

#### VENUE

Virginia Tech Research  
Center Arlington  
Falls Church Room  
900 N. Glebe Road  
(Metro Ballston)  
Arlington, VA 22203

#### DATE & TIME

Monday, May 13, 2019  
9:00am – 6:00pm

#### RSVP at

[https://alternativevisions.  
eventbrite.com](https://alternativevisions.eventbrite.com)

#### ORGANIZERS

Joseph Pilat (LANL/WWC)  
Sonja Schmid (STS VT)  
Patrick Roberts (SPIA VT)  
Ariel Ahram (SPIA VT)

#### SUPPORTED BY

Virginia Tech's

- Policy Strategic Growth Area
- Office of the Vice President for the National Capital Region
- Department of Science, Technology, and Society
- School of Public and International Affairs

# Alternative Visions for Our Shared Nuclear Future: Energy, Security, and Policy

## A Workshop



The nuclear energy industry plays a vital role in America's future, affecting U.S. energy policy, sustainability, and national security. Yet the industry faces new and unprecedented challenges. Aging domestic infrastructure, international competition from Russia, China, and others, and geopolitical instability create profound uncertainties for the U.S. nuclear industry.

This workshop examines how the U.S. might balance competing priorities as policy makers review the nation's nuclear energy policy.

Developing a nuclear energy policy that addresses the industry's challenges requires transcending the traditional "silos" that separate technical, commercial, and policy concerns. Such divisions can mask areas of interdependence and inadvertently create dangers. For example, to be commercially viable, new reactor technologies depend on the identification of safeguards that are comprehensive, but also economically feasible. Moreover, safety risks can transform into security crises if they lead to accidents that destabilize political regimes or cause damage to neighboring countries. Finally, developing and maintaining expertise to prevent the diversion of nuclear material towards weapons purposes requires a vibrant and advanced nuclear industry.

This workshop seeks to overcome the traditional segmentation of safety, security, and safeguards in the nuclear field in order to gain a more comprehensive perspective on how the nuclear sector can respond to current challenges. By linking commercial and strategic concerns, and by bringing together policy-makers, business leaders, and scholars across different fields, it charts new approaches to nuclear issues and elucidates alternative visions for our shared nuclear future.



# Agenda

9:00-9:45am	Registration and Continental breakfast
9:45-10:00am	<b>Welcome and Introduction</b> Steven McKnight, Vice President for the National Capital Region, Virginia Tech Anne Khademian, Presidential Fellow and Co-Lead, Policy Strategic Growth Area Alireza Haghghat, Professor, Nuclear Engineering Program, Virginia Tech
10:00-11:30am	<b>Panel 1: Priorities for Nuclear Energy Policy</b> Charles Clancy, Hume Center, Virginia Tech Laura Holgate, Nuclear Threat Initiative Everett Redmond, Nuclear Energy Institute Robert Rosner, University of Chicago Page Stoutland, Nuclear Threat Initiative <i>Moderator: Joseph Pilat, Los Alamos National Laboratory/Woodrow Wilson Center</i>
11:30-11:45am	Break
11:45am-1:15pm	<b>Lunch Keynote:</b> Daniel Poneman, Centrus Energy Group: The Case for U.S. Nuclear Leadership
1:15-1:30pm	Break
1:30-3:00pm	<b>Panel 2: Supporting National Security: What Role for the Nuclear Industry?</b> Michael J. Ford, Harvard University Robert Ichord, Atlantic Council Ted Jones, Nuclear Energy Institute Adam Scheinman, National War College Douglas Shaw, Nuclear Threat Initiative <i>Moderator: Sonja Schmid, STS VT</i>
3:00-3:15pm	Break
3:15-4:45pm	<b>Panel 3: The Human Capital Challenge for Nuclear Expertise: Where does it come from? What should it be?</b> Noël Bakhtian, Center for Advanced Energy Studies, Idaho National Laboratory Lori Brady, Nuclear Energy Institute William Charlton, University of Texas Austin Rebecca Hersman, Center for Strategic and International Studies Kasia Mendelsohn, National Nuclear Security Administration, Department of Energy <i>Moderator: Patrick Roberts, SPIA VT</i>
4:45-5:00pm	<b>Wrap-up and Adjourn</b>
5:00-6:00pm	Reception

## Panel 1

# Panel Descriptions

## **Priorities for Nuclear Energy Policy**

The nuclear energy field faces challenges from international competition, disruption from new and emerging designs in fuel cycle technologies, and distinctive threats to physical and cyber-infrastructures. Recent discussions about U.S. nuclear technology exports frame a conflict between nonproliferation priorities and commercial viability. This panel focuses on recent developments and their significance for the future of the nuclear field. Panelists identify and analyze critical junctures in international nuclear trade, emerging technologies in the nuclear fuel cycle (including new reactor designs), and challenges posed by cyberwarfare and other dangers.

---

## Panel 2

## **Supporting National Security: What Role for the Nuclear Industry?**

The military and civilian applications of nuclear energy in the U.S. have always been interdependent. As strategic priorities have evolved, the military has increasingly relied on the civilian nuclear industry for support. This panel addresses the intersection of national security and commercial viability in the nuclear industry. Panelists will discuss how managing overlaps between military and civilian nuclear spheres creates both challenges and opportunities for rethinking conventional tools of controlling nuclear matters.

---

## Panel 3

## **The Human Capital Challenge for Nuclear Expertise: Where does it come from? What should it be?**

This panel will explore ways to develop the diverse skill sets necessary to manage a global nuclear energy industry, focusing on the pipelines for training individuals and ways to bridge gaps and silos that artificially separate technical aspects from nuclear policy.

## Panelists' Bios



**Ariel I. Ahram** is an associate professor in Virginia Tech's School of Public and International Affairs (SPIA) in the National Capital Region. He has been a fellow at Rice University Baker Institute and the Woodrow Wilson Center, and has lectured and written widely on issues of security, energy, and environmental change in the Middle East. He earned a Ph.D. in government and an M.A. in Arab studies from Georgetown. His most recent book is *Break All the Borders: Separatism and the Reshaping of the Middle East* (Oxford University Press, 2019).



**Dr. Noël Bakhtian** is the Director of the Center for Advanced Energy Studies (CAES), a research, education, and innovation consortium bringing together Idaho National Laboratory with Boise State University, Idaho State University, University of Idaho, and University of Wyoming. Prior to joining CAES, Dr. Bakhtian served as a Senior Policy Advisor for environment and energy in the White House Office of Science and Technology Policy (OSTP). Prior to OSTP, she served as the inaugural Energy-Water Nexus lead at the DOE Office of International Affairs, worked as technical lead on numerous innovative grant programs for DOE's Wind and Water Power Technologies Office, consulted on energy R&D and investment for DARPA, and served as an energy and environment Fellow in the U.S. Senate. Dr. Bakhtian is a member of the Board on Science, Technology, and Economic Policy at the National Academies of Sciences, Engineering, and Medicine. She was recently selected as the 11th most powerful female engineer of the year by Business Insider. Dr. Bakhtian earned her engineering doctorate at Stanford University's Department of Aeronautics and Astronautics; holds master's degrees from Stanford University and the University of Cambridge, where she was a Churchill Scholar; and completed her bachelor's degree in mechanical engineering and physics at Duke University.

## Panelists' Bios (cont.)



**Lori Brady**, Director of Human Resources at the Nuclear Energy Institute, is an accomplished HR professional with over 22 years of experience in the healthcare, hospitality, and energy industries. At the Nuclear Energy Institute, Ms. Brady is responsible for coordinating nuclear energy industry workforce programs and initiatives and serves as the Vice President for the Center for Energy Workforce Development. She is also responsible for implementing human resource management strategies that enable the Nuclear Energy Institute to recruit, train, and retain a high performing and motivated workforce. Ms. Brady has served as a Vice President, Human Resources at Neiswanger Management Services, as well as the Corporate Director, Human Resources for Mardeck, Ltd., Radiology Imaging Associates, and CRAssociates. In those positions, Ms. Brady was responsible for managing the strategic and operational activities for all HR functional areas. Ms. Brady holds a BA in International Studies from Kenyon College and an MBA in International Business from The George Washington University. She is certified through the Society for Human Resource Management as a Senior Certified Professional (SHRM-SCP).



**Dr. William (Bill) Charlton** is a Professor in the Nuclear and Radiation Engineering Program within the Mechanical Engineering Department at the University of Texas at Austin, where he also serves as the Director of the Nuclear Engineering Teaching Laboratory (NETL) which houses the newest research reactor in the U.S. He is an expert in the application of nuclear science and engineering for societal solutions (including national security, health care, and the environment). He has over 15 years of technical expertise in the design, development, testing, and evaluation of nuclear systems, analytical techniques, and instrumentation. From 2015-2017, he was the Research Director for the National Strategic Research Institute (NSRI) and the Associate Vice Chancellor for Research at the University of Nebraska. From 2003-2015, Dr. Charlton served on the faculty of the Department of Nuclear Engineering at Texas A&M University and was the founding Director of the Nuclear Security Science & Policy Institute (NSSPI) from 2006-2015. He served as a Technical Staff Member in the Nonproliferation and International Security Division at Los Alamos National Laboratory from 1998-2000. Dr. Charlton earned a Ph.D. in Nuclear Engineering from Texas A&M University. Among his many awards are the Special Service Award from the Institute of Nuclear Materials Management in 2010. He has over 200 technical publications in referred journals and conference proceedings.

## Panelists' Bios (cont.)



**Dr. Charles Clancy** is the Executive Director of Virginia Tech's Hume Center for National Security and Technology and is the Bradley Professor of Electrical and Computer Engineering. With 85 faculty and staff, the Hume Center engages over 400 students annually in research and experiential learning focused in national security and technology. Dr. Clancy is an internationally recognized expert at the intersection of wireless, cybersecurity, and artificial intelligence. Prior to joining Virginia Tech in 2010, he served as a researcher at the National Security Agency. Dr. Clancy received his BS in Computer Engineering from the Rose-Hulman Institute of Technology, MS in Electrical Engineering from the University of Illinois, and PhD in Computer Science from the University of Maryland. He is a Senior Member of the IEEE and has over 200 peer-reviewed technical publications and patents, is co-author to five books, and co-founder to four venture-backed startup companies.



**Michael Ford** earned his Ph.D. in Engineering (Engineering and Public Policy) from Carnegie Mellon University (CMU). Prior to his doctoral studies, Mike completed a distinguished career in the United States Navy, where he served multiple tours as a surface ship commanding officer and also served as the senior nuclear engineer of an aircraft carrier. He held Navy sub-specialties in nuclear engineering, finance, and operations analysis. He is a past Fellow in the MIT Center for International Studies Seminar XXI program, specializing in national security and international affairs. In his research at CMU, Mike examined the potential for nuclear energy to play a role in decarbonizing the energy sector. He explored the history of advanced reactor research and development (R&D) in the United States, the potential for broader nuclear development worldwide, and also studied issues surrounding novel nuclear deployment options such as floating nuclear power plants. As an Environmental Fellow at the Harvard University Center for the Environment, Mike continues to examine challenges and opportunities for nuclear energy focusing on market and regulatory constraints as well as R&D policy structures that impact the potential of nuclear energy to play a significant role in a future low-carbon energy mix.

## Panelists' Bios (cont.)



**Rebecca Hersman** is director of the Project on Nuclear Issues and Senior Adviser for the International Security Program at CSIS. Ms. Hersman joined CSIS in April 2015 from the Department of Defense (DOD), where she served as deputy assistant secretary of defense for countering weapons of mass destruction (WMD) since 2009. In this capacity, she led DOD policy and strategy to prevent WMD proliferation and use, reduce and eliminate WMD risks and respond to WMD dangers. Prior to joining DOD, Ms. Hersman was a senior research fellow with the Center for the Study of Weapons of Mass Destruction at the National Defense University from 1998 to 2009. Her primary projects focused on the role of DOD in mitigating the effects of chemical and biological weapons attack, concepts and strategies for eliminating an adversary's WMD programs, as well as proliferation issues facing the United States. Ms. Hersman previously held positions as an international affairs fellow at the Council on Foreign Relations, a special assistant to the undersecretary of defense for policy, and a member of the House Armed Services Committee professional staff. She holds an M.A. in Arab studies from Georgetown University and a B.A. from Duke University.



**Laura S. H. Holgate** is currently Vice President for Materials Risk Management at the Nuclear Threat Initiative, a nongovernment organization dedicated to preventing catastrophic attacks with weapons of mass destruction and disruption—nuclear, biological, radiological, chemical, and cyber. Holgate leads NTI's efforts relating to securing and reducing highly enriched uranium, plutonium, and radiological sources, as well as nuclear cooperation with Russia, Central Asia, and other countries. She served as US Ambassador to the Vienna Office of the United Nations and the International Atomic Energy Agency, where she implemented US policy on nuclear nonproliferation, nuclear security, verification of the Iran deal, nuclear testing, anti-corruption, drug policy, export control, and the Nuclear Suppliers Group. Holgate was previously special assistant to the president for weapons of mass destruction terrorism and threat reduction on the National Security Council. Prior to that, she held senior positions at NTI and the Departments of Energy and Defense. Holgate graduated from Princeton University and the Massachusetts Institute of Technology. She was a researcher at Harvard University's Belfer Center for Science and International Affairs where she is now a senior non-resident fellow. She co-founded Gender Champions in Nuclear Policy, serves on several advisory boards, and is a member of the Council on Foreign Relations.

## Panelists' Bios (cont.)



**Dr. Robert F. Ichord, Jr.** is a senior fellow at the Atlantic Council's Global Energy Center where he focuses on power sector transformation, global nuclear power and national security. He is currently serving as the rapporteur for the Atlantic Council's high-level Task Force on US Nuclear Leadership. He has a distinguished forty-year US government career, serving with DOE, USAID and the Department of State to advance U.S. international energy policy and programs, including nuclear safety initiatives in Eastern Europe and the former Soviet Union. He created innovative, cost-sharing private public partnerships linking US utilities, regulators, and industrial companies with counterparts in Europe. He retired in 2016 from the US Department of State, where he served as deputy assistant secretary for energy transformation in the Energy Resources Bureau. Dr. Ichord is a graduate of Denison University (BA), The Fletcher School of Law and Diplomacy (MALD), and the University of Hawaii (PhD). He is a recipient of numerous honors and awards, including "The Secretary's Career Achievement Award" for his distinguished service in 2016. He is author of numerous articles, Atlantic Council reports and blogs, and a book on Indonesia's energy policy.



**Ted Jones** is an expert on international energy markets and nuclear trade. As Director for Supplier International Relations at the Nuclear Energy Institute, Ted leads NEI's efforts related to U.S. industrial policy in the nuclear energy sector, including international trade, tax and regulatory issues affecting infrastructure and export promotion of domestic nuclear suppliers. Jones previously served as policy director for the U.S.-India Business Council at the U.S. Chamber of Commerce. In that capacity, he managed trade missions to India with domestic manufacturers and suppliers, and developed industry positions related to market development. During his tenure at the U.S.-India Business Council, Ted was instrumental in securing approvals from Congress, the International Atomic Energy Agency and the Nuclear Suppliers Group for admitting India to global commercial nuclear trade. Congress approved the U.S.-India Civilian Nuclear Initiative in 2008.



## Panelists' Bios (cont.)



**Kasia Mendelsohn** is the Policy Director for the Office of Defense Nuclear Nonproliferation and the Assistant Deputy Administrator for Nonproliferation and Arms Control (NPAC), at the U.S. Department of Energy's National Nuclear Security Administration (DOE/NNSA). Ms. Mendelsohn previously served concurrently as the Associate Assistant Deputy Administrator for NPAC and the Director of the NPAC Office of Nuclear Safeguards and Security. Ms. Mendelsohn has served in several other capacities at DOE/NNSA, including as the Director of NPAC Policy, Director of the Office of Global Nuclear Material Threat Reduction within the Office of Global Threat Reduction (GTRI), Deputy Director for the Global Regimes/Regional Security and Nonproliferation Policy program in the Office of Nonproliferation Policy, and as DOE/NNSA's representative to the U.S. Biological Weapons Convention protocol negotiations. Prior to joining DOE/NNSA in 1999, Ms. Mendelsohn worked at the U.S. Department of State in the Office of Nuclear Energy and as a defense contractor for DynCorp. Much of Ms. Mendelsohn's career has focused on addressing urgent national security issues, including by countering the growth of plutonium and highly enriched uranium (HEU) stockpiles, strengthening multilateral nonproliferation treaties and agreements, and enhancing international nuclear safeguards and security of nuclear materials and facilities worldwide. Ms. Mendelsohn holds a Bachelor's degree in political science from Barnard College and a Master's degree in international security policy from Columbia University's School of International and Public Affairs.



**Joseph F. Pilat** is senior advisor in the National Security Office, Office of the Director, Los Alamos National Laboratory, where he provides policy support to the laboratory director, senior leadership and division programs, administering and conducting analyses for the Laboratory, DOE/NNSA, and other US government agencies, particularly in the areas of arms control, nonproliferation, counterproliferation, and counterterrorism. Pilat is also a Global Fellow in International Security Studies at the Wilson Center in Washington, DC, and a member of the Proliferation Resistance and Physical Protection Working Group, Gen IV International Forum. He is the editor of *Atoms for Peace: A Future After 50 Years?* (Woodrow Wilson Press with Johns Hopkins University Press, 2007). He holds a PhD in history from Georgetown University.

## Panelists' Bios (cont.)



**Daniel B. Poneman** is president and chief executive officer of Centrus Energy Corp. From 2009 to 2014, he was the Deputy Secretary of Energy. His responsibilities spanned the range of U.S. energy policies and programs, including cybersecurity, project management, national security, and international cooperation. He was also responsible for the Department's efforts on resilience and emergency response, in cases ranging from Fukushima to Hurricane Sandy. In prior tours in government, Mr. Poneman served as a White House Fellow and as Director of Defense Policy and Arms Control for the National Security Council. From 1993 through 1996 he was Special Assistant to the President and Senior Director for Nonproliferation and Export Controls at the National Security Council. His responsibilities included the development and implementation of U.S. policy in such areas as peaceful nuclear cooperation, missile technology, space-launch activities, sanctions determinations, chemical and biological arms control efforts, and conventional arms transfer policy. Mr. Poneman has published widely on national security issues. His third book, *Going Critical: The First North Korean Nuclear Crisis* (with Joel Wit and Robert Gallucci), received the 2005 Douglas Dillon Award for Distinguished Writing on American Diplomacy. Mr. Poneman is a Senior Fellow at the Belfer Center for Science and International Affairs at the Harvard Kennedy School, a Distinguished Fellow at the Paulson Institute, and a member of the Council on Foreign Relations. He received A.B. and J.D. degrees with honors from Harvard University and an M.Litt. in Politics from Oxford University.



**Everett Redmond** is Senior Technical Advisor, New Reactor and Advanced Technology, at the Nuclear Energy Institute. He is responsible for NEI's programs and policy efforts to support development and commercialization of advanced reactor technologies. Everett is also the NEI lead on the joint Global Nexus Initiative project with Partnership for Global Security. His prior responsibilities have included outreach to the nonproliferation community, and coordinating industry policies related to the front and back end of the fuel cycle. Everett's career at NEI began with responsibility for generic regulatory matters related to commercial used fuel storage and transportation in the United States. Everett has been with NEI since October 2006. Before joining NEI, Everett was a Principal Engineer at Holtec International from 1996 through 2006 and was responsible for the radiological design of the company's dry cask storage and transportation systems. Everett holds a Ph.D. from the Massachusetts Institute of Technology in Nuclear Engineering (1997).

## Panelists' Bios (cont.)



**Patrick S. Roberts** is an associate professor in the School of Public and International Affairs at Virginia Tech and a political scientist at the RAND Corporation. For 2017-2018, he served as a Council on Foreign Relations International Affairs Fellow in Nuclear Security in the State Department's Bureau of Intentional Security and Nonproliferation. Patrick holds a Ph.D. in Government from the University of Virginia, and he spent two years as a postdoctoral fellow, one at the Center for International Security and Cooperation at Stanford University and another at the Program on Constitutional Government at Harvard University. Patrick has published in a variety of scholarly and popular journals, and his research has been funded by the National Science Foundation, the National Oceanic and Atmospheric Administration, the United States Naval Laboratories, the Federal Emergency Management Agency, the Korean KHRIS research institute, and the Social Science Research Council. He is the author of *Disasters and the American State: How Politicians, Bureaucrats, and the Public Prepare for the Unexpected* (Cambridge, 2013).



**Robert Rosner** is a theoretical physicist at the University of Chicago since 1987, where he is the William E. Wrather Distinguished Service Professor in the departments of Astronomy & Astrophysics and Physics, the Enrico Fermi Institute and the Harris School of Public Policy Studies. His Ph.D. in physics is from Harvard University. He served as Argonne National Laboratory's Chief Scientist and Associate Laboratory Director for Physical, Biological and Computational Sciences (2002-2005); was Argonne's Laboratory Director from 2005-2009; and was the founding chair of the U.S. Department of Energy's National Laboratory Directors' Council (2007-2009). He was elected to the American Academy of Arts and Sciences (2001) and to the Norwegian Academy of Science and Letters (2004); he is a Fellow of the American Physical Society. Rosner co-founded the Energy Policy Institute of Chicago at the University of Chicago, and currently chairs the Science and Security Board of the Bulletin of the Atomic Scientists. His scientific work has been related to fluid dynamics and plasma physics problems, as well as development of modern high-performance computer simulation tools. Most recently, he's focused on studies of the nuclear fuel cycle, working on problems related to spent nuclear fuel disposition and nuclear nonproliferation.

## Panelists' Bios (cont.)



**Adam Scheinman** is a career member of the Senior Executive Service and DOE Faculty Chair at the National War College. From September 2014 through January 2017, he served as Special Representative of the President for Nuclear Nonproliferation, with rank of Ambassador, at the State Department, where he led U.S. diplomacy on the Nuclear Non-Proliferation Treaty. Prior to this, he served as Senior Advisor to Assistant Secretary for International Security and Nonproliferation at the U.S. Department of State, and from 2009 to 2013, as Director for Nonproliferation on the White House National Security Staff, where he oversaw all aspects of U.S. multilateral nuclear policy. From 1999 to 2009, Ambassador Scheinman held a number of positions in the Department of Energy's National Nuclear Security Administration, including Assistant Deputy Administrator 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 to the Assistant Secretary for Nonproliferation and National Security. Prior to 1999, he served as Foreign Affairs Analyst in the Office of International Policy and Analysis Division at the Department of Energy, and as policy analyst and program coordinator for several non-governmental organizations that focus on arms control and nonproliferation matters. He is an alumnus of Cornell University (B.A. 1987) and the George Washington University's Elliot School of International Affairs (M.A. 1990).



**Sonja Schmid** is an associate professor in the Department of Science, Technology, and Society (STS) at Virginia Tech, and serves as co-director of the graduate program in Science and Technology Studies in Northern Virginia. Her research focuses on nuclear history and policy, and more broadly on energy policy, socio-cultural studies of risk, and international and interdisciplinary scientific collaboration. For her first book, *Producing Power: The Pre-Chernobyl History of the Soviet Nuclear Industry* (MIT Press 2015), she studied the history and organization of the emerging nuclear power sector in the former USSR, relying on archival documents and interviews with veterans of the Soviet industry. In other work, she has traced Soviet nuclear technology transfer to Eastern Europe to explore the fate of Soviet-designed nuclear artifacts in the European Union. As part of her current research project, which explores the challenges of globalizing nuclear emergency response and is supported by an NSF CAREER Award, she has hosted a multi-year seminar series, SIREN. She is a member of Virginia Tech's Policy Strategic Growth Area, and lead faculty in the new graduate certificate in Nuclear Science, Technology, and Policy. She earned her Ph.D. in Science & Technology Studies from Cornell, and her M.A. in Slavic Studies from the University of Vienna, Austria.

## Panelists' Bios (cont.)



**Douglas B. Shaw**, PhD, serves as senior adviser for special projects at the Nuclear Threat Initiative. Prior to NTI, Shaw served in a variety of senior leadership roles in higher education, including as George Washington University's senior associate provost for international strategy; associate dean for planning, research, and external relations at GW's Elliott School of International Affairs; and director of policy planning in the Office of the President at Georgetown University. He also has served in leadership roles in several non-governmental organizations including Physicians for Social Responsibility, the Lawyers Alliance for World Security, College Bound, and the Worker Rights Consortium. During the Clinton administration, he served in the U.S. Department of Energy, working to secure fissile materials in Ukraine; in the U.S. Arms Control and Disarmament Agency supporting the indefinite extension of the Nuclear Non-Proliferation Treaty; and in the Office of Presidential Personnel in the White House. Shaw holds B.S.F.S., M.A., and Ph.D. degrees from Georgetown University in international relations and security studies. He has served as an assistant professor of international affairs at George Washington University and as a teaching fellow Georgetown and has published in *Arms Control Today*, *The Nonproliferation Review*, and *The Bulletin of the Atomic Scientists*.



**Page Stoutland**, NTI's vice president for scientific and technical affairs, joined the Nuclear Threat Initiative in 2010. He is responsible for NTI's scientific and technically related projects designed to strengthen nuclear security and reduce risks around the world. Current themes include: working to strengthen cybersecurity for nuclear weapons systems and at nuclear facilities, promoting improvements in nuclear materials security through the NTI Nuclear Materials Security Index, and strengthening technical cooperation with China. Prior to joining NTI, Stoutland spent the previous ten years at Lawrence Livermore National Laboratory where, among other senior positions, he was the director of strategy, program director for domestic security, and division leader for radiological & nuclear countermeasures. During this time, he was instrumental in developing and leading LLNL's programs in support of the post-9/11 homeland security effort. Stoutland holds a bachelor's degree from St. Olaf College in Northfield, Minnesota and a doctorate in chemistry from the University of California, Berkeley. After completing his doctorate, he spent two years at Stanford University as a National Institutes of Health post-doctoral fellow. Stoutland was also granted the lifetime honor of being an elected Fellow of the American Association for the Advancement of Science.

More information at  
[www.sts.vt.edu](http://www.sts.vt.edu)

## Science and Technology Studies

A diverse and interdisciplinary program at the intersection of policy, history, and the social sciences, we offer MS and PhD degrees customized for working professionals from a variety of backgrounds. Conveniently located near the West Falls Church metro, we accept new students with diverse backgrounds year-round to join our small, seminar-style evening classes.

## School of Public and International Affairs

More information at  
[www.spia.vt.edu](http://www.spia.vt.edu)

Virginia Tech's School of Public and International Affairs offers a unique, multi-disciplinary approach to local, national, and global policy questions. SPIA consists of the programs of Urban Affairs & Planning, the Center for Public Administration & Policy, and Government & International Affairs, and houses the Institute for Policy & Governance. Offering nationally-ranked degree programs in public affairs, SPIA serves undergraduate and graduate students in Arlington, Blacksburg, and Richmond, as well as online.



## Graduate Certificate in Nuclear Science, Technology, and Policy

More information at  
[nuclear.ncr.vt.edu/T/academics/graduate-certificate-in-nuclear-science-technology-and-policy](http://nuclear.ncr.vt.edu/T/academics/graduate-certificate-in-nuclear-science-technology-and-policy)

Virginia Tech's new Graduate Certificate in Nuclear Science, Technology, and Policy integrates policy and management with nuclear science and technology to prepare students for careers in the fields of nuclear safety, security, and safeguards. The certificate is a joint program among Science and Technology Studies (STS), the School of Public and International Affairs, and the Nuclear Engineering Program. Students are involved in hands-on simulations, exercises, and briefings and interact with government agencies, business leaders, and technical specialists. Starts Fall 2019.