the 1992 and 2002 time periods. He also participated in the evaluation of South Africa's nuclear weapons in 1993, and the inspections of the vestiges of Libya's nuclear weapons program in 2004. At IAEA headquarters his main areas of responsibility are in Africa, the Middle East and South Asia. Kelley's practical laboratory experience includes plutonium metallurgy, gas centrifuge design, weapons engineering, nuclear emergency response and remote sensing.

Jeffrey Lewis is director of the Nuclear Strategy and Nonproliferation Initiative at the New America Foundation. Lewis is the author of *Minimum Means of Reprisal: China's Search for Security in the Nuclear Age* (MIT Press, 2007). He is a research affiliate with the Project on Managing the Atom at Harvard University and a member of the editorial advisory board of the *Bulletin of the Atomic Scientists*. Lewis also founded and maintains the leading blog on nuclear arms control and nonproliferation, ArmsControlWonk.com.

Before joining the New America Foundation, Lewis was executive director of the Managing the Atom Project at the Belfer Center for Science and International Affairs. Previously, he served as a research fellow at the Center for International and Security Studies at the University of Maryland School of Public

Policy (CISSM), executive director of the Association of Professional Schools of International Affairs, a visiting fellow at the Center for Strategic and International Studies, and with the Office of the Undersecretary of Defense for Policy.

Dr. Lewis received his Ph.D. in policy studies (international security and economic policy) from the University of Maryland and his B.A. in philosophy and political science from Augustana College in Rock Island, Illinois.

Michael May is professor emeritus (research) in the School of Engineering and a senior fellow with the Freeman-Spogli Institute for International Studies at Stanford University. He is the former co-director of Stanford University's Center for International Security and Cooperation, having served seven years in that capacity through January 2000. May is director emeritus of the Lawrence Livermore National Laboratory where he worked from 1952 to 1988. While there, he held a variety of research and development positions, serving as director from 1965 to 1971.

May was technical adviser to the Threshold Test Ban Treaty negotiating team; a member of the U.S. delegation to the Strategic Arms Limitation Talks; and at various times has been a member of the Defense Science Board, the General Advisory Committee to the AEC, the Secretary of Energy Advisory Board, the RAND Corporation Board of Trustees, and the Committee on International Security and Arms Control of the National Academy of Sciences. He is a member of the Council on Foreign Relations and the Pacific Council on International Policy, and a Fellow of the American Physical Society and the American Association for the Advancement of Science.

May received the Distinguished Public Service and Distinguished Civilian Service Medals from the Department of Defense, and the Ernest Orlando Lawrence Award from the Atomic Energy Commission, as well as other awards. May's current research interests are in the area of safeguarding the nuclear fuel cycle, nuclear terrorism, energy, security and environment, and the relation of nuclear weapons and foreign policy.

Pavel Podvig is a researcher at the Center for International Security and Cooperation at Stanford University. Before coming to Stanford in 2004, he worked at the Center for Arms Control Studies at the Moscow Institute of Physics and Technology (MIPT), which was the first independent research organization in Russia dedicated to analysis of technical issues related to arms control and disarmament. In Moscow, Podvig was the leader of a major research project and the editor of the book *Russian Strategic Nuclear Forces* (MIT Press, 2001). In recognition of his work in Russia, the American Physical Society awarded Podvig the Leo Szilard Lectureship Award of 2008 (with Anatoli Diakov). In 2000–2004, Podvig worked with the Program on Science and Global Security at Princeton University and earlier with the Security Studies Program at MIT. His current research focuses on the Russian strategic forces and nuclear weapons complex, as well as technical and political aspects of nuclear nonproliferation, disarmament, missile defense, and U.S.–Russian arms control process.

Podvig received his degree in physics from MIPT and his Ph.D. in political science from the Moscow Institute of World Economy and International Relations. Since 2001, Podvig has been a member of the Board of Directors of the Bulletin of the Atomic Scientists. He is a member of the APS Committee on International Freedom of Scientists and is serving as the chair of the committee in 2008.

Robert Powell is Robson Professor of Political Science at UC Berkeley and previously taught at the University of Michigan and Harvard. He specializes in the use of game theory to study international conflict and political conflict more generally. He is the author of *Nuclear Deterrence Theory: The Search for Credibility* (Cambridge University Press, 1990); *In the Shadow of Power: States and Strategies in International Politics* (Princeton University Press, 1999); "Nuclear Deterrence Theory, Nuclear Proliferation, and National Missile Defense" (*International Security*, 2003); and "The Inefficient Use of Power: Costly Conflict with Complete Information" (*American Political Science Review*, 2004). More recently he has focused on the problem of allocating defensive resources against strategic attackers like terrorist groups, and has written "Defending Against Terrorist Attacks with Limited Resources" (*American Political Science Review*, 2007). He holds a B.S. in mathematics from Harvey Mudd College; an M.Phil in international relations from Cambridge University; and a Ph.D. in economics from UC Berkeley. He has been a Fulbright Scholar to the United Kingdom and is a member of the American Academy of Arts and Sciences (2004).

Jeffrey T. Richelson is a senior fellow with the National Security Archive. He received his Ph.D. from the University of Rochester and has taught at the University of Texas and American University. He is the author of a number of books, including *Spying on the Bomb: American Nuclear Intelligence from Nazi Germany to Iran and North Korea* (W.W. Norton, 2006), *The Wizards of Langley: Inside the CIA's Directorate of Science and Technology* (Westview, 2001), *America's Space Sentinels: DSP Satellites and National Security* (University Press of Kansas, 1999), and *America's Secret Eyes in Space: The US KEYHOLE Spy Satellite Program* (Harper & Row, 1990). His articles have appeared in the *Scientific American*, *Bulletin of the Atomic Scientists*, *International Journal of Intelligence and Counterintelligence*, *International Security*, *Intelligence and National Security*, and other publications.

Laura Rockwood is the section head for Non-Proliferation and Policy Making Organs in the Office of Legal Affairs of the IAEA, where she has served since 1985. She has been involved in all aspects of the negotiation, interpretation and implementation of IAEA safeguards agreements for over 20 years, and was the principal author of the document that became the Model Additional Protocol. She has participated, inter alia, in: the Director General's Expert Group on Multilateral Approaches to the Nuclear Fuel Cycle; three NPT Review Conferences; and the trilateral negotiations between the IAEA, Russia and the United States of an agreement on the verification of materials released from weapons programs.

Rockwood teaches classes in the IAEA's training courses and national and regional outreach programs. She is also a regular lecturer at the International School of Nuclear Law in Montpellier, France, and the World Nuclear University Summer Institute.

Rockwood received her B.A. from UC Berkeley and her J.D. from the University of California's Hastings College of the Law. She is a member of the State Bar of California and of the Washington, D.C., Bar Association.

Scott Sagan is a professor of political science and co-director of Stanford's Center for International Security and Cooperation. Before joining the Stanford faculty, Sagan was a lecturer in the Department of Government at Harvard University and served as a special assistant to the Director of the Organization of the Joint Chiefs of Staff in the Pentagon. He has also served as a consultant to the office of the Secretary of Defense and at the Los Alamos National Laboratory. 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 co-author with Kenneth N. Waltz of *The Spread of Nuclear Weapons: A Debate Renewed* (W. W. Norton, 2002). He is the co-editor of *Planning the Unthinkable* (Cornell University Press, 2000) with Peter R. Lavoy and James L. Wirtz.

Currently, Sagan's main research interests are nuclear proliferation in South Asia, ethics and international relations, and accidents in complex organizations. Sagan was the recipient of Stanford University's 1996 Hoagland Prize for Undergraduate Teaching and the 1998 Dean's Award for Distinguished Teaching. As part of CISAC's mission of training the next generation of security specialists, he and Professor Stephen Stedman founded Stanford's Interschool Honors Program in International Security.

John Scott was educated at UC Berkeley, where he received both his B.S. and Ph.D. in nuclear engineering in 1993 and 1998, respectively. He joined Los Alamos National Laboratory (LANL) at the end of 1998 as a post-doctoral research associate in the Thermonuclear Applications group and became a technical staff member in 2000. As a staff member, the primary focus of his work has been on evaluating the performance of secondaries in nuclear weapons systems. He was the secondary weapon physics design lead on the LANL team for the first Reliable Replacement Warhead competition. Currently, he is the deputy group leader for the B61 section of the nuclear weapons design division at LANL.

Susan Shirk is director of the University of California system-wide Institute on Global Conflict and Cooperation and professor of political science in the School of International Relations and Pacific Studies, University of California, San Diego. From 1997 to 2000, Shirk served as Deputy Assistant Secretary of State in the Bureau of East Asia and Pacific Affairs, with responsibility for the People's Republic of China, Taiwan, Hong Kong, and Mongolia.

Prof. Shirk founded in 1993 and continues to lead the Northeast Asia Cooperation Dialogue (NEACD), a "track two," or unofficial, forum for discussions of security issues among defense and foreign ministry officials and academics from the United States, Japan, China, Russia, South Korea, and North Korea.

Shirk's publications include her books *How China Opened Its Door: The Political Success of the PRC's Foreign Trade and Investment Reforms*; *The Political Logic of Economic Reform in China*; and *Competi-*

tive Comrades: Career Incentives and Student Strategies in China. Her latest book, *China: Fragile Superpower*, was published by Oxford University Press in 2007.

Shirk served as a member of the U.S. Defense Policy Board, the Board of Governors for the East-West Center (Hawaii), the Board of Trustees of the U.S.-Japan Foundation, and the Board of Directors of the National Committee on United States-China Relations. She is a member of the Council on Foreign Relations, and an emeritus member of the Aspen Strategy Group. As senior advisor to the Albright Group, Shirk advises private-sector clients on China and East Asia. She received her B.A. in political science from Mount Holyoke College, her M.A. in Asian studies from UC Berkeley, and her Ph.D. in political science from the Massachusetts Institute of Technology.

Etel Solingen is professor of political science at UC Irvine. Her most recent book *Nuclear Logics: Contrasting Paths in East Asia and the Middle East* (Princeton University Press 2007) is the recipient of the 2008 Woodrow Wilson Foundation Award for the best book on government, politics, or international affairs by the American Political Science Association, and of the 2008 APSA's Robert Jervis and Paul Schroeder Award for the Best Book on International History and Politics.

Solingen was vice-president of the International Studies Association, president of the International Political Economy Section of ISA, and the recipient of a MacArthur Foundation Research and Writing Award on Peace and International Cooperation, a Social Science Research Council-Mac Arthur Foundation Fellowship on Peace and Security in a Changing World, a Japan Foundation/SSRC Abe Fellowship, and a Center for Global Partnership/Japan Foundation fellowship, and Carnegie Corporation, USIP, Sloan Foundation, Columbia Foundation and other grants.

Solingen is also the author of *Regional Orders at Century's Dawn: Global and Domestic Influences on Grand Strategy* (Princeton University Press, 1998), *Industrial Policy, Technology, and International Bargaining: Designing Nuclear Industries in Argentina and Brazil* (Stanford University Press, 1996) and editor of *Scientists and the State* (University of Michigan Press, 1994). Her articles on international relations theory, international political economy, comparative regionalism, institutional theory, democratization, and international security appeared in the *American Political Science Review*, *International Organization*, *International Studies Quarterly*, *Comparative Politics*, *International Security*, *Global Governance*, *Journal of Peace Research*, *Journal of Theoretical Politics*, *International Relations of Asia-Pacific*, *Journal of Democracy*, *Asian Survey*, and *International History Review*, among others. She served as Chair of the Institute on Global Conflict and Cooperation's Steering Committee between 2004 and 2008, and is currently Review Essay Editor of the journal *International Organization*.

Michael O. Wheeler is on detached duty from the Institute for Defense Analyses (IDA) to the Defense Threat Reduction Agency (DTRA) where he serves as director of its in-house think tank, the Advanced Systems and Concepts Office (ASCO). He remains a member of the Strategic Advisory Group (SAG) at U.S. Strategic Command (USSTRATCOM) and a consultant to the Defense Science Board where he currently is on the Task Force on Nuclear Deterrence Skills. In 1998 he was staff director of the Congressionally-mandated Commission on Maintaining U.S. Nuclear Weapons Expertise (the Chiles Commission)

and in 1991 co-authored with Tom Reed the SAG report on "The Role of Nuclear Weapons in the New World Order."

Wheeler received his B.S. at the Air Force Academy, an M.A. from Georgetown University, and an M.A. and Ph.D. from the University of Arizona. He also is a graduate of National War College and MIT's Seminar XXI executive development program. During his Air Force career from which he retired in 1990, Wheeler taught at the Air Force Academy, served in Tactical and Strategic Air Commands, was a planner on the Air Staff and special assistant to the Chief of Staff of the Air Force and the Chairman of the Joint Chiefs of Staff (JCS), served at the State Department while a White House fellow and on detached duty to the National Security Council, was chief of the Nuclear Negotiations Division on the Joint Staff, and ended his military career as arms control advisor to the JCS Chairman.

Wheeler is a recipient of the Defense Distinguished Service Medal and the Chairman of the Joint Chiefs of Staff Medal for Outstanding Public Service. Wheeler also is a Vietnam veteran and was awarded the Bronze Star. He is a member of the International Institute for Strategic Studies, the American Society of International Law, the American Political Science Association, and the International Studies Association. Wheeler has authored a number of monographs, book chapters, and articles on strategic issues related to weapons of mass destruction.