

---

# WORKSHOPREPORT

---

## Collaboration Among Centers of Excellence in Asia

In Prague in 2009, President Barack Obama called nuclear terrorism “the most immediate and extreme threat to global security.” Less than a year later, President Obama initiated the first of several summits on nuclear security. With each successive summit, leaders have become more innovative in their individual and joint contributions to strengthening nuclear security. One innovation that has taken root is the creation of nuclear security support centers, sometimes called centers of excellence (COEs), dedicated to improving nuclear security through training, education, technology research and development, and other activities. Although many of these centers (which now number in the dozens) are purely national in their scope, others have taken on regional and collaborative activities.

The potential for collaboration among these COEs, varied as they are, was identified a few years ago by the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction and the International Atomic Energy Agency (IAEA). In Asia, South Korea, Japan, and China first began discussing the potential for collaboration in 2012. In 2014, they formed the Asia Regional Network working group under the International Network for Nuclear Security Training and Support Centers (NSSC Network) established by the IAEA in 2012. The regional working group has met several times in Vienna.

In 2014, the Center for Strategic and International Studies (CSIS) Proliferation Prevention Program, with generous support from the Carnegie Corporation of New York, and the Stanley Foundation co-hosted two workshops to explore the potential for collaboration among the existing and planned centers of excellence for nuclear security in Asia. The first workshop was a closed meeting held on the sidelines of a public forum titled *Nuclear Centers of Excellence in Asia: Next Steps* in July in Washington, DC.<sup>1</sup> The second workshop, organized in collaboration with the Vienna Center for Disarmament and Non-Proliferation (VCDNP), took place in October in Vienna. This workshop sought to identify lessons from models of collaboration from the European Union (EU), North Atlantic Treaty Organization (NATO), and IAEA experiences with COEs and explore how to build consistency and sustainability into the nuclear security regime beyond the last summit in 2016.

---

<sup>1</sup> Summary and presentations from the public forum, organized by CSIS, the US Department of Energy’s National Nuclear Security Administration, and the Japan Atomic Energy Agency, are available at [csis.org/event/nuclear-centers-excellence-asia-next-steps](http://csis.org/event/nuclear-centers-excellence-asia-next-steps).

Please contact Sharon Squassoni ([ppp@csis.org](mailto:ppp@csis.org)) at the CSIS Proliferation Prevention Program or Anya Loukianova ([aloukianova@stanleyfoundation.org](mailto:aloukianova@stanleyfoundation.org)) at the Stanley Foundation with questions or comments.

**Workshop 1**  
July 2014  
Washington, DC

**Workshop 2**  
October 2014  
Vienna, Austria

**Co-organized by**  
**The Center for Strategic &  
International Studies and**  
**The Stanley Foundation**

**CSIS** | CENTER FOR STRATEGIC &  
INTERNATIONAL STUDIES



**The  
Stanley  
Foundation**

The organizers prepared this report following the conference. It contains their interpretation of the proceedings and is not merely a descriptive, chronological account. Participants neither reviewed nor approved the report. Therefore, it should not be assumed that every participant subscribes to all recommendations, observations, and conclusions.

## The First Workshop

The COEs in Asia, which are part of the broader IAEA nuclear security training and support centers (NSSCs), are united in their mission to improve nuclear security education, training, and culture, but important differences exist among them. These differences, including institutional structure, geographic focus, and national priorities, make it difficult to generalize about the potential long-term trajectories and degree of harmonization among the centers. At the July 17 workshop at CSIS, participants identified a few key themes, such as balancing transparency and consistency and promoting culture, consistency, and best practices, through which to evaluate the activities of the centers currently operating and the longer-term potential of COEs networks.

Sharon Squassoni kicked off the meeting with a short presentation on why collaboration among the COEs was important and how it could be implemented. Ken Luongo of the Partnership for Global Security added specific recommendations for collaborative efforts. Luongo suggested that COEs are one of the biggest legacies of the nuclear security summits and put forward seven areas in which they could make contributions: sharing nonsensitive information, using simulation and table-top exercises, developing peer review, innovating and standardizing best practices, testing approaches to observable confirmation of performance to build security confidence (i.e., remote monitoring and video confirmation), developing criteria for personnel certification, and networking with universities and diplomatic academies.

---

*COEs are one of the biggest legacies of the nuclear security summits*

---

Participants discussed some of the differences in threat perceptions among the COEs, while noting that China and Korea have been inviting lecturers to discuss nuclear security risks. Japan's Integrated Support Center (ISCN) and Korea's International Nuclear Security Academy (INSA) devote a significant percentage of their efforts to international training, while the rest is targeted at developing national capabilities. China currently is focused mostly on national capacity building.

Regarding sharing information, the Asian COEs have begun exchanging information about course offerings, sharing resources by inviting guest lecturers from the other centers, and sending observers to study the curriculum and approaches that each COE takes. More significant sharing, particularly in the area of policy-making, will depend in part on their interest, flexibility, and organizational/bureaucratic authority. For example, COEs that are under the authority of the regulator or closely associated with it (for example, INSA is part of KINAC, the Korean regulator) may be able to participate in International Physical Protection Advisory Service (IPPAS) missions, whereas other COEs likely cannot. For COEs that are basically run by the government regulator (e.g., INSA/KINAC), this is not outside the realm of possibility, although there would have to be guidelines from the government for access to certain sensitive facilities. One approach would be to organize different kinds of collaboration among similarly oriented or structured COEs. Newcomer countries are seeking training in regulatory systems. Afterward, they may need training in many areas that may not be on current curricula.

Discussion continued on the varieties of models and technical depth of the various COEs. For example, China's COE is structured to reflect the operator model that is grounded in the operational, technical, and procedural aspects of running nuclear facilities. Other countries, like Thailand, host COEs at universities. The scope of COE responsibilities, especially for newcomer countries, will depend on the technical depth of resources in those states.

Participants discussed the need to develop guidelines on insider threats and mobilize top governmental officials and leaders on these issues. Discussion

underlined the importance of general education, exercises, and certification standards, as well as the necessity of reporting, satisfying international (IAEA) regulations, and ensuring the adequacy of training. Several participants highlighted simulations as a particularly useful approach. Participants also emphasized the need for personnel reliability and the importance of security culture, citing recent concerns in the United States, particularly regarding security breaches in biological laboratories. Both the South Korean and Japanese COEs have dedicated resources to building capacity in personnel reliability and security culture.

Radiological source security may be another potential arena for cooperation. Many sites around the world have quantities of IAEA-defined Category I radioactive material. These Category I materials are among the most dangerous of radioactive sources and could potentially be repurposed for use in a “dirty” bomb. Although none of the Asian COEs treat radiological security as a primary focus, they address radiological security in some of their training and materials. For instance, Japan will host a radiological source security course, and South Korea will do a one-week Megaport radiological source program. Often, however, safety and health officials are responsible for radiological source security. For example, in South Korea, the Korea Institute of Nuclear Safety is responsible for radiological security work in Korea, not KINAC.

Another avenue for collaboration between newcomers and advanced nuclear states is reducing the gap between the capacities of provider/supplier countries and recipient countries, which was described as developed bureaucracies versus a handful of people. As a recipient state embarking on a nuclear energy program, Vietnam lacks capacity and therefore appreciates the COEs’ efforts, particularly in providing access to expertise. In Indonesia, nuclear security remains secondary to nuclear safety. The regional COEs can play a valuable role in assessing where countries lack capabilities and then bolstering human capacity and building competence. One participant suggested that while some would like to promote international cooperation, the nature of this will be different from country to country. The primary objective for many countries is to build national capacities. Another stressed that it was nonetheless important to ensure a consistent approach.

Experts discussed questions of responsibility, certification, and recertification. One participant mentioned the possibility of certification to gauge how well trainees are doing through an international body, such as the World Institute for Nuclear Security, and requiring recertification after a certain period of time. Unlike other countries, Australia has national inspectors for meeting nuclear security guidelines. Sharing best practices and methodologies could help achieve consistency among COEs, despite varying threat perceptions. Moving beyond the IAEA approach and INFCIRC/225 may be necessary. In thinking about harmonizing capabilities, one approach would be to emulate the U.S. national laboratory system, wherein U.S. labs have developed nuclear security expertise that is overlapping but also complementary. One participant suggested translating the U.S. national labs model to the international COE network, recognizing that natural competition may be difficult to overcome.

The workshop then focused on the nature of best practices, what the phrase “best practices” actually means, the significance of peer review, and the nature of cultural (in)consistencies. Some participants noted that “best practices” was an extremely vague, generic term, possibly for use when someone doesn’t want to spell out details. Often the term is used for voluntary activities, in contrast to mandatory activities. Another participant mentioned that cultural distinctions need to be honored and preserved in peer reviews. A peer review in a country like South Korea, where there is no equivalent phrase for “peer review,” is likely to have different outcomes than elsewhere.

---

*Sharing best practices and methodologies could help achieve consistency among COEs, despite varying threat perceptions.*

---

## The Second Workshop

### Key Findings of the Discussion

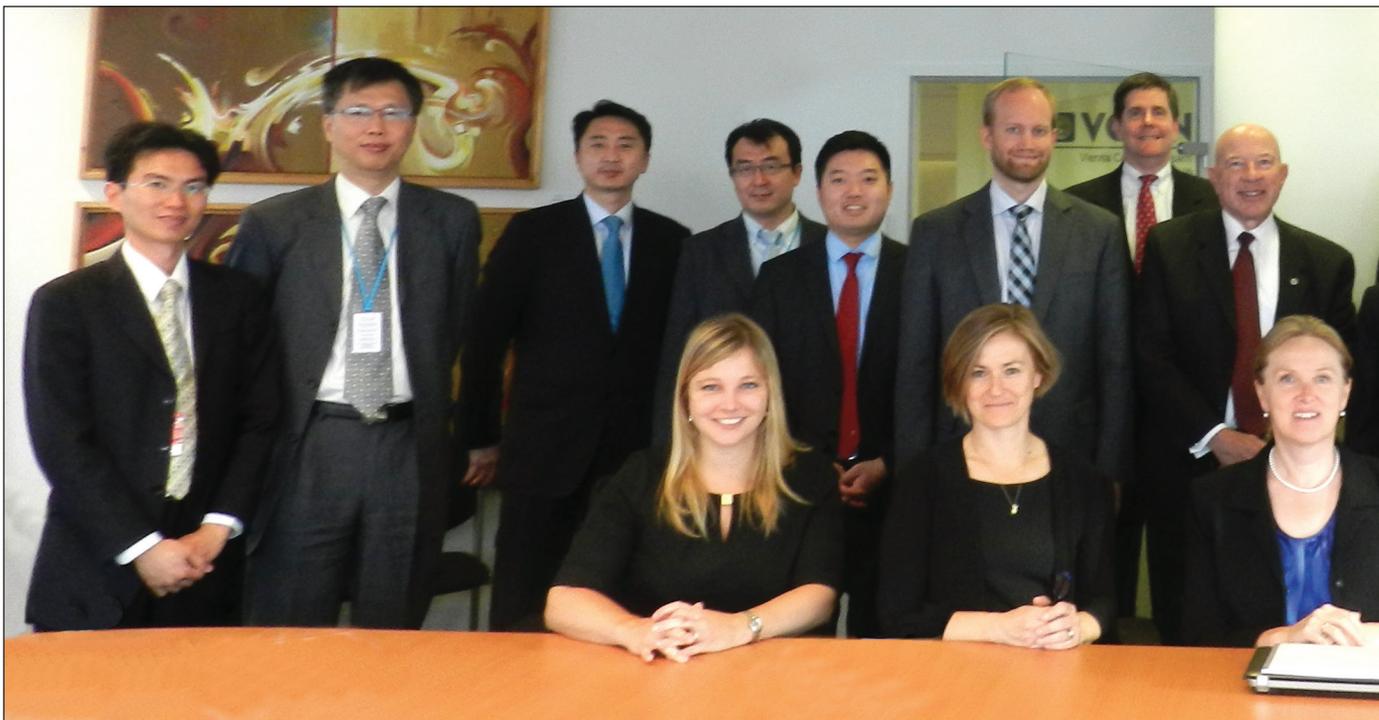
1. The NATO, EU, and IAEA networks of COEs all try to standardize training and expertise, with varying degrees of success and approaches. NATO is able to impose standardization by virtue of its structure, while the EU and the IAEA attempt to harmonize training. EU and IAEA efforts would likely be helped by accreditation for the COEs and certification for training, but the IAEA does not have the authority to establish accreditation or certification requirements.
2. Nuclear security COEs could encourage regional collaboration by identifying functions that are particularly well suited for regional implementation.
3. Achieving consistency among COEs is complicated by their different authority structures: some are university based, some are government owned but established by research agencies, and still others have been set up by nuclear regulatory authorities. These latter types of COEs may be most able to provide a bridging function after the last Nuclear Security Summit.
4. Sustainability of the COEs after the 2016 summit is not a given; states should consider measures to help cement high-level political support, such as a gift basket for the COEs on reporting post-summit implementation of initiatives, addressing capacity gaps for newcomer countries, or even a hands-on, visual demonstration of COEs' capabilities at the summit.

The workshop began with presentations on the IAEA, EU, and NATO experiences with COEs.

A representative of the IAEA outlined current IAEA activities with respect to COEs. The IAEA has been supporting collaboration through two networks: the International Nuclear Security Education Network and the International Network for Nuclear Security Training and Support Centers (NSSC Network). The NSSC Network, which now has over 60 members, helps IAEA member states implement guidance on nuclear security through human resource development, creation of a network of experts, and provision of technical and scientific support. The IAEA's role in the network is in maintaining the online Nuclear Security Information Portal; facilitating collaboration, information sharing, and exchange among working groups and members; and supporting other NSSC activities, such as nuclear security training.

The IAEA has 36 course topics in its nuclear security training catalog and is trying to modularize and standardize its training. It has also developed online e-learning modules, which help reduce the required classroom time for instructors and allow more technical discussion.

Participants discussed the merits of certification requirements. The IAEA views certification as the responsibility of member states. One participant suggested that the IAEA could accredit COEs, ensuring that their training programs match IAEA standards. The IAEA currently works to implement its training program increasingly through NSSCs by organizing train-the-trainer programs. These help ensure that trainers and training team leaders know the content, guidance, and procedures of the IAEA. In general, the



IAEA functions as a secretariat, source of internationally accepted guidance on nuclear security, and, to a limited extent, provider of assistance.

Guy Roberts, former deputy assistant secretary general for weapons of mass destruction for NATO, described NATO's experience with COEs. In 2002, the alliance created Allied Command Transformation (ACT) to help facilitate NATO's adaptation to the post-Cold War security environment. ACT has overall responsibility for the 20 COEs that are operating under NATO, including their establishment, accreditation, preparation of candidates for approval, and periodic assessments.

In the NATO system, a proposed COE must demonstrate how it would contribute to NATO's four pillars of transformation: education and training; doctrine development and standards for effective interoperability; analysis and lessons learned; and concept development and evaluation/standardization. COEs generally specialize in a particular area to avoid duplication of assets. Some examples of COE specializations are defense against terrorism; chemical, biological, radiological, and nuclear (CBRN) consequence management; improvised explosive devices; and military police.

For accreditation, NATO COEs must conform to alliance standards, have participation by at least two member states and a joint perspective from all military services, be funded either nationally or by a group of nations, and be open to all alliance members. They are neither part of NATO's Command Structure nor under the hosting nation; they belong to the supporting nations (the ones who provide resources and

funding) and are directed by a steering committee composed of these nations.

These NATO COEs maintain subject matter experts on a broad range of issue areas and conduct robust training, exercise, and education programs for NATO and partner countries. They also provide a reach-back capability when needed. The alliance universally applies COE recommendations in order to establish interoperability.

NATO sets standards for its COEs through its accreditation, certification, and recertification process by an independent body (ACT). This ensures that NATO COEs identify deficiencies and correct them. Finally, the NATO COEs are legal entities with rights and privileges, which help to ensure their permanence in the long term.

Participants discussed what nuclear security COEs could learn from NATO COEs. NATO has to coordinate many fewer member states (28) than the IAEA (166). In the case of the IAEA, there are still some disagreements among member states even over the terms and role of the NSSC Network. Another participant observed that it is nonetheless striking that NATO has achieved such collaboration in traditionally sovereign issue areas (e.g., military training). Standardization is important to NATO because of the need for interoperability among military forces. Within the COEs network, NATO achieves this from the bottom up: when a COE makes recommendations about standards, it will brief the military command. Once accepted, NATO publishes the standards. The sharing of classified information is facilitated by NATO's security classification guidelines.



Front row (left to right): Casey Deering, Sharon Squassoni, Elena Sokova, Anya Loukianova, Kenneth Luongo, Anita Nilsson

Back row (left to right): Huang Ping, Li Junjie, June Byong Park, Tatsushi Ryosen-An, Robert Kim, Dan Johnson, Brian Hanson, Guy Roberts, Kwan-kyoo Choe, Daniel Salisbury, Yosuke Naoi, Zdenka Palajova, Jenna Parker, Hendriyanto Haditjahyono, Michelle Cann

The top-down organization of NATO COEs, with accreditation by ACT, is very different from the IAEA's NSSC Network. For nuclear security COEs, the IAEA functions more as a meta-COE that distributes the knowledge to others who are also disseminating it. Another difference is the relationship of the host state to the center. In the NATO system, once a COE is established, it is a NATO organization, and if the host country does not support it, other countries can.

Regarding cost, NATO COEs are relatively inexpensive compared to other elements of the NATO budget. The most expensive cost component is providing expertise. A host nation will often solicit other nations to fill some of the COE's positions and support some of the costs.

Similar to the COEs for nuclear security, the NATO COEs focus on a mix of topics. Because NATO is a military alliance, its COEs address rising military challenges (like how to respond to improvised explosive devices) as well as enduring topics such as training military police for peaceful environments. Unlike nuclear security COEs, NATO COEs procure personnel through a much more collaborative approach: host nations can ask for experts from other supporters of the COE.

---

*As one of the tangible achievements of the summit process, the COEs have a responsibility to innovate, perhaps in policy dimensions.*

---

A representative of the Joint Research Centre of the European Commission described how collaboration works under the EU's CBRN network. The EU CBRN COE Initiative aims to boost cooperation, enhance the institutional capacity for risk mitigation, and implement a coherent and coordinated CBRN risk mitigation policy among partner countries. Established in 2010, the CBRN network now includes 8 COE regional secretariats globally and 47 total official partner countries (as well as 20 to 25 potential partner countries), and has a budget of 156 million euros (approximately 177 million US dollars) for 2014–2020. The newer EU COE projects are larger regional efforts with longer implementation periods (up to 36 months) and are expected to be more sustainable. There are currently 15 regional projects in Southeast Asia and 4 international projects under implementation. The EU CBRN COE has conducted needs-assessment questionnaire discussions (with approximately 300 questions) and develops national action plans that propose steps to address national CBRN gaps and needs.

The afternoon session focused on approaches to improve consistency among, and sustainability and transparency of, the COEs. One suggestion for improving consistency was to give the COEs a role in reporting on implementation of the Strengthening Nuclear Security Implementation initiative announced at the 2014 summit. Following the 2014 summit, the IAEA distributed information on the initiative in an INFCIRC containing a note verbale from the Netherlands. At present, there is no mechanism for assessing adherence or reporting on any of those measures, and the INFCIRC does not call for one.

One participant emphasized the necessity of predictability in the course offerings of the COEs. The training is ad hoc and the planning basis is annual, which is not sufficient.

Another participant suggested that there could be guidance for specific types of countries or subject areas, according to the level of development of the country or the type of infrastructure. COEs could also crowdsource information on training and educational programs from universities, regulators, operators, and the COEs themselves in order to establish a more holistic assessment of existing programs and unaddressed gaps.

As one of the tangible achievements of the summit process, the COEs have a responsibility to innovate, perhaps in policy dimensions. However, this will require a model for interaction and collaboration among COEs, as well as political

sustainability. This political support is also necessary to bring the COEs beyond a superficial and limited technical approach. One participant suggested a three-pronged approach for the Asian COEs: deepening the Asia Regional Network collaboration, including hosting an annual meeting in addition to the current meetings; holding an annual symposium on COE collaboration (perhaps by CSIS and the Stanley Foundation); and convening another group that includes the three Asian COEs and the United States. To promote transparency, COEs could peer review each other's courses and conduct joint train-the-trainer courses with the United States and Australia. To promote sustainability, stable financial support will be key, perhaps using the mechanism of requiring (by law) domestic training. After 2016, it would be useful to hold regional forums in Asia that include high-level experts from the government, industry, and nongovernmental organizations.

One participant asked if COEs functioned as technical support organizations akin to those in the nuclear safety area. Some do, particularly if they are affiliated with a regulatory authority. Some of the COEs may have very narrow mandates and functions. In the South Korean and Chinese cases, each COE functions under a regulatory body, while the Japanese COE was established by the Japan Atomic Energy Agency. Although the South Korean COE collaborates with the research and development and a policy-related divisions within KINAC, the establishment of a broader, integrated approach depends on the president of KINAC. In Japan's case, the COE offers training and nuclear security culture, as well as a venue of discussion for all stakeholders. In China's case, the COE is a technical support organization and is a subsidiary of the China Atomic Energy Authority. Indonesia's Center for Security Culture and Assessment, which is starting to collaborate with Malaysia and Myanmar, is not a bricks-and-mortar center yet, but more of a community of experts.

In thinking about providing incentives for regional cooperation, it would be useful to identify some capacities that are not worthwhile for national programs (e.g., because they are too expensive) but could be worth pursuing on a regional scale. Substantively, there may be some areas (e.g., related to earthquakes, or, more generally, information security standards) that lend themselves to regional collaboration.

Participants also saw value in creating a one-stop shop for a repository of lessons learned and best practices, which could also be a potential gift basket. Case studies are particularly valuable in teaching lessons and receive a great deal of attention. The IAEA may not be the best route for this, since it can't always get information, or in-depth information.

Participants discussed specific proposals for the 2016 Nuclear Security Summit. The summit could include a gift basket or an initiative on COEs that is more forward leaning than the 2014 gift basket. For example, it could include a recommendation for the COEs to track summit implementation. COEs could adopt a specific role in addressing the capacity gaps of newcomer countries or develop a plan for universal implementation of best practices. Participants discussed whether to limit this approach to Asian COEs or to take a more global approach. A regional gift basket could be a strong example for other regions, particularly for newcomers, and perhaps an existing regional organization (e.g., the Association of Southeast Asian Nations) could come forward and solicit countries to do it. Another specific proposal was for COEs to make a joint demonstration of technical capacity at the summit.

---

*There is value in creating a one-stop shop for a repository of lessons learned and best practices, which could also be a potential gift basket.*

---

## Conclusion

COEs for nuclear security, which predated the nuclear security summits but have blossomed since then, have significant potential for improving the overall sustainability of nuclear security through their activities that help build national and regional capacities. Although the COEs vary significantly in their objectives, funding, structure, and authorities, they do have some similarities that may lend themselves to collaborative activities. The two networks that are currently operating—the EU’s CBRN COE Network and the IAEA’s NSSC Network—are also varied in their structure and functioning. While these networks may help harmonization, they are unlikely to devise additional responsibilities for COEs, particularly in any policy areas.

NATO COEs, while not devoted to nuclear security, offer an example of how a top-down structure can ensure harmonization, feedback from centers in developing policy and standards, and adequate funding and resources. The accreditation process ensures excellence but requires a central, managing hub.

The COEs are evolving into missions and responsibilities, and their potential for carrying forward the Nuclear Security Summit process should not be underestimated. In particular, certain actions to promote transparency, consistency, and sustainability may be desirable. These could be as simple as peer reviewing training courses, collaborating to establish training standards or certification requirements for individuals, recommending the IAEA develop an accreditation process, or convening a joint gift basket promoting future collaboration among COEs.

## Center for Strategic and International Studies

For over 50 years, the Center for Strategic and International Studies (CSIS) has worked to develop solutions to the world’s greatest policy challenges. Today, CSIS scholars are providing strategic insights and bipartisan policy solutions to help decisionmakers chart a course toward a better world. CSIS is a nonprofit organization headquartered in Washington, DC. The Center’s 220 full-time staff and large network of affiliated scholars conduct research and analysis and develop policy initiatives that look into the future and anticipate change.

Founded at the height of the Cold War by David M. Abshire and Admiral Arleigh Burke, CSIS was dedicated to finding ways to sustain American prominence and prosperity as a force for good in the world. Since 1962, CSIS has become one of the world’s preeminent international institutions focused on defense and security; regional stability; and transnational challenges ranging from energy and climate to global health and economic

integration. The CSIS Proliferation Prevention Program combines independent analysis and policy solutions to help develop new tools for slowing proliferation, identify next steps in arms control, and illuminate the path toward a sustainable and safe nuclear future.

Former U.S. senator Sam Nunn has chaired the CSIS Board of Trustees since 1999. Former deputy secretary of defense John J. Hamre became the Center’s president and chief executive officer in 2000.

1616 Rhode Island Avenue, NW  
Washington, DC 20036 USA  
202-887-0200  
202-775-3199 Fax  
ppp@csis.org

## The Stanley Foundation

The Stanley Foundation advances multilateral action to create fair, just, and lasting solutions to critical issues of peace and security. Our work is built on the belief that greater international cooperation will enhance global governance and spur global citizenship. The foundation frequently collaborates with a wide range of organizations using different forums, formats, and venues to engage policy communities. We do not make grants.

Our programming addresses profound threats to human survival where improved multilateral governance and cooperation are fundamental to transforming real-world policy. Current efforts focus on policy improvement to prevent genocide and mass atrocities, eliminate the threat of nuclear terrorism, and drive collective and long-term action on climate change. The foundation also works to promote global education in our hometown of Muscatine, Iowa, and nearby.

A private operating foundation established in 1956, the Stanley Foundation maintains a long-term, independent, and nonpartisan perspective. Our publications, multimedia resources, and a wealth of other information about programming are available at [www.stanleyfoundation.org](http://www.stanleyfoundation.org).

The Stanley Foundation encourages use of this report for educational purposes. Any part of the material may be duplicated with proper acknowledgement. Additional copies are available. This brief is available at [www.stanleyfoundation.org/resources](http://www.stanleyfoundation.org/resources).

209 Iowa Avenue  
Muscatine, IA 52761 USA  
563-264-1500  
563-264-0864 Fax  
info@stanleyfoundation.org